

Statistical Comparison of NPA in Scheduled Commercial Banks in India

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Abstract

There is no doubt that at present Banking industry has been presumed as a backbone for any budding economy. But on a darker side “Non-performing assets” appeared as a black chapter for industry as well. This study therefore aims to compare banks from both public and private zone in the light of NPAs and time duration for this analysis has been considered between years 2004-2018. ANOVA test has been applied to test the statistical hypothesis. The multiple comparisons were done using Tuckeys pairwise analysis. “Gross NPA, Gross Advances and Gross NPAs to Gross Advances Ratio (%)” were found maximum in “public sector banks” significantly. Though in recent years all these variables have shown decline trend.

Keywords: NPA, Gross Advances, NPA to GA ratio, ANOVA, Trend analysis, Tuckeys test.

Introduction

For any flourishing economy, a strong banking sector is definitely a foundation and the poor performance of banking sector could have affected adversely other sectorial performance of market. It is realized that since few years “non-performing assets” have become major concerns. Level of “NPAs” in any bank is an indicator that shows cast bank’s performance. Bank with an increased level of NPAs always directs towards credit evasions to a great extent from which profitability inclusive of banks’ net worth may get affected & likewise wear away worth of asset. In all, “NPA” growth encompasses provisions’ inevitability, ultimately diminishes general profits. Hence the shareholders’ value also. Not only NPAs are affecting the banks but also its mal effect can be visualized easily on the economy as whole. Rajput, N. et. al. (2012) quoted NPA as a great concern for Indian Banks since long time. With the inception of the journey towards the adoption of Basel II norms, a threat of penetrating the minimum level of capital adequacy looms large for some of banks. In the words of Kaushal Mehta, Non-Performing Asset represents the category of an asset or account which has been identified as sub-standard, uncertain guidelines / supervision involving in categorization of asset issued as per the central bank of the country. It is realized that banks ought to work towards increasing profits but declining level of “NPAs” is also need of the hour (Rao, M., & Patel, A., 2015). Hence, present study evaluates “non-performing assets” of “scheduled commercial banks”.

Review of Literature

Maheshwari (2015) evaluated the Non-Performing Asset of “State Bank of India”. He analysed policies pursued by “SBI” to hold NPA & recommends certain approach for prompt reclamation of NPA. She suggested that Though NPAs at bank have been closely monitored these days to curtail down its level. Appraising credit proposals has become stricter to bring required results. Tandon and Singh (2015), comparative view of “NPA” of “Public, private and foreign banks” and also pointed out the reasons for high level of NPA and factors jolting the banks. He concluded that there is a need to upgrade credit system investment in better talent, use of technology to share credit information and credit appropriate provisioning to absorb financial stresses so as to push PSBs, investing cycle and improving infrastructure. Agarwal, D. R., & Kapur, S. (2018), examined progress & influence of “GNPAs” in “private sector banks” during 2000-2013. She found that “private sector banks” NPA has reduce from year 2000 to 2013. Banks ought to safeguard attaining efficiency in allocating credit and individuals who don’t have enough access to banking services should be encouraged but cautiously so as to give them chances to improve their financial conditions. Helge & Padhye

(2016) identified administration of banks in private sector more efficient and professional as compared to banks under umbrella of public sector. This way they understand these private players more competent in recovery. Miyan, M. (2017) has done proportional analysis of various factors affecting NPAs and ROI of banks from public & private zone during year 2011 to 2016. "Gross NPA %, Net NPA %, returns % on assets, growth % of Net NPA and growth % of return on assets" were computed to attain objectives. "State Bank of India" & "Punjab National Bank" & "HDFC Bank" & "ICICI Bank" was considered for comparative study. NPAs and ROI found with downward trend. "Non-Performing Assets" of "public sector banks" were found greater than "private sector banks". ROI found much lower in PSU banks. "t-tests" indicates results not statistically significant ($p < 0.05$). "Rajeev, M., & Mahesh, H. P. (2010)" have observed inclinations of "NPAs" from many extents and enlightens in what way simple acknowledgment of delinquent & self-monitoring has been competent to diminish it. It likewise displays that "public sector banks" in India are as decent in dropping "NPAs" equivalent to private sector.

Objective

To compare NPAs among "scheduled commercial banks" operational in India.

Methodology

The "Gross NPA, Gross Advances and Gross NPAs to Gross Advances Ratio (%)" of

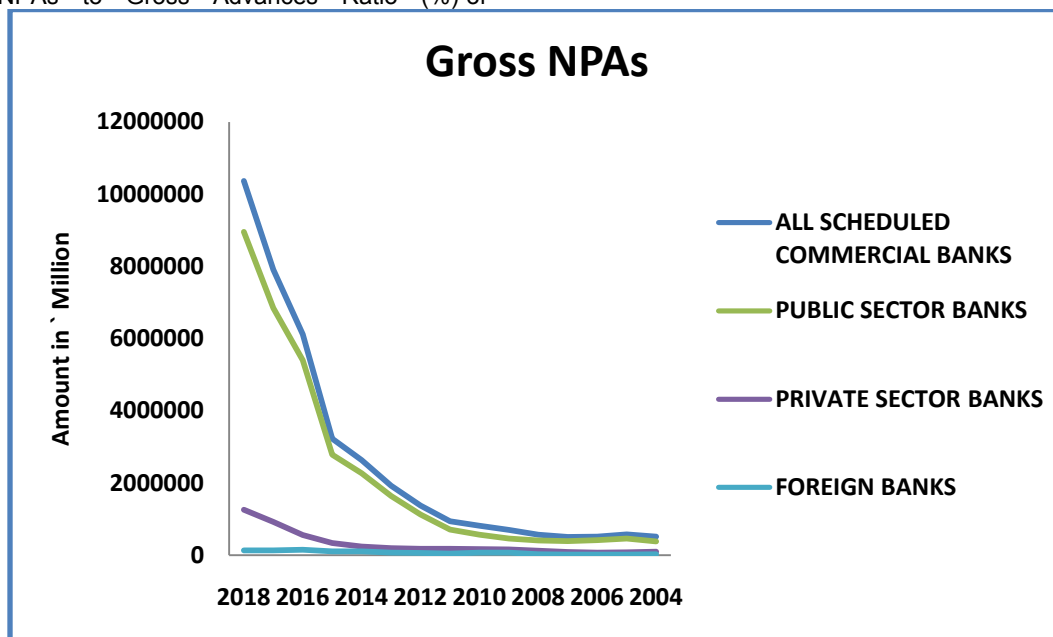
"scheduled commercial banks" were considered as research variables. the annual data from 2004 to 2018 were taken for analysis as its available on RBI website (Source: Department of Banking Supervision, RBI). the classification of banks was done in and as public, private and foreign banks. the trend was analyzed graphically whereas the difference was analyzed using one way Analysis of Variance. The descriptive statistics was computed as "mean, Standard deviation and standard error of mean".

Results and discussion

Trend analysis has been done graphically for "Gross NPAs, Gross Advances and Gross NPAs to Gross Advances Ratio" of "public, private and foreign banks". Then descriptive analysis has been attempted as well to compare the state of "Gross NPAs, Gross Advances and Gross NPAs to Gross Advances Ratio". Then with the help of ANOVA, hypothesis has been tested to understand the significance of the difference in "Gross NPAs, Gross Advances and Gross NPAs to Gross Advances Ratio" of "public, private and foreign banks".

Trend analysis of Gross NPAs

"Gross NPAs" of 'public, private and foreign banks' have been plotted along with "scheduled commercial banks" to understand the trend of Gross NPAs during 2004 to 2018.



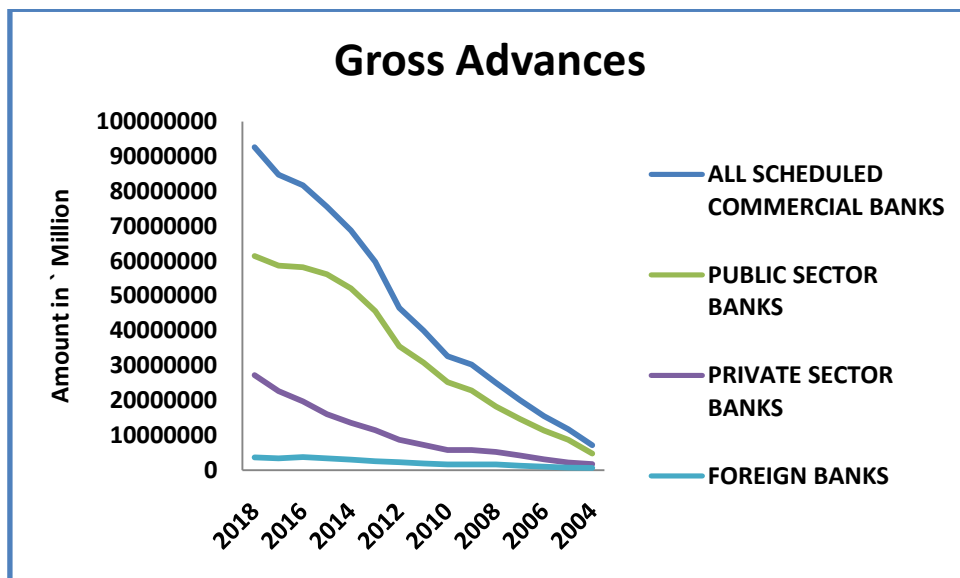
Graph 1: Gross NPA (Amount in ` Million)

"Gross NPAs" of "foreign and private banks" were quite stagnant till year 2014 however till then NPAs of "private sector banks" have increased to a bit whereas NPAs of foreign banks remain almost unchanged and no significant growth was observed. On the other hand an increasing trend in this regard was experienced for "public sector banks" at a very great pace which is definitely a matter of concern for Indian economy. All "scheduled commercial banks" also found with similar nature of trend as "public

sector banks", though they were even on slight higher side during the study period.

Trend analysis of "Gross Advances"

Gross Advances of public, private and foreign banks have been plotted along with all "scheduled commercial banks" to understand the trend of Gross Advances during 2004 to 2018.

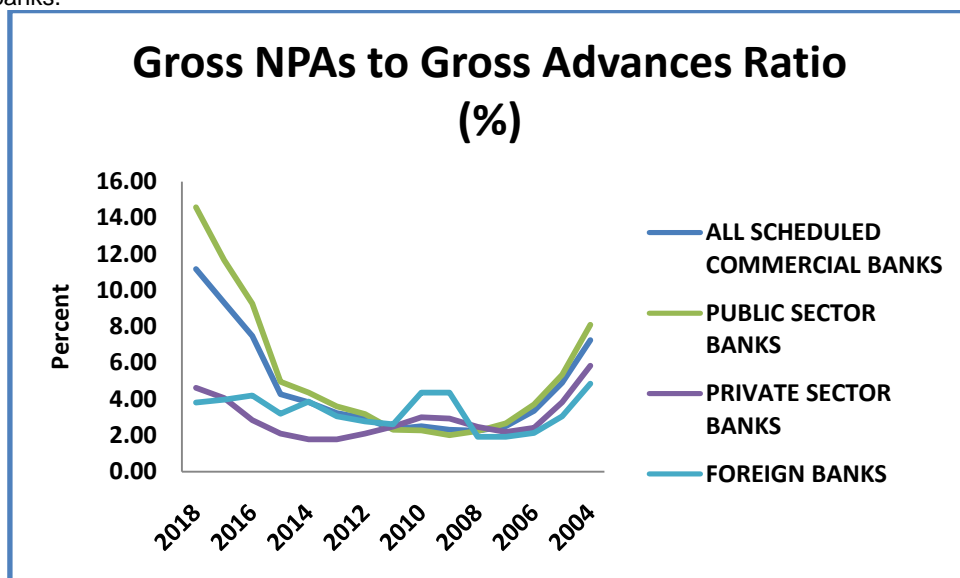


Graph2: Gross advances (Amount in ` Million)

All “scheduled commercial banks” and “public sector banks” have shown an increasing trend with high pace during the study period. “Private sector banks” though also have shown increasing trend but their pace was much less as compared to “public sector banks” and all “scheduled commercial banks”. Very slow pace in the trend of foreign banks’ Gross Advances was observed as compared to other category of banks.

Trend analysis of Gross NPAs to Gross Advances Ratio

Gross NPAs to Gross Advances Ratio of public, private and foreign banks have been plotted along with all “scheduled commercial banks” to understand the trend of Gross NPAs to Gross Advances Ratio during 2004 to 2018.



Graph3: Gross NPAs to Gross Advances Ratio (%)

Gross NPAs to Gross Advances ratio of foreign banks diminished significantly for the time period of year 2004 to year 2008 and then it rose for next two consecutive years. Year 2010 to year 2012 was the time of stagnancy. Since year 2012 an increasing trend was observed for foreign banks. “public sector banks” have shown declining trend year till year 2008-09 but till then for the rest of the period an increasing trend has been realized. After year 2014, this trend has increased with a much higher pace and found much ahead as compared to other

category of banks for “public sector banks”. For time period 2012 to 2017, “private sector banks” have shown most declining trend as compared to other banks.

Comparison of banks

H0: There is no significant difference in Gross NPAs, Gross Advances and Gross NPAs to Gross Advances ratio of Public, Private and Foreign Banks during the study period of 2004 to 2018.

Ha: There is significant difference in Gross NPAs, Gross Advances and Gross NPAs to Gross Advances

ratio of Public, Private and Foreign Banks during the study period of 2004 to 2018.

Table1: Descriptive

Descriptives		Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Gross NPAs	Public banks	2189225.80	2714407.30	700856.95	686037.14	3692414.46
	Private banks	313688.07	343344.97	88651.29	123549.96	503826.17
	Foreign banks	74642.87	46635.36	12041.20	48817.06	100468.67
	Total	859185.58	1815740.35	270674.59	313676.78	1404694.37
Gross Advances	Public banks	33611984.80	20264109.52	5232170.58	22390094.99	44833874.61
	Private banks	10326009.27	7929860.80	2047481.25	5934598.73	14717419.80
	Foreign banks	2163996.93	1078803.10	278545.76	1566575.69	2761418.18
	Total	15367330.33	18237501.46	2718686.20	9888178.32	20846482.35
Gross NPAs to Gross Advances Ratio (%)	Public banks	5.35	3.84	0.99	3.22	7.48
	Private banks	2.96	1.16	0.30	2.32	3.60
	Foreign banks	3.34	0.95	0.24	2.81	3.86
	Total	3.88	2.56	0.38	3.11	4.65

Table 2: ANOVA

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Gross NPAs	Between Groups	#####	2	#####	8.059	.001
	Within Groups	#####	42	#####		
	Total	#####	44			
Gross Advances	Between Groups	#####	2	#####	25.246	.000
	Within Groups	#####	42	#####		
	Total	#####	44			
Gross NPAs to Gross Advances Ratio (%)	Between Groups	49.644	2	24.822	4.384	.019
	Within Groups	237.786	42	5.662		
	Total	287.430	44			

It is clearly evident from ANOVA results that "Gross NPAs, Gross Advances and Gross NPAs to Gross Advances ratio" of "Public, Private and Foreign Banks" were significantly different during the study period of 2004 to 2018 since 'p' value was less than 0.05. Hence null hypothesis was found rejected. As stated in the following table of multiple comparison where Tukey HSD test has been applied to observe the pair wise differences in mean values of research variables. Gross NPA was found significantly different in "Public and private sector banks" & "Public and Foreign banks" (p < 0.05). Whereas "Private and foreign banks" were not found much statistically different for Gross NPAs (p = 0.910). "Gross Advances" was found significantly different in "Public and private sector banks" & "Public and Foreign banks" (p < 0.05). Whereas "Private and foreign banks" were not found much statistically different for Gross Advances (p = 0.190). Gross NPAs to Gross Advances Ratio was

found significantly different in "Public and private sector banks" (p < 0.05). Whereas "Public and Foreign" (p = 0.064) & "Private and foreign banks" (p = 0.902) were not found much statistically different for "Gross NPAs to Gross Advances Ratio". "Gross NPAs" was found highest in "Public banks" (Rs. 2189225.80 million) followed by "Private Banks" (Rs. 313688.07 million) and least for "Foreign banks" with Rs. 74642.87 million. As far as "Gross Advances" is concerned, "Public banks" had highest during year 2004 to 2018 with Rs. 33611984.80 followed by "Private Banks" (Rs. 10326009.27) and at the bottom there were "foreign banks" with Rs. 2163996.93 as "Gross Advances". "Gross NPAs to Gross Advances Ratio" was thus found highest for Public banks (5.35%). With 3.34%, "foreign banks" were on the second place and "Private Banks" with 2.96% were on the last in the list.

Table 3: Multiple Comparisons

"Tukey HSD"							
"Dependent Variable"	(I) "Bank"	(J) "Bank"	"Mean Difference" (I-J)	"Std. Error"	"Sig."	"95% Confidence Interval"	
						"Lower Bound"	"Upper Bound"
Gross NPAs	Public banks	Private banks	1875537.73	576890.81	.006	473985.11	3277090.35
	Public banks	Foreign banks	2114582.93	576890.81	.002	713030.31	3516135.55
	Private banks	Foreign banks	239045.20	576890.81	.910	-1162507.42	1640597.82
Gross Advances	Public banks	Private banks	23285975.53	4593138.08	.000	12126975.23	34444975.83
	Public banks	Foreign banks	31447987.87	4593138.08	.000	20288987.57	42606988.17
	Private banks	Foreign banks	8162012.33	4593138.08	.190	-2996987.97	19321012.63
Gross NPAs to Gross Advances Ratio (%)	Public banks	Private banks	2.39	0.87	.023	0.28	4.50
	Public banks	Foreign banks	2.02	0.87	.064	-0.10	4.13
	Private banks	Foreign banks	-0.38	0.87	.902	-2.49	1.73

Conclusion

"Non-performing assets (NPAs)" have been a foremost apprehension for "Indian commercial banks" in current years. All "scheduled commercial banks" and "public sector banks" have shown an increasing trend with high pace during the study period. "Private sector banks" though also have shown increasing trend but their pace was much less as compared to "public sector banks" and all "scheduled commercial banks". Very slow pace in the trend of foreign banks' Gross Advances was observed as compared to other category of banks.

References

1. Agarwal, D. R., & Kapur, S. (2018). An Analysis of Rising Share in NPAs of "public sector banks" and Meaningful Parameters of Indian Economy. *IME Journal*, 12(1and2), 34-41.
2. Miyan, M. (2017). A Comparative Statistical Approach towards NPA of PSU and "private sector banks" in India. *International Journal of Advanced Research in Computer Science*, 8(1).

3. Swain, R. K., Sahoo, M., & Mishra, A. P. (2017). Non-performing assets of "scheduled commercial banks" in India: Its regulatory frame work. *Parikalpana: KIIT Journal of Management*, 13(2), 154-162.
4. Helge, E. J., & Padhye, P. (2016). Non-Performing Assets of Public Sector and "private sector banks" in India: An Empirical Analysis. *Journal of Commerce and Management Thought*, 7(2), 298-308.
5. Maheshwari, N. (2015). Management of Non-Performing Assets in SBI. *Impact of Make in India Efforts on Management of Business*, 60.
6. Rao, M., & Patel, A. (2015). A study on Non-performing assets management with reference to "public sector banks", "private sector banks" and foreign banks in India. *Journal of Management and Science*, 5(1), 30-43.
7. Tandon, D., Singh, H., & Singh, K. (2015). Credit Default Modelling in Indian Banks-Analysis using

- Altman Z Score. Asian Journal of Research in Social Sciences and Humanities, 5(11), 93-110.*
8. Aggarwal, S., & Mittal, P. (2012). Non-performing assets: Comparative position of public and "private sector banks" in India. *International Journal of Business and Management Tomorrow, 2(1), 1-7.*
 9. Rajput, N., Arora, A. P., & Kaur, B. (2012). *Management of non-performing assets a study of Indian "public sector banks". International Journal of Managment, IT and Engineering, 2(4), 197-210.*
 10. Rajeev, M., & Mahesh, H. P. (2010). *Banking sector reforms and NPA: A study of Indian Commercial Banks. Bengaluru: Institute for Social and Economic Change.*