



# A STUDY OF NON-PERFORMING ASSETS (NPA) AND ITS IMPACT ON THE PROFITABILITY OF THE INDIAN BANKING SECTOR

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**Abstract:** *Healthy financial sector is necessary for the growth of the Indian economy. Banking sector is facing the problem of non-performing assets since many years' especially public sector banks. Higher NPA leads to reduction in the profits of the banks and also lead to erosion of their capital. This paper covers the study of NPA and its impact on the profitability of the banks for a period of 5 years starting from 2019 to 2023. To study the impact on profitability various ratios like return on assets, equity and investments were considered. The paper also covers the risk assessment of the banks by studying capital adequacy ratio.*

**Key Words** NPA, CRAR, ratios, advances.

## 1. INTRODUCTION:

Indian financial system is considered as a bank based economy which means the individuals and the corporates mostly rely on the banking system of the country to meet their financial needs. In India, banking system is also considered as the backbone of the country. In such scenario it becomes necessary that the system works efficiently and remain in place. The major role of any bank is providing loans and accepting deposits and thus it becomes necessary that there is no mismatch in these assets and liabilities for the overall betterment of the banks. The loans are considered as assets since they generate major income for the banks and the deposits are considered as liabilities since the bank needs to pay the interest expense on it. If the bank regularly gets its income they are able to pay its interest expense on time but if sometimes the assets stop generating income, it becomes difficult for the banks and thus the problem of NPA (non-performing assets) arises.

Non-performing assets are those assets who haven't generated income for a consecutive period of 90 days. They are further classified into 4 category depending on the period they are unpaid:

**Standard advances:** These are those assets whose interest is paid on time and there is no default for consecutive period of 90 days.

**Substandard advances:** These are the one which are been defaulted for a period of 90 days but are not been defaulted for more than 12 months.

**Doubtful advances:** The default of such advances ranges from one year to 3 years.

**Loss advances:** These are those which are been defaulted for more than 3 years and are generally considered as bad debts.

The paper is classified into two sections. Section I covers the rise and fall of NPA for all public sector banks, private sector and foreign banks. Section II covers the study of NPAs and profitability ratios of top 10 banks according to their market capitalization as per March 2024.



**2. LITERATURE REVIEW:**

Studies on Non-Performing Assets (NPAs) and their effects on profits and financial health have been a major source of worry for the worldwide banking industry. NPAs have attracted special attention in terms of the Indian banking industry because of their potential effects on the economy and financial wellness.

Singh and Kapoor (2018), emphasized that non-performing assets (NPAs) have an impact on banks' profitability and their capacity to lend, which hinders economic growth. The analysis made clear that greater NPA levels raise the need for provisioning, which reduces banks' profit margins. Kumar (2017), highlighted how NPAs negatively impact banks' asset quality and profitability indicators.

Moreover, empirical data points to a reciprocal relationship between profitability and non-performing assets.

Mishra and Mohanty (2019), discovered that an increase in NPAs had a negative effect on banks' profitability ratios, including return on equity (ROE) and return on assets (ROA), suggesting that larger NPAs limit banks' ability to generate profits. Bhattacharya and Chatterjee (2020), claimed that prompt identification and resolution of non-performing assets (NPAs) might help minimize their negative effects on profitability.

Banks' reactions to non-performing assets (NPAs) are significantly influenced by the regulatory landscape. RBI (2021), emphasized the significance of strict regulatory frameworks and efficient oversight in reducing the rise of non-performing assets (NPAs) and strengthening the resilience of banks. The wider effects of non-performing assets (NPAs) on systemic risk and financial stability in the banking industry are highlighted by this regulatory viewpoint.

According to the research, NPAs have a major impact on banks' profitability in India. Proactive risk assessment, strong credit appraisal processes, and quick resolution of troubled assets are just a few of the effective management techniques that are necessary to lessen the negative effects of non-performing assets (NPAs) on the financial health of banks.

**3. OBJECTIVES:**

- To study and analyze the increase or decrease in the different categories of NPA for different banks.
- To study and analyze the rise in NPAs and advances in top 10 selected banks
- To find the impact of NPA on the various profitability ratios of the selected banks.
- To assess the risk of the selected banks through CRAR ratio.

**4. SCOPE OF TH THE STUDY:**

- The study is confined to the banks in India.
- The study covers the analysis of top 10 banks according to the market capitalization as per March 2024.
- The study is limited for a period of 5 years from 1st April 2019-31st March 2023.

**5. RESEARCH METHODOLOGY:**

The study is purely confined to the secondary data and the source for which is RBI

**6. RESULT / FINDINGS :**

*SECTION I*

**Table 1: Gross NPA's (amount in crores)**

Year	Public sector banks	Total advances	% of NPA	Private sector banks	Total advances	% of NPA	Foreign banks	Total advances	% of NPA
2023	4,28,197.36	86,10,114.70	5	1,25,211.84	54,62,976.20	2.3	9,544.48	5,00,471.72	1.9
2022	5,40,958.23	74,33,006.32	7.3	1,80,742.11	47,01,732.69	3.8	13,786.18	4,76,084.75	2.9
2021	6,16,615.56	67,70,362.53	9.1	2,02,266.14	40,97,039.56	4.9	10,199.07	4,20,616.72	2.4
2020	6,78,317.00	66,15,111.61	10.3	2,05,847.82	37,76,231.27	5.5	10,208.30	4,36,065.62	2.3
2019	7,39,541.00	63,82,460.85	11.6	1,80,872.44	34,42,346.66	5.3	12,182.57	4,06,881.32	3

Source: RBI



Table 1 depict the gross NPA's of all public sector banks, private sector banks and foreign banks for last 5 years. From the table, it is being clearly observed that the NPA's have declined from the year 2019 to the year 2023 signifying positive impact on the banking sector.

**Table 2: Types of advances (amount in crores)**

Standard advances			
Year	Public sector banks	Private sector banks	Foreign banks
2023	81,81,917.35	53,37,764.36	4,90,927.24
2022	68,92,048.10	45,20,990.57	4,62,298.57
2021	61,53,746.97	38,94,773.41	4,10,417.65
2020	59,36,794.61	35,70,383.45	4,25,857.32
2019	56,42,919.85	32,61,474.23	3,94,698.75
Substandard advances			
Year	Public sector banks	Private sector banks	Foreign banks
2023	63,551.57	34,306.54	1,698.01
2022	77,406.18	41,880.04	3,648.95
2021	1,13,246.31	67,335.63	3,647.95
2020	1,36,850.55	59,670.18	3,272.54
2019	1,40,758.82	44,231.55	3,163.10
Doubtful advances			
Year	Public sector banks	Private sector banks	Foreign banks
2023	2,33,780.70	56,338.58	6,664.67
2022	3,41,247.18	85,538.97	7,952.99
2021	3,67,614.57	1,00,500.52	5,565.62
2020	4,24,828.82	1,07,278.51	5,775.18
2019	5,23,537.60	1,25,914.44	7,985.42
Loss advances			
Year	Public sector banks	Private sector banks	Foreign banks
2023	1,30,865.08	34,566.72	1,181.80
2022	1,22,304.86	53,323.11	2,184.24
2021	1,35,754.68	34,430.00	985.5
2020	1,16,637.63	38,899.13	1,160.58
2019	75,244.58	10,726.44	1,034.05

Source: RBI

The NPAs are classified into four category standard, substandard, doubtful and loss assets depending on the duration for which it was unpaid. In table 1, we saw that NPA's have declined in the last 5 years. Through this table, we can conclude that all banks are able to manage their substandard and doubtful advances since they are declining but we can see that there is a rise in their loss assets which can impact their profitability since these are the one which are considered as bad debts. More the rise in loss advances will lead to increasing risk of bankruptcy for the banks.

**SECTION II**

Table: 3	Gross NPAs (amount in crores)					% change
	2023	2022	2021	2020	2019	
Bank of Baroda	36,763.70	54,059.40	66,670.98	69,381.43	48,232.76	(23.78)
Indian overseas bank	14,071.55	15,298.62	16,323.18	19,912.70	33,398.12	(57.87)
Punjab national bank	77,327.67	92,448.04	1,04,423.42	73,478.76	78,472.70	(0.15)
State bank of India	90,927.78	1,12,023.37	1,26,389.02	1,49,091.85	1,72,750.36	(47.36)
Union bank of India	60,987.29	79,587.07	89,788.20	49,085.30	48,729.15	25.16



<b>Public sector banks</b>	<b>2,80,077.99</b>	<b>3,53,416.50</b>	<b>4,03,594.80</b>	<b>3,60,950.04</b>	<b>3,81,583.09</b>	<b>(26.60)</b>
Axis bank limited	17,019.09	18,565.63	22,681.69	30,233.82	29,789.44	(94.28)
HDFC bank ltd.	18,019.03	16,140.96	15,086.00	12,649.97	11,224.16	60.54
ICICI bank limited	29,986.07	33,294.92	40,841.42	40,829.09	45,676.04	(377.86)
IndusInd bank ltd	5,826.27	5,517.15	5,794.99	5,146.74	3,947.41	47.59
Kotak Mahindra bank ltd.	5,768.32	6,469.74	7,425.51	5,026.89	4,467.94	29.10
<b>Private sector banks</b>	<b>76,618.79</b>	<b>79,988.41</b>	<b>91,829.61</b>	<b>93,886.51</b>	<b>95,104.99</b>	<b>(19.44)</b>

Source: RBI

Year	Net NPAs					% change
	2023	2022	2021	2020	2019	
Bank of Baroda	8,384.32	13,364.65	21,799.89	21,576.60	15,609.50	(46.29)
Indian overseas bank	3,266.01	3,824.63	4,577.59	6,602.80	14,368.30	(77.27)
Punjab National bank	22,585.04	34,908.73	38,575.70	27,218.90	30,037.66	(24.81)
State bank of India	21,466.64	27,965.71	36,809.72	51,871.30	65,894.74	(67.42)
Union bank of India	12,927.44	24,303.30	27,280.52	17,303.14	20,332.42	(36.42)
<b>Public sector banks</b>	<b>68,629.45</b>	<b>1,04,367.02</b>	<b>1,29,043.42</b>	<b>1,24,572.74</b>	<b>1,46,242.62</b>	<b>(583.79)</b>
Axis bank limited	3,439.11	4,745.30	6,584.59	9,360.41	11,275.60	(69.50)
HDFC bank ltd.	4,368.43	4,407.68	4,554.82	3,542.36	3,214.52	35.89
ICICI bank limited	5,150.07	6,931.05	9,117.66	9,923.24	13,449.72	(61.71)
IndusInd bank ltd	1,714.96	1,529.83	1,476.56	1,886.58	2,248.28	(23.72)
Kotak Mahindra bank ltd.	1,193.30	1,736.71	2,705.17	1,557.89	1,544.37	(22.73)
<b>Private sector banks</b>	<b>15,865.87</b>	<b>19,350.57</b>	<b>24,438.81</b>	<b>26,270.48</b>	<b>31,732.49</b>	<b>(50)</b>

Source: RBI

Table 3 & 4 gives the summary of gross NPA's and net NPA's for top 10 banks in India according to their market capitalization. Gross NPA is the total value of non-performing assets whereas net NPA is the value after gross NPA minus the provisions made by the banks. The percent change calculated is the difference between the amounts in 2023 with respect to the amount of 2019. From the table above, we can have observed that most of the banks NPA have declined over the 5 years except HDFC bank where there is a rise in both gross NPA as well as net NPA. It is also being observed that public sector banks have managed to control their NPA's better as compare to private sector banks.

Table 5: PSU banks ratios

BANK OF BARODA							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	62.58	79.2	1.03	15.33	6.53	16.24	0.89
2022	58.68	82.69	0.6	8.93	6.11	15.68	1.72
2021	56.9	86.88	0.07	1.11	6.37	14.99	3.09
2020	56.82	87.72	0.06	0.84	6.74	13.3	3.13
2019	51.3	86.53	0.06	0.97	7.4	13.42	3.33
INDIAN OVERSEAS BANK							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	53.99	82.71	0.76	8.7	6.08	16.1	1.83
2022	67.07	85.74	0.59	8.56	5.86	13.83	2.65



<b>2021</b>	62.96	81.75	0.31	5.02	6.53	15.32	3.58
<b>2020</b>	47.73	76.68	-2.95	-52.45	7.12	10.72	5.44
<b>2019</b>	42.64	80	-1.35	-25.23	7.26	10.21	10.81
<b>PUNJAB NATIONAL BANK</b>							
	<b>Ratio of term loan to total advances</b>	<b>ratio of secured advances to total advances</b>	<b>Return on assets</b>	<b>Return on equity</b>	<b>return on investments</b>	<b>Capital adequacy ratio</b>	<b>Ratio of net NPA to net advances</b>
<b>2023</b>	41.8	81.82	0.18	2.57	6.55	15.5	2.72
<b>2022</b>	39.04	78.87	0.26	3.71	6.14	14.5	4.8
<b>2021</b>	39.06	80.15	0.15	2.29	6.44	14.32	5.73
<b>2020</b>	33.87	77.83	0.04	0.63	6.93	14.15	5.78
<b>2019</b>	36.85	82.06	-1.25	-23.24	7.01	9.73	6.56
<b>STATE BANK OF INDIA</b>							
	<b>Ratio of term loan to total advances</b>	<b>ratio of secured advances to total advances</b>	<b>Return on assets</b>	<b>Return on equity</b>	<b>return on investments</b>	<b>Capital adequacy ratio</b>	<b>Ratio of net NPA to net advances</b>
<b>2023</b>	68.16	70.92	0.96	16.53	6.29	14.68	0.67
<b>2022</b>	67.78	72.77	0.67	11.86	5.99	13.83	1.02
<b>2021</b>	68.5	75.8	0.48	8.4	6.65	13.74	1.5
<b>2020</b>	65.91	75.95	0.38	6.4	6.77	13.06	2.23
<b>2019</b>	60.8	76.08	0.02	0.39	7.34	12.72	3.01
<b>UNION BANK OF INDIA</b>							
	<b>Ratio of term loan to total advances</b>	<b>ratio of secured advances to total advances</b>	<b>Return on assets</b>	<b>Return on equity</b>	<b>return on investments</b>	<b>Capital adequacy ratio</b>	<b>Ratio of net NPA to net advances</b>
<b>2023</b>	53.82	83.49	0.69	11.33	6.21	16.04	1.7
<b>2022</b>	55.86	82.83	0.47	7.75	5.87	14.52	3.68
<b>2021</b>	54.27	88.65	0.27	4.68	6.73	12.56	4.62
<b>2020</b>	53.75	87.31	-0.53	-9.62	7.59	12.81	5.49
<b>2019</b>	54.19	90.65	-0.59	-11.43	7.21	11.78	6.85

Source: RBI

Table 5 demonstrates various profitability ratios of public sector banks for last 5 years. It is been observed that all 5 banks return on assets have increased but in a lesser proportion whereas all PSU banks have given a very high return to their equity shareholders with SBI ranking first and those banks who were giving negative returns in the year 2019 have also started giving positive returns by the year 2023. One of the reason of such increase in return on equity can be declining in NPA of PSU banks over the past 5 years. One more thing than we can observed is that there is a decrease in return of investments for all the 5 banks. According to Basel III, the minimum capital adequacy ratio a bank should have is 10.5, from the above table it is observed that all banks have their CAR ratio above the minimum value and has been increasing over the years signifying that the PSU banks have enough cushion to absorb a reasonable amount of losses before they become insolvent.

**Table 6: private banks ratios**

<b>AXIS BANK LTD</b>							
	<b>Ratio of term loan to total advances</b>	<b>ratio of secured advances</b>	<b>Return on assets</b>	<b>Return on equity</b>	<b>return on investments</b>	<b>Capital adequacy ratio</b>	<b>Ratio of net NPA to net advances</b>



		to total advances					
2023	69.1	71.97	0.8	7.96	6.44	17.64	0.41
2022	68.36	76.08	1.21	12.02	5.83	18.54	0.67
2021	67.31	72.86	0.7	7.06	6.56	19.12	1.06
2020	69.83	72.54	0.2	2.15	6.78	17.53	1.62
2019	66.47	72.13	0.63	7.19	6.9	15.84	2.2
<b>HDFC BANK LTD</b>							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	63.9	70.03	2.07	16.96	6.44	19.26	0.27
2022	66.21	69.51	2.03	16.66	5.79	18.9	0.32
2021	64.9	70.73	1.97	16.61	5.56	18.79	0.4
2020	72.54	70.59	2.01	16.4	6.02	18.52	0.36
2019	71.41	73.03	1.9	16.5	7.47	17.11	0.39
<b>ICICI BANK LTD</b>							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	67.68	71.38	2.16	17.18	6.21	18.34	0.51
2022	67.93	73.51	1.84	14.68	5.55	19.16	0.81
2021	70.27	73.73	1.42	12.27	6.23	19.12	1.24
2020	68.97	73.79	0.81	7.05	6.42	16.11	1.54
2019	69.23	72.47	0.39	3.15	6.23	16.89	2.29
<b>INDUSIND BANK</b>							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	70.36	67.33	1.8	14.44	6.09	17.86	0.59
2022	69.41	68.07	1.28	10.13	5.76	18.42	0.64
2021	75.05	76.62	0.9	7.33	5.93	17.38	0.69
2020	73.71	75.88	1.54	14.55	7.18	15.04	0.91
2019	68.53	79.91	1.39	13.07	6.73	14.16	1.21
<b>KOTAK MAHINDRA BANK</b>							
	Ratio of term loan to total advances	ratio of secured advances to total advances	Return on assets	Return on equity	return on investments	Capital adequacy ratio	Ratio of net NPA to net advances
2023	67.4	79.26	2.47	14.03	5.82	21.8	0.64
2022	65.92	77.31	2.13	12.59	6.5	22.69	1.21
2021	71.59	77.99	1.85	12.36	7.59	22.26	1.21
2020	69.96	75.12	1.87	12.94	7.19	17.89	0.71
2019	66.98	76.11	1.69	12.11	7.18	17.45	0.75

Source: RBI



Table 6 gives details of private sector banks. The scenario of private sector banks is not as great as PSU banks in the last 5 years since the return on assets and return on equity of all the private sector banks are just increasing marginally whereas there is a decline in return on investment ratio of all the banks. The CAR ratio of all private banks is higher as compared to PSU banks since the risk is more in private sector banks and therefore they require a good amount of coverage. The ratio of net NPA to net advances have also declined marginally.

Table 7: ratios

BANK OF BARODA			AXIS BANK LTD		
	Ratio of net interest income to total assets ( Net interest margin)	Ratio of non interest income total assets		Ratio of net interest income to total assets ( Net interest margin)	Ratio of non interest income total assets
2023	3.02	0.73	2023	3.45	1.32
2022	2.68	0.94	2022	3.06	1.41
2021	2.49	1.12	2021	3.08	1.29
2020	2.45	0.92	2020	2.94	1.81
2019	2.46	0.84	2019	2.91	1.76
INDIAN OVERSEAS BANK			HDFC BANK LTD		
	Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets		Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets
2023	2.69	1.34	2023	3.83	1.38
2022	2.2	1.71	2022	3.77	1.55
2021	2.21	2.08	2021	3.96	1.54
2020	2.08	1.32	2020	4.05	1.68
2019	2.12	1.69	2019	4.18	1.53
PUNJAB NATIONAL BANK			ICICI BANK LTD		
	Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets		Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets
2023	2.48	0.87	2023	4.15	1.32
2022	2.23	0.96	2022	3.59	1.4
2021	2.43	0.95	2021	3.35	1.63
2020	2.17	1.16	2020	3.23	1.59
2019	2.23	0.96	2019	2.93	1.57
STATE BANK OF INDIA			INDUSIND BANK		
	Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets		Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets
2023	2.76	0.7	2023	4.09	1.9
2022	2.54	0.85	2022	3.92	1.92
2021	2.61	1.03	2021	4.04	1.96
2020	2.57	1.19	2020	4.12	2.38
2019	2.48	1.03	2019	3.54	2.26
UNION BANK OF INDIA			KOTAK MAHINDRA BANK		
	Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets		Ratio of net interest income to total assets ( Net interest margin)	Ratio of non-interest income total assets
2023	2.65	1.19	2023	4.69	1.54
2022	2.46	1.11	2022	4.14	1.56
2021	2.36	1.12	2021	4.13	1.47
2020	2.19	1.01	2020	4.02	1.6
2019	2.08	0.91	2019	3.88	1.61

Source: RBI



The net interest margin ratio of all selected banks are increasing except for HDFC bank where it is declining over a period of 5 years. It is also being observed that the net interest margin ratio is higher for private sector banks as compared to PSU banks signifying that the private banks generate more revenues as compared to PSU banks. The non-interest income is on a declining side for all the banks.

## 6. CONCLUSION :

NPA has always been an alarming problem for the banking system in India. The above study was thus conducted to check whether the current situation is getting better or worsening. So thus, with the above study, we would like to conclude that the PSU banks which were facing a huge problem of rising NPA's as compared to private banks are getting better by managing and declining their net NPA to net advances ratio. There is a decline in private sector banks NPA also, but the proportion of PSU banks is more as compared to private banks resulting in a rise in return on equity ratio of PSU banks. Most of the PSU banks have manage to convert their negative return on equity ratio to positive in last 5 years leading to more returns to equity shareholders which will eventually lead to more capital from them as an investment and will also lead to increase the share price of these PSU banks.

In the study, it is being observed that the HDFC bank performance is not as great as before the year 2019. It is the only bank from the selected banks in the study whose NPA are increasing rather than declining and also the only bank whose net interest margin is declining. The bank has tried to maintain their profitability ratio up to now but if such scenario continues it will eventually lead to decline in the profits and the market price for the bank leading to investors losing their interest in the bank.

Banking sector is the one which is a high leveraged sector and thus the risk assessment for the same becomes necessary. CAR ratio is the one which measures the risk assessment for the banking sector. It is being observed from the above study that all the selected banks have their CAR ratio higher than the minimum requirements as per the Basel III thus indicating that a decent provision are been maintained by these banks.

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