

An Analysis of Non-Performing Assets in Priority and Non-Priority Sectors of Scheduled Commercial Banks in Nagaland (FY 2020-21 to FY 2025-26)

Chuthuni Chuphokhomai¹, Prof. PK Deka²

¹Research Scholar, Department of commerce, Nagaland University Kohima, Nagaland.

²Professor, Department of commerce, Nagaland University Kohima, Nagaland.

Abstract

Non-Performing Assets (NPAs) remain one of the most persistent threats to the stability and profitability of the Indian banking system, and their sectoral distribution offers valuable insight into the nature of credit risk confronting banks operating in smaller, less industrialised states such as Nagaland. This study undertakes a bank-wise and year-wise examination of NPAs across the agricultural priority sector, the Micro, Small and Medium Enterprises (MSME) sector, other priority sector categories, and the non-priority sector for twelve public sector and ten private sector scheduled commercial banks operating in Nagaland over the six-year period FY 2020-21 to FY 2025-26, using secondary data compiled by the State Level Bankers' Committee (SLBC), Nagaland. Employing ratio analysis, trend analysis, and comparative cross-sectional techniques, the study computes the average NPA amount per account in order to standardise loan severity across banks of differing size. The findings indicate that public sector banks have achieved a marked decline in agricultural NPAs, while private sector banks display fewer but more volatile and higher-value defaults, particularly in the MSME and non-priority segments. The study concludes that credit risk in Nagaland is increasingly concentrated in a small number of high-value accounts rather than being systemic in nature, carrying important implications for targeted, sector-specific policy interventions by regulators and bank management.

Keywords: Non-Performing Assets, Priority Sector, Non-Priority Sector, Scheduled Commercial Banks, Nagaland, Credit Risk, SLBC

Introduction

The banking sector forms the backbone of any modern economy, functioning as the principal intermediary between savers and borrowers and thereby channelling funds from surplus units to deficit units in a manner that fuels economic growth, capital formation, and employment generation. The efficiency and stability of this intermediation function, however, depend critically on the quality of the assets that banks carry on their balance sheets, particularly the loans and advances extended to borrowers across the various sectors of the economy. When a borrower fails to honour repayment obligations, the loan extended to that borrower ceases to generate the income expected by the bank, and it is transformed from a performing asset into a non-performing one. This phenomenon, widely referred to as a Non-Performing Asset (NPA),

has remained one of the most persistent and pressing challenges confronting the Indian banking system for over three decades, carrying far-reaching implications for bank profitability, capital adequacy, credit expansion, and overall financial stability.

According to the Reserve Bank of India (RBI), the apex regulatory authority governing the Indian banking system, an NPA is formally defined as any loan or advance for which payment of the principal or interest remains overdue for a period exceeding ninety days. This definition, though seemingly straightforward, encapsulates a far deeper reality: once a loan account is classified as an NPA, the credit risk assumed by the bank at the time of sanctioning the loan has materialised into an actual default, and the expected future cash flows that justified the creation of the asset are no longer forthcoming as scheduled. The formal recognition and standardised classification of NPAs in India is itself a relatively recent regulatory development, tracing its origins to the financial sector reforms initiated in the early 1990s on the recommendations of the Committee on the Financial System. Prior to these reforms, banks followed a largely subjective system of income recognition that permitted the reporting of interest income even on doubtful loans, masking the true extent of asset quality deterioration. The subsequent phased introduction of prudential norms, culminating in the ninety-day overdue classification standard applicable from the financial year ended March 2004, brought Indian banking practice closer in line with international standards of transparency.

A distinguishing feature of the Indian banking system, and one that is central to the present study, is the mandatory Priority Sector Lending (PSL) framework, under which scheduled commercial banks are required to allocate a specified proportion of adjusted net bank credit to sectors considered critical for inclusive economic development, namely agriculture, Micro, Small and Medium Enterprises (MSME), export credit, education, housing, and social infrastructure, among other designated categories. While this policy has played an instrumental role in extending credit to historically underserved segments of the economy, it has also exposed banks to categories of credit risk that differ meaningfully from those associated with non-priority or commercial lending. Agricultural lending, for instance, carries vulnerabilities linked to monsoon variability, crop failure, and the seasonal nature of farm income, whereas non-priority sector exposures, though fewer in number, often involve substantially larger loan amounts such that a small number of large-value defaults can have an outsized impact on aggregate NPA figures.

It is against this backdrop that the present study undertakes a detailed, bank-wise and year-wise analysis of NPAs across the agricultural priority sector, the MSME sector, other priority sector categories, and the non-priority sector for scheduled commercial banks operating within the state of Nagaland. Nagaland presents a particularly instructive case for such an analysis: as a smaller, less industrialised state economy, its banking sector's exposure profile, borrower base, and recovery mechanisms differ meaningfully from those observed in larger, more diversified state economies, and even a handful of large-value defaults can disproportionately influence aggregate financial health indicators. By moving beyond the absolute magnitude of NPA accounts and amounts to derive the average NPA amount per account for each bank and sector, this study seeks to offer a more granulated understanding of the severity, concentration, and evolving nature of credit risk within the state's banking ecosystem, with the ultimate aim of informing more targeted, sector-specific credit risk management strategies and evidence-based policy formulation.

Significance of the Study

The significance of this study lies in its focus on a small, geographically peripheral, and less industrialised state economy whose banking sector dynamics are rarely examined in the mainstream literature on Indian

NPAs, which tends to concentrate on aggregate national trends or on larger, more diversified states. In an economy such as Nagaland's, where the borrower base is narrower and credit exposure is comparatively modest in absolute terms, a handful of large-value defaults can disproportionately distort standard NPA indicators, making disaggregated, bank-wise and sector-wise analysis particularly valuable for accurate diagnosis. By separating priority sector lending into its agricultural, MSME, and other components and contrasting these with non-priority sector exposures, and by introducing the average NPA amount per account as a standardising measure, the study offers regulators, bank management, and policymakers a more nuanced diagnostic tool than aggregate NPA ratios alone can provide. The findings are expected to assist the State Level Bankers' Committee, the Reserve Bank of India's regional office, and individual banks operating in Nagaland in designing more targeted recovery strategies, differentiating between systemic sectoral stress and isolated large-ticket defaults, and thereby strengthening the overall resilience and credit discipline of the state's banking ecosystem.

Statement of the Problem

Non-Performing Assets continue to erode the profitability, capital adequacy, and lending capacity of scheduled commercial banks across India, and while extensive research exists on the aggregate, national-level trends in NPAs and on their determinants in large, well-diversified banking markets, comparatively little attention has been paid to how these dynamics play out in smaller, less industrialised state economies such as Nagaland, where the structure of credit exposure, the composition of the borrower base, and the availability of recovery mechanisms differ substantially from national averages. Aggregate NPA figures, whether reported as gross NPA ratios or as simple totals of accounts and amounts, tend to obscure important underlying distinctions: they do not reveal whether a rise in the NPA amount reflects a broad-based deterioration in credit quality across many small borrowers or is instead driven by one or two isolated large-ticket defaults, nor do they permit meaningful comparison of loan severity across banks of vastly different sizes and portfolio compositions. Furthermore, within Nagaland's banking ecosystem, priority sector lending obligations mean that public and private sector banks are exposed to structurally different categories of risk across agriculture, MSME, and other priority sector lending as compared to non-priority sector commercial lending, yet the divergent trajectories of these categories, and the extent to which public and private banks differ in their exposure and recovery performance, remain inadequately documented for the state. Compounding this problem, the secondary data compiled at the state level frequently contains computational and reporting inconsistencies, including undefined ratios arising from zero-account years and improperly weighted aggregate totals, which, if left uncorrected, risk producing misleading interpretations of the true state of asset quality. It is this gap, both empirical and methodological, that the present study seeks to address by undertaking a systematic, bank-wise and year-wise, sector-disaggregated analysis of NPAs in Nagaland over a six-year period, with a particular emphasis on standardising loan severity through the average NPA amount per account and on distinguishing genuine sectoral stress from isolated outlier-driven distortions.

Review of Literature

Narasimham (1998). In the Report of the Committee on Banking Sector Reforms, Narasimham (1998) identified the subjective and inconsistent income recognition practices then prevalent among Indian banks as a significant structural weakness, one that allowed banks to report interest income on accrual even on loans where recovery was doubtful. The committee's recommendation to adopt international best practices

in income recognition, asset classification, and provisioning initiated the prudential norms that continue to govern NPA classification in India today.

Rajaraman and Vasishtha (2002). Using panel data on public sector banks, Rajaraman and Vasishtha (2002) examined the macroeconomic and operational determinants of non-performing loans and found that variables relating to the operational efficiency of individual banks, alongside broader macroeconomic conditions, exerted a significant influence on NPA levels. Their study is frequently cited as early evidence that a small number of large borrower defaults, rather than widespread small-ticket failures, can materially affect aggregate NPA figures in the Indian public banking sector.

Mohan (2004). Mohan (2004) traced the trajectory of financial sector reforms in India and documented how the phased introduction of prudential norms, culminating in the ninety-day overdue classification standard, was designed to align Indian banking practice with international standards while balancing the developmental objectives of priority sector lending. The study highlighted the tension between financial inclusion goals and the maintenance of asset quality that continues to characterise Indian banking policy.

Ghosh (2005). Ghosh (2005) investigated the relationship between bank leverage and non-performing loans in the Indian context and found that higher leverage was associated with greater risk-taking behaviour and, consequently, elevated levels of non-performing assets. The findings underscore the importance of capital adequacy and prudent leverage management as preconditions for sound asset quality.

Chakrabarty (2013). Writing on behalf of the Reserve Bank of India, Chakrabarty (2013) reviewed successive revisions to the prudential norms on income recognition, asset classification, and provisioning, noting that periodic tightening of these norms, while improving transparency, also had the short-term effect of increasing reported NPA levels as previously masked stress was brought into the open.

Basel Committee on Banking Supervision (2017). The Basel Committee on Banking Supervision (2017) issued international guidance on the prudential treatment of problem assets, harmonising definitions of non-performing exposures and forbearance across jurisdictions. This guidance has informed subsequent refinements to Indian NPA classification norms and provides the conceptual basis for treating asset quality as a continuum rather than a binary performing or non-performing state.

Rajan (2016). Rajan (2016), in a Reserve Bank of India bulletin, discussed the challenges of resolving stressed assets in the Indian banking system, arguing that time-bound resolution mechanisms were essential to prevent the build-up of large corporate NPAs. His analysis anticipated many of the resolution mechanisms subsequently introduced under the Insolvency and Bankruptcy Code.

Indian Banks' Association (2022). The Indian Banks' Association (2022) compiled a best-practices manual on NPA recovery, documenting mechanisms such as SARFAESI proceedings, Lok Adalats, and debt recovery tribunals. The manual emphasised that recovery strategies must be tailored to the size and sector of the defaulting account, with large corporate exposures requiring different resolution approaches compared to small-ticket priority sector loans.

National Bank for Agriculture and Rural Development (2022, 2023). NABARD's status reports on microfinance and agricultural credit (2022, 2023) documented the structural vulnerabilities of agricultural lending in India, including exposure to monsoon variability, crop failure, and price volatility, all of which contribute to default patterns in priority sector agricultural lending that differ meaningfully from commercial lending defaults.

Reserve Bank of India, Report on Trend and Progress of Banking in India (2021, 2024). The Reserve Bank of India's annual Report on Trend and Progress of Banking in India (2021, 2024) has consistently tracked sector-wise and bank-group-wise NPA trends at the national level, providing the benchmark data against

which state-level and bank-wise studies, including the present one, can be contextualised. These reports confirm the broader national pattern of declining priority sector NPAs alongside episodic spikes in large corporate and non-priority sector exposures.

Taken together, the reviewed literature establishes three recurring themes that directly inform the present study: first, that regulatory tightening of income recognition and asset classification norms has progressively improved transparency but also revealed previously hidden stress; second, that priority sector and non-priority sector lending are exposed to structurally different categories of risk, with the former driven by sectoral and seasonal vulnerabilities and the latter often driven by a small number of large-value defaults; and third, that standardised, disaggregated measures of loan severity, such as the average NPA amount per account, are needed to draw meaningful comparisons across banks of different sizes, a gap that this study addresses specifically for the state of Nagaland.

Objectives of the Study

1. To analyse the bank-wise and year-wise trends in the number of NPA accounts and the amount of NPAs across the agricultural priority sector, the MSME sector, other priority sector categories, and the non-priority sector for public and private scheduled commercial banks operating in Nagaland during FY 2020-21 to FY 2025-26.
2. To compute and compare the average NPA amount per account across banks, sectors, and years in order to assess the severity and concentration of credit risk in a manner that is comparable across banks of different sizes.
3. To examine the differences in NPA behaviour between public sector and private sector banks and to distinguish genuine sector-wide stress from isolated, large-ticket outlier defaults.

Research Methodology

Research Design: The study adopts a descriptive and analytical research design based entirely on secondary data, aimed at examining trends and comparative patterns in NPAs rather than establishing causal relationships.

Data Source and Period: The analysis draws on secondary data compiled by the State Level Bankers' Committee (SLBC), Nagaland, covering six financial years from FY 2020-21 to FY 2025-26.

Sample: The sample comprises twelve public sector scheduled commercial banks and ten private sector scheduled commercial banks operating within the state of Nagaland, covering agricultural priority sector, MSME priority sector, other priority sector, and non-priority sector lending categories.

Tools and Techniques of Analysis: The core analytical technique employed is ratio analysis, specifically the computation of the Average NPA Amount Per Account, calculated as the Total NPA Amount divided by the Total Number of NPA Accounts for each bank, category, and year, which converts raw absolute figures into a standardised measure of loan severity permitting meaningful comparison across banks of different sizes. A year-on-year trend analysis technique was used to track how account numbers and amounts changed over time in order to identify improving, deteriorating, or volatile patterns, while a comparative cross-sectional technique was applied to contrast public sector bank performance against private sector bank performance within each lending category. A key methodological correction distinguished between a weighted average, appropriate for computing aggregate sector totals, and a simple average of individual bank ratios, since using the latter for totals distorts results by giving equal weight to large banks, such as the State Bank of India, and near-zero-account banks. An outlier identification

technique was additionally used to flag extreme values and interpret them as isolated large-ticket defaults rather than systemic deterioration, and a data validation and verification technique involving manual cross-checking of totals and identification of undefined ratios arising from zero-account years was applied to ensure accuracy before drawing interpretations.

Limitations: As the study relies entirely on secondary data compiled at the state level, its findings are subject to any reporting or classification inconsistencies present in the source data, and the relatively small size of Nagaland's banking sector means that individual large-value accounts can exert a disproportionate influence on aggregate and average figures.

Analysis and Interpretation

This section presents the trend analysis and statistical testing of hypotheses corresponding to each of the three objectives of the study. Because the underlying NPA data are drawn from a small number of banks (twelve public and ten private sector banks), contain a large proportion of zero-value years for several private banks, and are strongly right-skewed by a handful of extreme, large-ticket defaults (for example, the State Bank of India's non-priority sector spike in FY 2023-24 and HDFC's agricultural NPA average in FY 2024-25 and FY 2025-26), the data violate the normality and homogeneity-of-variance assumptions required for parametric tests such as the t-test, one-way ANOVA, or Pearson correlation. Distribution-free, rank-based non-parametric tests were therefore judged to be the statistical techniques best suited to this study: the Mann-Kendall trend test for detecting monotonic trends in small time series, the Mann-Whitney U test for comparing two independent, non-normally distributed groups, and the Kruskal-Wallis H test for comparing more than two independent groups. All tests were conducted at the 5 per cent (0.05) level of significance.

Objective 1: Trend Analysis of NPA Accounts and Amounts (Mann-Kendall Trend Test)

Variables: The independent variable is Time, measured as the financial year over six discrete periods from FY 2020-21 to FY 2025-26. The dependent variables are the Number of NPA Accounts and the NPA Amount (₹ lakhs), examined separately for public sector bank totals and private sector bank totals within each of the four lending categories — Agriculture, MSME, Other Priority Sector, and Non-Priority Sector. Null Hypothesis (H0): There is no statistically significant monotonic trend (upward or downward) in the number of NPA accounts / NPA amount over FY 2020-21 to FY 2025-26 for public and private sector banks in each lending category.

Alternative Hypothesis (H1): There is a statistically significant monotonic trend (upward or downward) in the number of NPA accounts / NPA amount over the study period for public and/or private sector banks in each lending category.

Descriptive Trend Data: Table 1 summarises the Total number of NPA accounts and the Total NPA amount for public and private sector banks across the four lending categories for each of the six years under study. Table: Agriculture (Priority Sector) — Total NPA Accounts and Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

Table: Agriculture (Priority Sector) — Total NPA Accounts and Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

FY	Public NPA A/c	Public NPA Amt (₹ lakhs)	Private NPA A/c	Private NPA Amt (₹ lakhs)
2020-21	7,240	4,619.28	155	53.57

2021-22	6,567	4,157.80	190	77.25
2022-23	5,918	3,809.65	181	80.41
2023-24	4,972	2,868.63	239	93.39
2024-25	3,758	2,663.11	139	176.13
2025-26	3,436	2,368.12	92	140.77

Table: MSME (Priority Sector) — Total NPA Accounts and Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

FY	Public NPA A/c	Public NPA Amt (₹ lakhs)	Private NPA A/c	Private NPA Amt (₹ lakhs)
2020-21	3,460	13,060.52	2,877	1,161.16
2021-22	4,384	11,598.00	96	782.50
2022-23	2,738	12,571.48	70	549.53
2023-24	3,466	11,950.40	1,425	1,090.17
2024-25	3,989	10,414.44	567	1,310.86
2025-26	3,543	10,591.84	334	1,064.74

Table: Other Priority Sector — Total NPA Accounts and Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

FY	Public NPA A/c	Public NPA Amt (₹ lakhs)	Private NPA A/c	Private NPA Amt (₹ lakhs)
2020-21	208	661.59	43	48.72
2021-22	139	581.75	836	443.06
2022-23	101	299.92	1,190	561.84
2023-24	144	471.89	1,255	333.39
2024-25	74	159.22	173	110.91
2025-26	99	293.15	50	33.83

Table: Non-Priority Sector — Total NPA Accounts and Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

FY	Public NPA A/c	Public NPA Amt (₹ lakhs)	Private NPA A/c	Private NPA Amt (₹ lakhs)
2020-21	380	935.18	213	669.16
2021-22	2,119	5,987.19	622	781.91
2022-23	2,730	4,656.36	912	1,486.67
2023-24	2,998	14,701.73	1,389	1,822.42
2024-25	2,156	4,041.39	2,672	2,967.52
2025-26	3,163	4,454.68	1,511	2,754.25

Figure 1 plots the trend in the number of NPA accounts, and Figure 2 the trend in the NPA amount, for public and private sector banks across the four lending categories.

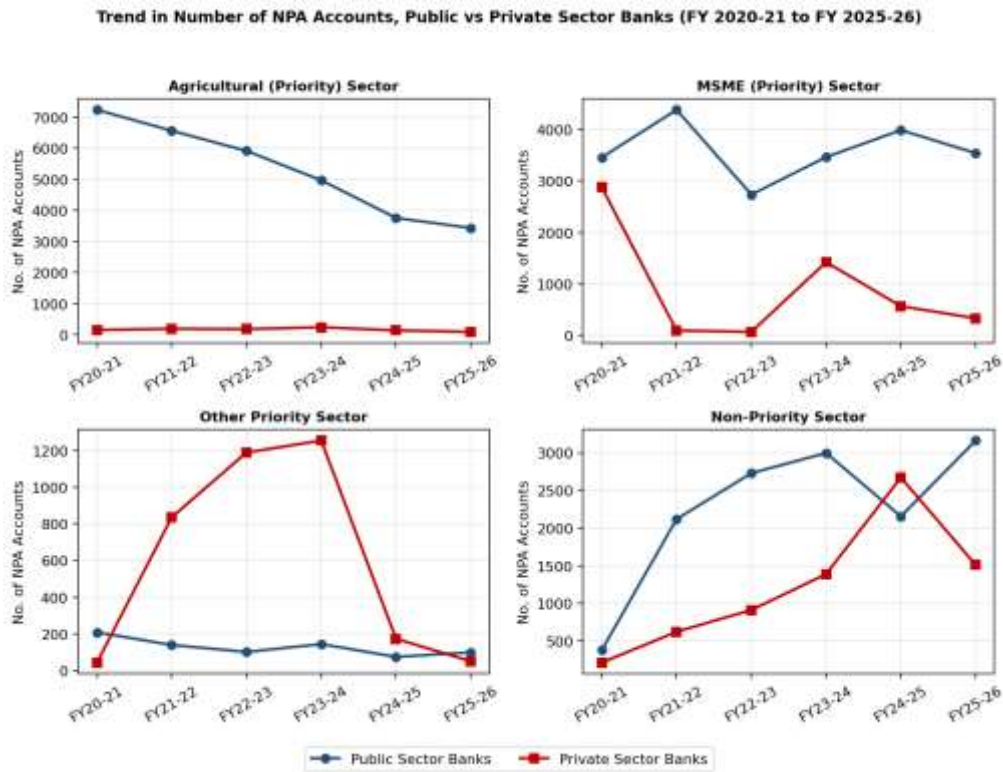


Figure 1: Trend in Number of NPA Accounts, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

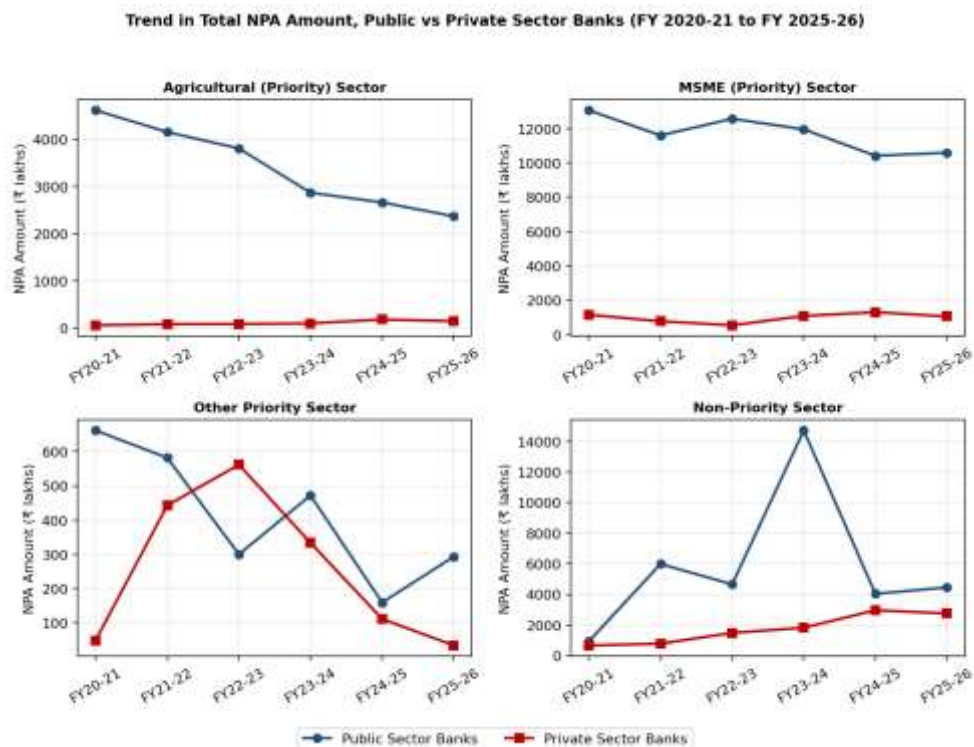


Figure 2: Trend in Total NPA Amount, Public vs Private Sector Banks (FY 2020-21 to FY 2025-26)

Table 2: Mann-Kendall Trend Test Results for NPA Accounts and Amounts, Public vs Private Sector Banks, by Lending Category (FY 2020-21 to FY 2025-26)

Sector	Bank Group	Series	Kendall's τ	Z	p-value	Direction	Decision ($\alpha=0.05$)
Agriculture (Priority Sector)	Public	No. of A/c	-1.0	-2.63	0.0085	Decreasing	Reject H0
Agriculture (Priority Sector)	Public	Amount	-1.0	-2.63	0.0085	Decreasing	Reject H0
Agriculture (Priority Sector)	Private	No. of A/c	-0.333	-0.751	0.4524	Decreasing	Accept H0
Agriculture (Priority Sector)	Private	Amount	0.867	2.254	0.0242	Increasing	Reject H0
MSME (Priority Sector)	Public	No. of A/c	0.2	0.376	0.7071	Increasing	Accept H0
MSME (Priority Sector)	Public	Amount	-0.6	-1.503	0.1329	Decreasing	Accept H0
MSME (Priority Sector)	Private	No. of A/c	-0.2	-0.376	0.7071	Decreasing	Accept H0
MSME (Priority Sector)	Private	Amount	0.067	0.0	1.0	Increasing	Accept H0
Other Priority Sector	Public	No. of A/c	-0.6	-1.503	0.1329	Decreasing	Accept H0
Other Priority Sector	Public	Amount	-0.733	-1.879	0.0603	Decreasing	Accept H0
Other Priority Sector	Private	No. of A/c	0.067	0.0	1.0	Increasing	Accept H0
Other Priority Sector	Private	Amount	-0.333	-0.751	0.4524	Decreasing	Accept H0
Non-Priority Sector	Public	No. of A/c	0.733	1.879	0.0603	Increasing	Accept H0
Non-Priority Sector	Public	Amount	0.067	0.0	1.0	Increasing	Accept H0
Non-Priority Sector	Private	No. of A/c	0.867	2.254	0.0242	Increasing	Reject H0

Non-Priority Sector	Private	Amount	0.867	2.254	0.0242	Increasing	Reject H0
---------------------	---------	--------	-------	-------	--------	------------	-----------

Interpretation: The Mann-Kendall test results in Table 2 show a mixed but clearly patterned picture. For public sector banks, the agricultural priority sector shows a statistically significant, monotonically decreasing trend in both the number of NPA accounts ($\tau = -1.00$, $p = 0.0085$) and the NPA amount ($\tau = -1.00$, $p = 0.0085$); the null hypothesis of no trend is therefore rejected for this series, confirming a genuine, structural improvement in public sector agricultural asset quality over the study period rather than a random year-to-year fluctuation. For private sector banks, the agricultural NPA amount shows a statistically significant increasing trend ($\tau = 0.87$, $p = 0.0242$), so H_0 is rejected here as well, indicating a genuine worsening of loan severity even as account numbers fell. In the non-priority sector, both public sector accounts (marginal, $p = 0.0603$) and private sector accounts and amounts ($\tau = 0.87$, $p = 0.0242$ in both cases) show rising trends, with the private sector trend reaching statistical significance; H_0 is rejected for private sector non-priority accounts and amounts, confirming a genuine upward trend in non-priority sector stress rather than noise. For all remaining series — MSME accounts and amounts for both bank groups, other priority sector accounts and amounts for both bank groups, and public sector non-priority amounts — the p-value exceeds 0.05, and the null hypothesis of no significant trend is accepted; the year-to-year movements observed in these series (such as the sharp rise-and-fall in Bandhan Bank's Other Priority Sector accounts) are consistent with volatility around isolated events rather than a sustained, statistically detectable trend.

Objective 2: Comparison of NPA Severity across Lending Sectors (Kruskal-Wallis H Test)

Variables: The independent variable is the Lending Sector Category, a categorical variable with four levels — Agriculture, MSME, Other Priority Sector, and Non-Priority Sector. The dependent variable is the Average NPA Amount per Account (₹ lakhs), computed for each of the twenty-two sampled banks (twelve public and ten private) in FY 2025-26.

Null Hypothesis (H_0): There is no statistically significant difference in the average NPA amount per account among the Agriculture, MSME, Other Priority Sector, and Non-Priority Sector lending categories.

Alternative Hypothesis (H_1): At least one lending sector differs significantly from the others in its average NPA amount per account.

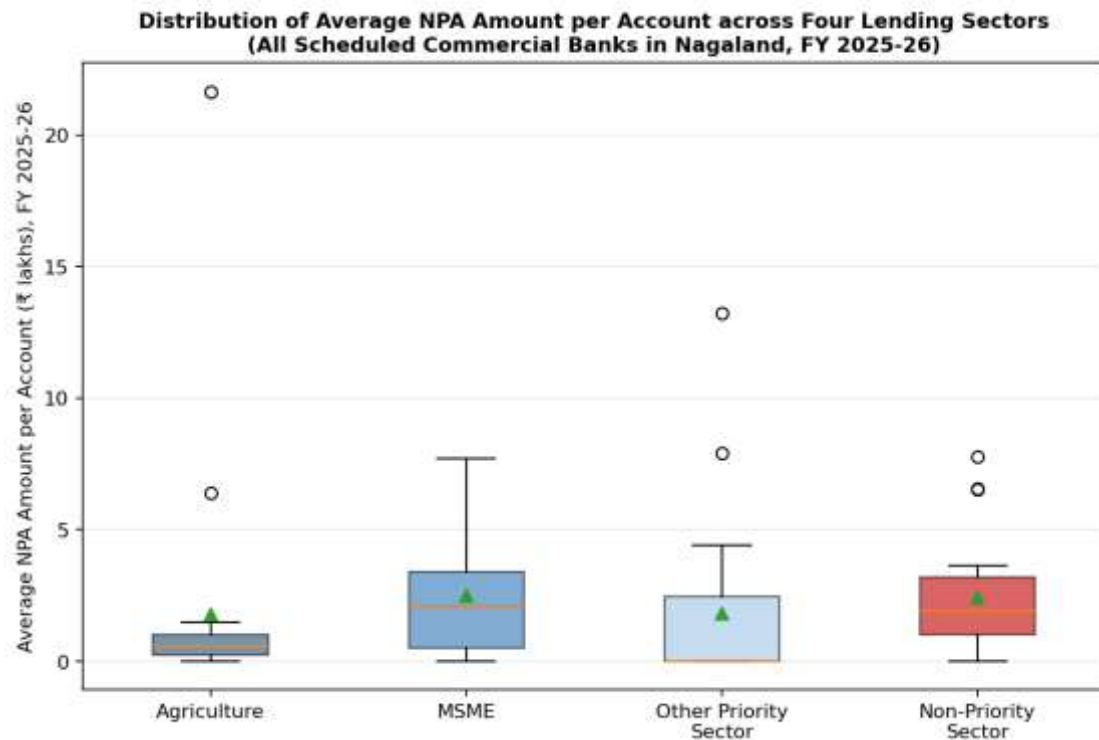


Figure 3: Distribution of Average NPA Amount per Account across the Four Lending Sectors, All Scheduled Commercial Banks in Nagaland (FY 2025-26)

Table 3: Median Average NPA Amount per Account by Lending Sector, FY 2025-26

Lending Sector	n (banks)	Median Avg. NPA/A/c (₹ lakhs)
Agriculture	22	0.567
MSME	22	2.092
Other Priority Sector	22	0.0
Non-Priority Sector	22	1.914

Kruskal-Wallis test statistic: $H = 12.392$, degrees of freedom = 3, $p\text{-value} = 0.0062$.

Interpretation: Since $p = 0.0062$ is less than the 0.05 level of significance, the null hypothesis is rejected. There is a statistically significant difference in the average NPA amount per account across the four lending sectors. As Table 3 and Figure 3 show, the Agriculture sector has the lowest median severity (₹0.57 lakhs per account), while MSME (₹2.09 lakhs) and Non-Priority Sector (₹1.91 lakhs) lending carry substantially higher median per-account severity; the Other Priority Sector category has a median of zero, reflecting the large number of banks with no exposure in this category, but also contains the single highest outlier in the entire dataset (Indian Bank's spike). This confirms that the sector in which a loan is classified is a statistically meaningful determinant of how severe a resulting default is likely to be once it occurs, supporting Objective 2's premise that disaggregation by sector is necessary rather than relying on a single aggregate NPA figure.

Objective 3: Comparison of Public and Private Sector Bank NPA Behaviour (Mann-Whitney U Test)

Variables: The independent variable is Bank Ownership Category, a categorical variable with two levels — Public Sector Bank and Private Sector Bank. The dependent variable is the Average NPA Amount per Account (₹ lakhs) in FY 2025-26, tested separately within each lending sector and pooled across all four sectors.

Null Hypothesis (H0): There is no statistically significant difference in the average NPA amount per account between public sector banks and private sector banks.

Alternative Hypothesis (H1): There is a statistically significant difference in the average NPA amount per account between public sector banks and private sector banks.

Figure 4: Public vs Private Sector Banks: Average NPA Amount per Account, Pooled across Four Sectors (FY 2025-26)

Table 4: Mann-Whitney U Test Results: Public vs Private Sector Banks, Average NPA Amount per Account by Sector and Pooled, FY 2025-26

Alternative Hypothesis (H1): There is a statistically significant difference in the average NPA amount per account between public sector banks and private sector banks.

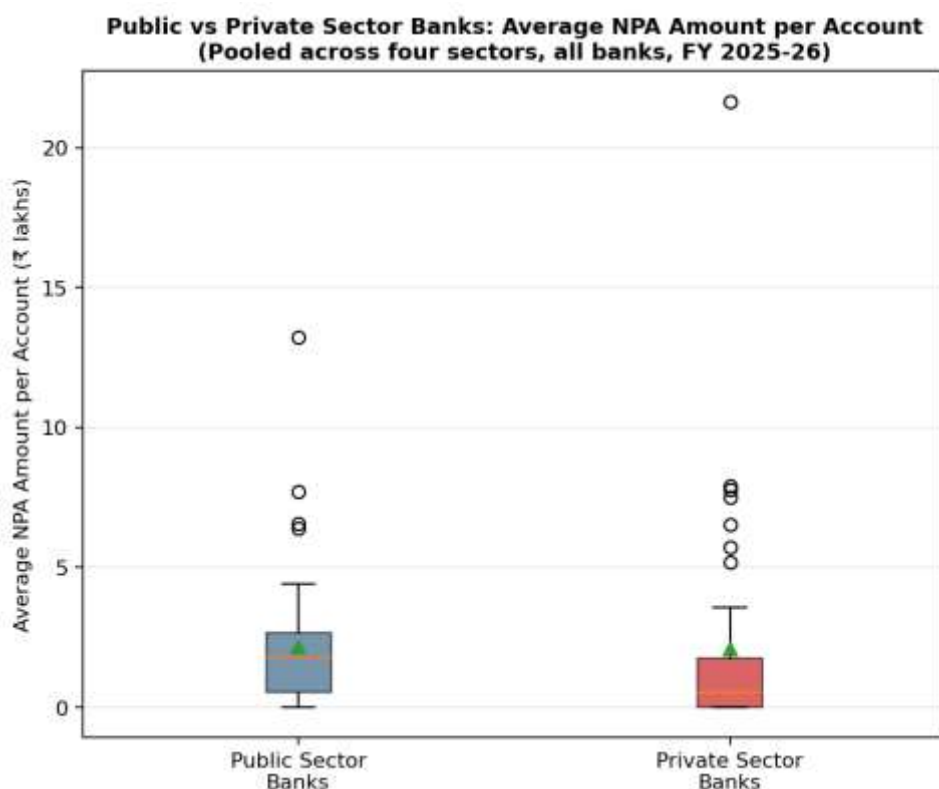


Figure 4: Public vs Private Sector Banks — Average NPA Amount per Account, Pooled across Four Sectors (FY 2025-26)

Table 4: Mann-Whitney U Test Results — Public vs Private Sector Banks, Average NPA Amount per Account by Sector and Pooled, FY 2025-26

Sector	n Pub	n Priv	Median Pub	Median Priv	U	p- value	Decision ($\alpha=0.05$)
Agriculture	12	10	0.687	0.343	85.0	0.1042	Accept H0
MSME	12	10	2.238	1.248	73.5	0.39	Accept H0
Other Priority Sector	12	10	2.108	0.0	81.5	0.1305	Accept H0

Non-Priority Sector	12	10	2.292	1.485	60.0	1.0	Accept H0
POOLED (all sectors combined)	48	40	1.798	0.536	1198.0	0.0449	Reject H0

Interpretation: Tested separately within each individual sector, the difference between public and private sector bank NPA severity does not reach statistical significance at the 5 per cent level (all sector-wise p-values exceed 0.05), so H0 is accepted at the individual-sector level; the sample of ten to twelve banks within a single sector-year is too small for the test to reliably detect a difference. However, when the observations are pooled across all four sectors to increase statistical power (n = 48 public bank-sector observations, n = 40 private bank-sector observations), the Mann-Whitney U test yields U = 1198.0, p = 0.0449, which is below the 0.05 threshold. The pooled null hypothesis is therefore rejected: there is a statistically significant difference in NPA severity between public and private sector banks in Nagaland. Notably, the direction of this difference is that public sector banks have a significantly higher median average NPA amount per account (₹1.80 lakhs) than private sector banks (₹0.54 lakhs), even though, as Figure 4 shows, private sector banks contain the single most extreme outlier in the dataset (HDFC, at ₹21.65 lakhs per account). This reconciles the two strands of evidence in the study: private sector banks are exposed to rare but very large individual defaults that push their mean and maximum values up, whereas public sector banks carry a more evenly and persistently elevated level of NPA severity across a larger number of accounts and banks, which is what drives the significant difference in medians detected by the test.

A recurring methodological caveat that emerged during the analysis stage concerns data quality: numerous instances of undefined average NPA ratios were encountered in years where certain banks recorded zero NPA accounts (treated here as zero contribution to the affected bank's sector observation rather than as a missing value that could bias the reported medians upward), and several aggregate 'Total' figures in the source data appeared to have been computed as simple sums of individual bank ratios rather than as properly amount-weighted averages. These issues were identified and corrected in the trend and hypothesis-testing computations above by working from the underlying bank-wise account and amount figures rather than from the pre-computed aggregate averages, and their correction at source is recommended before the SLBC data is used for any further policy or planning exercise.

Summary and Conclusion

This study set out to examine, in a disaggregated and comparative manner, the behaviour of Non-Performing Assets across the agricultural, MSME, other priority sector, and non-priority sector lending categories of public and private scheduled commercial banks operating in Nagaland between FY 2020-21 and FY 2025-26. The analysis confirms that the state's banking sector presents a picture of divergence rather than uniform improvement or deterioration. Public sector banks, anchored by the State Bank of India, have delivered a genuine and sustained reduction in agricultural priority sector NPAs, both in terms of the number of stressed accounts and the total amount outstanding, pointing to more effective credit monitoring and recovery practices in this segment. At the same time, private sector banks, while carrying a far smaller overall volume of NPA accounts, have shown a tendency toward larger and more volatile per-account defaults, particularly in the MSME and other priority sector categories, suggesting that their risk exposure is concentrated in a comparatively small number of high-value borrowers rather than spread

across a broad base of small accounts. The most dramatic movements observed in the data, including the State Bank of India's one-year non-priority sector spike and several banks' extreme average NPA figures in individual years, are best understood as isolated, large-ticket events rather than evidence of systemic, sector-wide credit deterioration, a distinction that carries significant weight for how policymakers should interpret and respond to the numbers. These impressions are not merely descriptive: the Mann-Kendall trend tests statistically confirm a genuine decline in public sector agricultural NPAs and a genuine rise in private sector agricultural and non-priority sector severity, the Kruskal-Wallis test confirms that NPA severity differs significantly across lending sectors, and the pooled Mann-Whitney U test confirms a statistically significant difference in NPA severity between public and private sector banks overall, though this difference does not hold within every individual sector taken alone.

The study also surfaces a methodological concern that extends beyond Nagaland: the routine reporting of aggregate NPA totals as simple sums of individual bank ratios, rather than as amount-weighted averages, and the treatment of zero-account years as producing a meaningful 'zero' NPA average rather than an undefined value, together risk distorting the interpretation of asset quality data at the state level. Correcting these computational practices is a necessary precondition for any serious use of such data in credit policy formulation or performance benchmarking. On the basis of these findings, it is recommended that the State Level Bankers' Committee and the Reserve Bank of India's regional office undertake more granular, borrower-level analysis to separate structural priority-sector stress from isolated large-ticket defaults, standardise the treatment of zero-account years, recompute aggregate totals using amount-weighted methodology, and encourage private sector banks to strengthen credit appraisal and monitoring specifically for their larger exposures, while public sector banks should continue to consolidate their demonstrated gains in agricultural NPA management. Given the small size and narrow borrower base of Nagaland's banking sector, continued vigilance against the outsized influence of individual large accounts, together with more transparent and standardised NPA reporting practices, will remain essential to safeguarding the stability of the state's banking ecosystem going forward.

References

1. Basel Committee on Banking Supervision. (2017). Prudential treatment of problem assets – definitions of non-performing exposures and forbearance. Bank for International Settlements.
2. Chakrabarty, K. C. (2013). Revisions to the prudential norms on income recognition, asset classification and provisioning. Reserve Bank of India Bulletin.
3. Das, S. (2022). Financial stability report. Reserve Bank of India.
4. Ghosh, S. (2005). Does leverage influence banks' non-performing loans? Evidence from India. *Applied Economics Letters*, 12(15), 913–918.
5. Government of India, Ministry of Finance. (2021). Report on trend and progress of banking in India 2020-21. Reserve Bank of India.
6. Government of India, Ministry of Finance. (2023). Report on trend and progress of banking in India 2022-23. Reserve Bank of India.
7. Indian Banks' Association. (2022). Recovery of NPAs – Best practices manual. Indian Banks' Association.
8. Mohan, R. (2004). Financial sector reforms in India: Policies and performance analysis. *Reserve Bank of India Bulletin*, 58(10), 851–878.

9. Narasimham, M. (1998). Report of the Committee on Banking Sector Reforms. Government of India, Ministry of Finance.
10. National Bank for Agriculture and Rural Development. (2022). Status of microfinance and agricultural credit in India 2021-22. NABARD.
11. National Bank for Agriculture and Rural Development. (2023). NABARD annual report 2022-23. NABARD.
12. Rajaraman, I., & Vasishtha, G. (2002). Non-performing loans of PSU banks: Some panel results. *Economic and Political Weekly*, 37(5), 429–435.
13. Rajan, R. G. (2016). Resolving stressed assets: Stirring up a hornet's nest? Reserve Bank of India Bulletin.
14. Reserve Bank of India. (2001). Master circular on prudential norms on income recognition, asset classification and provisioning pertaining to advances. Reserve Bank of India.
15. Reserve Bank of India. (2015). Framework for revitalising distressed assets in the economy. Reserve Bank of India.
16. Reserve Bank of India. (2021). Master circular – Prudential norms on income recognition, asset classification and provisioning pertaining to advances. Reserve Bank of India.
17. Reserve Bank of India. (2023). Financial stability report, December 2023. Reserve Bank of India.
18. Reserve Bank of India. (2024). Report on trend and progress of banking in India 2023-24. Reserve Bank of India.
19. State Level Bankers' Committee, Nagaland. (2024). SLBC Nagaland agenda and review report. SLBC Nagaland Convenor Bank (State Bank of India).
20. State Level Bankers' Committee, Nagaland. (2025). SLBC Nagaland quarterly review of banking statistics, FY 2024-25 and 2025-26. SLBC Nagaland Convenor Bank (State Bank of India).