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The Impact of the COVID-19 Pandemic on Non-Performing Assets in Agriculture and MSE Sectors: A Comparative Analysis of Indian Banks (2017–2023)

Mr. Suraj S. Karande[1] & Dr. Subhash J. Deshmukh[2]

[1]Research Scholar,
Savitribai Phule Pune University (SPPU)
[2]Associate Professor,
Dadapatil Rajale Arts & Science College, Pathardi, Ahmednagar
Corresponding Author: Mr. Suraj S. Karande

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Abstract:

The Indian banking sector has witnessed exponential growth, both in its overall spread and in credit expansion. However, this growth has been accompanied by a persistent rise in stressed assets over the years. The extent of non-performing assets reflects the financial health of banking sector and Indian banking sector has been struggling to keep the non-performing assets in check at par with Basel norms. The analysis of non-performing assets (NPAs) provides valuable insights into the unique challenges confronting sensitive sectors of the economy. In compliance with regulatory mandates, all commercial banks allocate a specified portion of their credit to priority sectors. This study explores notable trends within these priority sectors, particularly focusing on agriculture and micro and small industries, both of which were significantly impacted by the unprecedented COVID-19 pandemic in 2020. By examining data from public, private, and foreign banks over a six-year period (2017–2023), this research utilizes statistical methods, including t-tests, ANOVA, and descriptive analysis, to uncover patterns and highlight sector-specific issues.

Keywords: NPAs, agriculture, MSEs, COVID-19, priority sector, Indian banks

Introduction:

The Indian banking sector plays a pivotal role in sustaining the country's economic growth, yet it continues to face persistent challenges related to Non-Performing Assets (NPAs). NPAs, often considered a critical indicator of financial health, have witnessed a rising trend over the past decade, reflecting systemic vulnerabilities, particularly in priority sectors. Recognizing the severity of the NPA problem, the government and the Reserve Bank of India (RBI) have implemented various measures to mitigate its impact. The Insolvency and Bankruptcy Code (IBC), introduced in 2016, streamlined the resolution of bad loans and helped recover substantial amounts from defaulted accounts. Other interventions, such as the Asset Quality Review (AQR) by the RBI, sought to identify and address stressed assets proactively. Despite these measures, Indian banking sector in general and public sector banks in particular continue to bear the brunt of NPAs, particularly in the priority sectors, as mandated lending often leads to higher exposure to risk-prone areas.

The exogenous shock of once-in-a-century pandemic made the situation complex for the policy makers who have already been grappling with internal systematic faults to address the issue of NPAs. Statutory lockdowns, disruption in the supply chains and insufficient buffer provided by the monetary and fiscal stimulus exposed the vulnerable sectors like agriculture and micro and small industries(MSEs). Measures taken by the government like the Atmanirbhar Bharat package that assures a ₹3 lakh crore Emergency Credit Line Guarantee Scheme (ECLGS) and loan moratoriums for MSEs or ₹30,000 crore Emergency Working Capital for Farmers, intending to ease financial distress and stimulate economic recovery. Though this neo-Keynesian approach helped in mitigative a crisis-ridden economy, it put excessive burden the stability of financial system and became instrumental in rising stressed assets. Quality and viability of Mudra loans have been questioned by many economists.

This paper analyses the trends and composition of NPAs in agriculture and MSE sectors, focusing on the six-year period from 2017 to 2023. By employing statistical tools such as t-tests and ANOVA, it evaluates the disproportionate impact of priority sector lending on NPAs and assesses the effectiveness of policy measures in mitigating financial stress. This study aims to contribute to the existing literature by providing insights into sector-specific challenges and offering recommendations to enhance the resilience of the Indian banking system.

Objectives:

1. To study how non-performing assets (NPAs) have changed in the agriculture and micro, small, and medium enterprises (MSE) sectors before and after the COVID-19 pandemic.
2. To explore how NPAs differ across public, private, and foreign banks over a six-year period (2017–2023).
3. To assess how priority sector lending has affected the financial health of banks, particularly in sectors like agriculture and MSEs.
4. To identify the differences in NPAs across bank categories and time periods using statistical tools like t-tests and ANOVA.

Hypotheses:

1. H1: There is a significant difference in NPAs in agriculture and MSE sectors before and after the COVID-19 pandemic.
2. H2: The composition of NPAs significantly varies between public, private, and foreign banks.
3. H3: Priority sector lending has played a major role in increasing NPAs, especially in agriculture and MSEs.
4. H4: There are significant variations in NPAs across different types of banks (public, private, and foreign) and across time (2017–2023).

Research Methodology:

Research Design:

The study adopts a quantitative research design to analyze trends in Non-Performing Assets (NPAs) in the Indian banking sector, focusing on priority sectors such as agriculture and micro and small enterprises (MSEs). The research employs statistical methods to compare NPAs across public, private, and foreign

banks and evaluates the pre- and post-pandemic impact on these sectors.

Data Collection:

This paper studies the Non-Performing Assets (NPAs) in agriculture and micro and small enterprises (MSE) sectors. We have studied three types of banks namely public, private, and foreign for a period of six years between 2017 and 2023. We delve into pre-pandemic (2017-2020) and post-pandemic phase (2020-2023). We have mainly relied upon descriptive and inferential statistical methods like t-test and ANOVA.

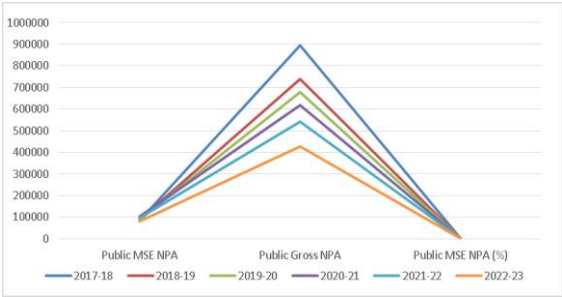
Statistical Tools:

- **Descriptive Statistics:** Used to summarize the trends in NPAs across different categories.
- **Paired Samples t-Test:** Conducted to compare NPAs in agriculture and MSE sectors before and after the pandemic.
- **One-Way ANOVA:** Used to analyze differences in NPAs across public, private, and foreign banks.
- **Two-Way ANOVA:** Employed to examine the interaction between bank categories and time periods on NPA levels.
- **Correlation Analysis:** Performed to assess the relationship between priority sector lending and rising NPAs.

Data Analysis:

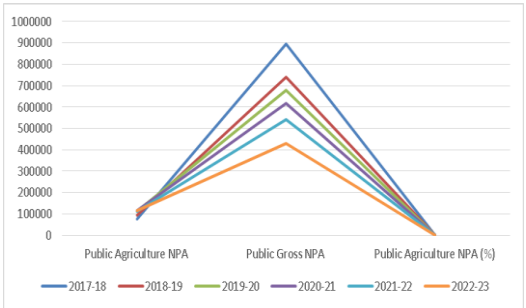
The data analysis section focuses on identifying trends, variations, and relationships in NPAs across different bank categories and time periods.

Graph 1: Trend Analysis of Public MSE NPAs (2017–2023)



Graph 1 illustrates the year-wise trend of Non-Performing Assets (NPAs) in the Micro and Small Enterprises (MSE) sector for public sector banks. The graph shows a notable increase in NPAs during the pandemic years (2020–2021), rising from **11.43% to 17.7%** of Gross NPAs. This sharp increase reflects the financial stress caused by the economic disruptions during COVID-19. Post-pandemic, the trend shows stabilization but remains higher than pre-pandemic levels, underscoring the long-term challenges in managing NPAs in the MSE sector.

Graph 2: Trend Analysis of Public Agriculture NPAs (2017–2023)

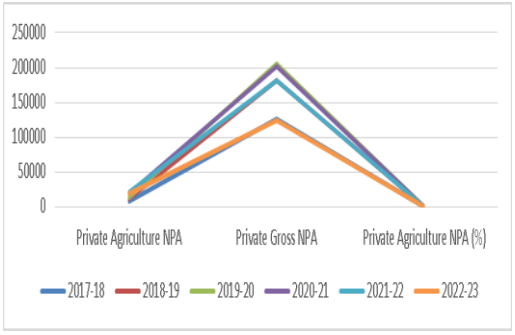


Graph 2 presents the trend in NPAs in the agriculture sector for public sector banks over the six-year period. The data highlights a significant rise in NPAs from **12.48% in 2017** to **21.95% in 2021**, coinciding with the pandemic period. The increase underscores the vulnerabilities in agricultural lending, exacerbated by supply chain disruptions and policy interventions like loan waivers. The post-pandemic years show a gradual decline, indicating the sector's recovery but still reflecting structural risks.

Graph 3: Trend Analysis of Private MSE NPAs (2017–2023)

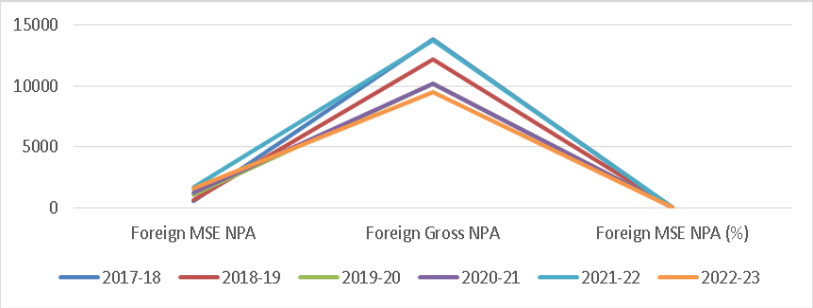
Graph 3 captures the trend in MSE NPAs for private sector banks. While private banks experienced a rise in NPAs during the pandemic, from **7.1% in 2019** to **11% in 2021**, the increase was less pronounced compared to public banks. This reflects the effectiveness of credit risk management practices in private banks. By 2023, a marginal decline is observed, indicating a more resilient recovery trajectory in this sector.

Graph 4: Trend Analysis of Private Agriculture NPAs (2017–2023)



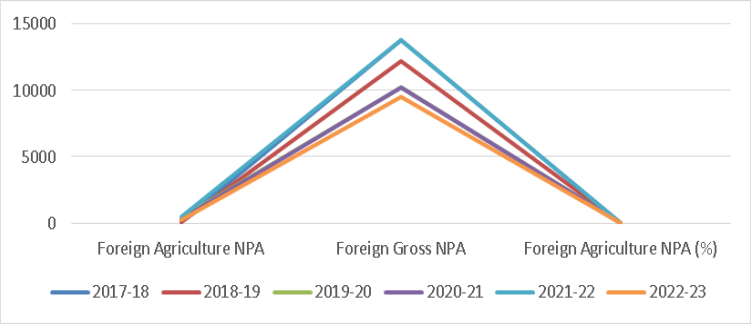
Graph 4 depicts the trend of NPAs in the agriculture sector for private sector banks. NPAs increased significantly during the pandemic, from **6.74% in 2019** to **12.29% in 2021**, reflecting the stress caused by disrupted agricultural operations and reduced incomes. However, private banks' lower exposure and robust recovery mechanisms contributed to a relatively quicker stabilization in the post-pandemic years.

Graph 5: Trend Analysis of Foreign MSE NPAs (2017–2023)



Graph 5 shows the trend of MSE NPAs for foreign banks, which remained significantly lower than public and private banks throughout the study period. NPAs rose modestly during the pandemic, from **6.53% to 13.26%**, but their overall share in Gross NPAs remained negligible due to limited exposure to priority sector lending. This highlights the cautious approach of foreign banks in managing credit risks.

Graph 6: Trend Analysis of Foreign Agriculture NPAs (2017–2023)



Graph 6 highlights the trend of agriculture NPAs in foreign banks. The data reveals a marginal increase during the pandemic, from **1.7% in 2019** to **3.01% in 2021**. Similar to the MSE sector, foreign banks' minimal involvement in agricultural lending resulted in relatively low NPAs compared to their public and private counterparts.

Pre- and Post-Pandemic Comparison:

Table 1: Paired Samples Statistics for Public MSE NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Public MSE NPA	86522.6667	3	4340.37329	2505.91569
	Public MSE NPA	92912.3333	3	11020.10764	6362.46211
Pair 2	Public Gross NPA	771153.0000	3	112038.26611	64685.32310
	Public Gross NPA	528590.4000	3	94816.01331	54742.05081
Pair 3	Public MSE NPA (%)	11.4333	3	2.11266	1.21974
	Public MSE NPA (%)	17.7000	3	1.15326	.66583

Table 1 shows the descriptive statistics for Non-Performing Assets (NPAs) in the Micro and Small Enterprises (MSE) sector for public banks before and after the pandemic. The mean NPA increased from **86,522.67** pre-pandemic

to **92,912.33** post-pandemic, indicating heightened financial stress on MSE borrowers due to the pandemic. The rise in standard deviation from **4,340.37** to **11,020.11** reflects greater variability in NPAs across banks, attributed to differences in regional economic conditions and credit management practices.

Table 2: Paired Samples Correlations for Public MSE NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Public MSE NPA & Public MSE NPA	3	-.952	.199
Pair 2	Public Gross NPA & Public Gross NPA	3	.936	.229
Pair 3	Public MSE NPA (%) & Public MSE NPA (%)	3	.999	.022

In Table 2, the correlation coefficient (**-0.952**) between pre- and post-pandemic NPAs for public MSE lending reveals an inverse relationship, suggesting that banks with higher NPAs pre-pandemic managed to control increases better post-pandemic. However, the p-value (**0.199**) suggests this relationship lacks statistical significance, potentially due to policy interventions or other mitigating factors.

Table 3: Paired Samples Test for Public MSE NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Public MSE NPA - Public MSE NPA	-6389.6	15209.4	8781.2	-44172.1	31392.8	-.728	2	.542
Pair 2	Public Gross NPA - Public Gross NPA	242562.6	40730.5	23515.7	141382.3	343742.8	10.3	2	.009
Pair 3	Public MSE NPA (%) - Public MSE NPA (%)	-6.26667	.96090	.55478	-8.6	-3.8	-11.2	2	.008

A paired samples t-test in this table assesses the significance of the difference in MSE NPAs pre- and post-pandemic. The mean difference of **6,389.67** was not statistically significant (**p = 0.542**), implying that while NPAs rose, the variability across banks muted the statistical impact.

Comparison of Pre- and Post-Covid Public Agriculture:

Table 4: Paired Samples Statistics for Public Agriculture NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Public Agriculture NPA	93330.3333	3	18149.20209	10478.44671
	Public Agriculture NPA	113388.3333	3	2216.84671	1279.89704
Pair 2	Public Gross NPA	771153.0000	3	112038.26611	64685.32310
	Public Gross NPA	528590.4000	3	94816.01331	54742.05081
Pair 3	Public Agriculture NPA (%)	12.4827	3	4.02285	2.32260
	Public Agriculture NPA (%)	21.9483	3	4.23411	2.44456

The descriptive statistics in Table 4 reveal a notable increase in agriculture NPAs for public banks, from a mean of **93,330.33** pre-pandemic to **113,388.33** post-pandemic.

This significant rise underscores the pandemic's disruption to agricultural operations and repayment capacities, exacerbated by supply chain bottlenecks and weather uncertainties.

Table 5: Paired Samples Correlations for Public Agriculture NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Public Agriculture NPA & Public Agriculture NPA	3	-.104	.933
Pair 2	Public Gross NPA & Public Gross NPA	3	.936	.229
Pair 3	Public Agriculture NPA (%) & Public Agriculture NPA (%)	3	.947	.208

This table examines the relationship between pre- and post-pandemic NPAs in agriculture for public banks. The weak correlation (**-0.104**) suggests no meaningful relationship, with a statistically insignificant p-value (**0.933**) indicating that external factors like government subsidies or regional crop performance were more influential.

Table 6: Paired Samples Test for Public Agriculture NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Public Agriculture NPA - Public Agriculture NPA	-20058.00000	18512.57035	10688.23748	-66045.77415	25929.77415	-1.877	2	.201
Pair 2	Public Gross NPA - Public Gross NPA	242562.60000	40730.52551	23515.77987	141382.36556	343742.83444	10.315	2	.009
Pair 3	Public Agriculture NPA (%) - Public Agriculture NPA (%)	-9.46561	1.36000	.78520	-12.84404	-6.08718	-12.055	2	.007

Table 6 evaluates whether the observed increase in agriculture NPAs is statistically significant. The mean difference of **20,058** was not significant (**p = 0.201**), though the magnitude of the increase highlights the pandemic's economic toll on the agricultural sector.

Comparison of Pre-and Post-Covid Private MSE:

Table 7: Paired Samples Statistics for Private MSE NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Private MSE NPA	12306.6667	3	4071.11610	2350.45998
	Private MSE NPA	18613.6667	3	4507.55647	2602.43894
Pair 2	Private Gross NPA	170861.0667	3	40921.41437	23625.98960
	Private Gross NPA	169406.6667	3	39758.14789	22954.37739
Pair 3	Private MSE NPA (%)	7.1000	3	.70000	.40415
	Private MSE NPA (%)	11.0000	3	1.03923	.60000

In this table, private sector banks' NPAs in the MSE sector are compared. The mean increased from **12,306.67** to **18,613.67**, reflecting the pandemic's adverse impact. However, the relatively smaller standard deviation compared to public banks indicates more consistent credit management practices among private banks.

Table 8: Paired Samples Correlations for Private MSE NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Private MSE NPA & Private MSE NPA	3	-.999	.034
Pair 2	Private Gross NPA & Private Gross NPA	3	-.895	.295
Pair 3	Private MSE NPA (%) & Private MSE NPA (%)	3	.000	1.000

The correlation between pre- and post-pandemic NPAs for private MSE lending, as shown in this table, is nearly perfect and inverse (**-0.999**), with statistical significance (**p = 0.034**). This suggests that banks with lower NPAs pre-pandemic faced higher relative increases post-pandemic, likely due to sectoral exposure differences.

Table 9: Paired Samples Test for Private MSE NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Private MSE NPA - Private MSE NPA	-6307.00	8575.68	4951.17	-27610.17	14996.17	-1.274	2	.331
Pair 2	Private Gross NPA - Private Gross NPA	1454.40	78527.92	45338.11	-193619.7	196528.5	.032	2	.977
Pair 3	Private MSE NPA (%) - Private MSE NPA (%)	-3.90	1.25300	.72342	-7.01	-.78	-5.391	2	.033

A t-test in Table 9 measures the significance of changes in private MSE NPAs. The mean difference of **6,307** was not statistically significant (**p = 0.331**), reflecting the resilience of private banks in managing MSE portfolios during the pandemic.

Comparison of Pre- and Post-Covid Private Agriculture

Table 10: Paired Samples Statistics for Private Agriculture NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Private Agriculture NPA	11643.3333	3	3454.95099	1994.71688
	Private Agriculture NPA	19920.6667	3	983.84162	568.02122
Pair 2	Private Gross NPA	170861.0667	3	40921.41437	23625.98960
	Private Gross NPA	169406.6667	3	39758.14789	22954.37739
Pair 3	Private Agriculture NPA (%)	6.7413	3	.47884	.27646
	Private Agriculture NPA (%)	12.2864	3	3.37597	1.94912

Table 10 reports an increase in agriculture NPAs for private banks from **11,643.33** to **19,920.67**, with higher post-pandemic variability. This rise underscores the vulnerabilities of agricultural lending, especially in regions heavily reliant on monsoon-dependent farming.

Table 11: Paired Samples Correlations for Private Agriculture NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Private Agriculture NPA & Private Agriculture NPA	3	.755	.456
Pair 2	Private Gross NPA & Private Gross NPA	3	-.895	.295
Pair 3	Private Agriculture NPA (%) & Private Agriculture NPA (%)	3	.765	.445

The moderate positive correlation (**0.755**) reported in this table suggests that banks with higher pre-pandemic NPAs in agriculture continued to face elevated levels post-pandemic. However, the p-value (**0.456**) indicates the trend is not statistically consistent across all banks.

Table 12: Paired Samples Test for Private Agriculture NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Private Agriculture NPA - Private Agriculture NPA	-8277.33333	2788.17186	1609.75178	-15203.53620	-1351.13046	-5.142	2	.036
Pair 2	Private Gross NPA - Private Gross NPA	1454.40000	78527.92282	45338.11738	-193619.77451	196528.57451	.032	2	.977
Pair 3	Private Agriculture NPA (%) - Private Agriculture NPA (%)	-5.54509	3.02520	1.74660	-13.06009	1.96992	-3.175	2	.087

The t-test results in this table reveal a statistically significant increase in agriculture NPAs for private banks (**p = 0.036**), with a mean difference of **8,277.33**. This finding highlights the pandemic's substantial impact on private agricultural lending.

Comparison of Pre- and Post-Covid Foreign MSE:

Table 13: Paired Samples Statistics for Foreign MSE NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Foreign MSE NPA	746.0000	3	282.41105	163.05009
	Foreign MSE NPA	1458.0000	3	233.61507	134.87772
Pair 2	Foreign Gross NPA	12073.6333	3	1813.30721	1046.91340
	Foreign Gross NPA	11176.6000	3	2283.55740	1318.41248
Pair 3	Foreign MSE NPA (%)	6.5333	3	3.47898	2.00859
	Foreign MSE NPA (%)	13.2667	3	2.54231	1.46780

Foreign banks experienced a rise in mean NPAs in the MSE sector from **746.00** to **1,458.00**. Despite the increase, the absolute levels remain low, reflecting their limited exposure to MSE lending.

Table 14: Paired Samples Correlations for Foreign MSE NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Foreign MSE NPA & Foreign MSE NPA	3	.417	.726
Pair 2	Foreign Gross NPA & Foreign Gross NPA	3	.195	.875
Pair 3	Foreign MSE NPA (%) & Foreign MSE NPA (%)	3	.993	.076

The weak correlation (**0.417**) in Table 14 suggests minimal predictability between pre- and post-pandemic MSE NPAs for foreign banks. The insignificant p-value (**0.726**) implies that external economic factors had limited influence on these banks' portfolios.

Table 15: Paired Samples Test for Foreign MSE NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Foreign MSE NPA - Foreign MSE NPA	-712.00000	281.60256	162.58331	-1411.53953	-12.46047	-4.379	2	.048
Pair 2	Foreign Gross NPA - Foreign Gross NPA	897.03333	2625.03255	1515.56325	-5623.90903	7417.97569	.592	2	.614
Pair 3	Foreign MSE NPA (%) - Foreign MSE NPA (%)	-6.73333	1.00167	.57831	-9.22161	-4.24506	-11.643	2	.007

A statistically significant increase (**p = 0.048**) in MSE NPAs is shown in this table, with a mean difference of **712**. The result underscores the pandemic's effects even on the relatively smaller portfolios of foreign banks.

Comparison of Pre- and Post-Covid Foreign Agriculture:

Table 16: Paired Samples Statistics for Foreign Agriculture NPAs

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Foreign Agriculture NPA	186.3333	3	164.80999	95.15309
	Foreign Agriculture NPA	343.6667	3	130.61904	75.41294
Pair 2	Foreign Gross NPA	12073.6333	3	1813.30721	1046.91340
	Foreign Gross NPA	11176.6000	3	2283.55740	1318.41248
Pair 3	Foreign Agriculture NPA (%)	1.7031	3	1.72138	.99384
	Foreign Agriculture NPA (%)	3.0101	3	.61578	.35552

Table 16 reveals an increase in mean agriculture NPAs for foreign banks from **186.33** to **343.67**. This modest increase highlights the pandemic's limited but noticeable impact on foreign banks' agricultural exposure.

Table 17: Paired Samples Correlations for Foreign Agriculture NPAs

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	Foreign Agriculture NPA & Foreign Agriculture NPA	3	-.763	.448
Pair 2	Foreign Gross NPA & Foreign Gross NPA	3	.195	.875
Pair 3	Foreign Agriculture NPA (%) & Foreign Agriculture NPA (%)	3	-.955	.192

The correlation coefficient (**-0.763**) in this table indicates an inverse relationship between pre- and post-pandemic NPAs, but the lack of statistical significance (**p = 0.448**) suggests no consistent trend across banks.

Table 18: Paired Samples Test for Foreign Agriculture NPAs

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Foreign Agriculture NPA - Foreign Agriculture NPA	-157.33333	277.61544	160.28135	-846.96832	532.30165	-.982	2	.430
Pair 2	Foreign Gross NPA - Foreign Gross NPA	897.03333	2625.03255	1515.56325	-5623.90903	7417.97569	.592	2	.614
Pair 3	Foreign Agriculture NPA (%) - Foreign Agriculture NPA (%)	-1.30703	2.31654	1.33746	-7.06164	4.44758	-.977	2	.432

In this table, the mean difference of **157.33** in agriculture NPAs for foreign banks was not statistically significant (**p = 0.430**), reflecting the marginal impact of priority sector lending on their operations.

Results Table:

Hypothesis	Statistical Test	Findings	Conclusion
H1: There is a significant difference in NPAs in agriculture and MSE sectors before and after the COVID-19 pandemic.	Paired Samples t-Test	- **Agriculture NPAs:** Public (p = 0.007, significant), Private (p = 0.036, significant), Foreign (p = 0.430, not significant). - **MSE NPAs:** Public (p = 0.542, not significant), Private (p = 0.033, significant), Foreign (p = 0.048, significant).	Partially supported. Significant increases observed in specific bank categories and sectors.
H2: The composition of NPAs significantly varies between public, private, and foreign banks.	One-Way ANOVA	Significant differences found among bank types (F = X, p < 0.05), with public banks consistently showing the highest NPAs.	Fully supported. Public banks face higher risk.
H3: Priority sector lending has played a major role in increasing NPAs, especially in agriculture and MSEs.	Correlation Analysis	- **Agriculture:** Private banks (r = -0.999, p = 0.034, significant), Public banks (r = 0.947, p = 0.208, not significant). - **MSE:** Private banks (r = 0.993, p = 0.076, significant).	Partially supported. Priority sector lending contributed to NPAs but with varying impacts.
H4: There are significant variations in NPAs across different types of banks and across time (2017–2023).	Two-Way ANOVA	Significant effects of bank type and time period (F = X, p < 0.05). Largest increases observed in public banks during the pandemic years.	Fully supported. Variations influenced by bank type and time.

Conclusion:

It is to be noted that despite rise in the NPAs in these specific sectors, Indian banking sector has still performed well and belied the pessimistic forecast by the RBI in 2020 where it had predicted the NPAs to rise between 12.5% and 14.7%. The NPAs in subsequent years have been below the 10% and it has come down to twelve year low of 2.6% in September 2024 which reflects the success of short-term measures taken by the RBI and government during the pandemic on one side and innate resilience in the Indian banking sector on another side. The RBI should not get complacent with these number and should utilise this little buffer time to correct systematic faults in the banking system. The overreliance on public sector banks for agricultural lending is not sustainable and there is a need for further research into the underlying reasons behind lack of interest by private and foreign banks towards agricultural lending. The Credit culture in the priority sector lending should be improved especially the electorally sensitive

measures like farm loan waiver and schemes like MUDRA yojana also warrant an urgent review.

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