An Analysis of Covid-19 and Asset Quality of Indian Public Sector Banks

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Abstract

NPAs have always been a problem for banks in India. This paper studies and compares the NPAs of public sector banks in India. For the purpose of comparison statistical tools like the Shapiro Wilk Test, Wilcoxon signed rank test, and before and after paired T-test have been used. The study concludes that Gross and Net NPA have declined from March 2020 to March 2021 despite the impact of the Covid-19 pandemic. This study analyses the factors responsible for the decline in NPAs. For the purpose of this study, secondary data from the RBI's website along with the data collected from the annual reports of the public sector banks has been used.

Keywords

Non-performing assets, Public sector bank, Covid-19, and Reserve bank of India.

1. Introduction

Banks provide financial stability to the economy. Banks are agents that accept public deposits and create credit in the form of loans and advances thus creating the flow of credit in the economy. However, when banks extend credit in the form of loans and advances they also expose themselves to the risk of non-recovery there by creating Non-performing Assets. Building up of Non-performing Assets (NPAs) disrupts the flow of credit (Agarwala & Agarwala, 2019). It also dents the growth of other sectors of the economy. Of late the profits of PSB have been dwindling in light of the increasing NPAs. Covid-19, the health crisis of 2020 further damaged the already bruised banking industry. RBI's Financial Stability Report (FSR) of 2020 foresaw a surge in the Gross NPA ratio of the banking sector up to 13.5 percent in September 2021, from 7.5 percent in September 2020.

2. Meaning of Non-performing Assets

Loans and Advances are the assets of a bank. When the bank fails to recover the principal as well as the interest amount of the loans from the borrowers they become bad loans. In banking these bad loans are referred to as Non-performing Assets (NPA) or Non-performing Loans (NPL).

RBI defines an NPA as "An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank. A 'Non-performing Asset' (NPA) was defined as a credit facility in respect of which the interest and/ or instalment of principal has remained 'past due' for a specified period of time."

As per RBI's Master Circular on Income Recognition, Asset Classification, Provisioning & Other Related Matters, with effect from March 31st, 2004, "a non-performing asset shall be a loan or an advance where:

(i) Interest and/or instalment of principal remain overdue for a period of more than 90 days in respect of a Term Loan.

(ii) The account remains 'Out of order' @ for a period of more than 90 days, in respect of an Overdraft/ Cash Credit (OD/CC).

(iii) The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted.

(iv) For agricultural loans, the principal or interest amount remains overdue
   a) for two crop seasons in case of short-duration crop loans.
   b) for one crop season in case of long-duration crop loans.

(v) Any amount to be received remains overdue for a period of more than 90 days in respect of other accounts."

3. Impact of NPA

3.1 Banks do not have adequate funds to lend for other profitable economic operations.

3.2 Banks are forced to raise interest rates in order to retain their profit margins.

3.3 Unemployment rates may rise as investment freezes.

4. NPA Norms during Covid-19

According to the RBI Governor Shaktikanta Das' statement on April, 17, 2020 "On March 27, 2020, the RBI had permitted lending institutions (LIs) to grant a moratorium of three months on payment of current dues falling between March 1st and May 31st, 2020. It is recognized that the onset of Covid-19 has also exacerbated the challenges for such borrowers even to honour their commitments fallen due on or before February 29th, 2020, in Standard Accounts. The Basel

Committee on Banking Supervision (BCBS) has taken cognizance of the financial and economic impact of Covid-19 and very recently announced that "………. the payment moratorium periods (Public or granted by banks on a voluntary basis) relating to the Covid-19 outbreak can be excluded by banks from the number of days past due" in respect of NPA recognition. RBI Governor Shaktikanta Das also said. "In respect of all accounts for which lending institutions decide to grant moratorium or deferment, and which were standard as on March 1st, 2020, the 90-day NPA norm shall exclude the moratorium period, i.e., there would an asset classification standstill for all such accounts from March 1st, 2020, to May 31st, 2020."

5. Objectives of the Paper

5.1 To get an understanding of the concept of NPA in banks.
5.2 To study the impact of Covid-19 on the NPA of banks in India (PSB).
5.3 Suggest measures to reduce NPAs of PSB.

6. Research Methodology

The present study of non-performing assets is confined and restricted to Indian public sector banks and data is analysed for the years 2020-2021 with the intent to measure the change in GNPA and NNPA during the health crisis of 2020. For the purpose of this study, secondary data has been collected from the RBI website for the year ending 31st March 2020 & 31st March-2021. Also for the reference, the author visited the websites of the various PSB.

In order to draw inferences about the effect of the health crisis on GNPA and NNPA, descriptive statistics (using tables and graphs) is being used for each bank. Microsoft Excel is used for statistical analysis. Research on significant differences between pre and post Covid-19 GNPA and NNPA of public sector banks is conducted using parametric and non-parametric tests namely, and before and after Paired t-test, Shapiro Wilk test, and Wilcoxon signed rank test.

7. Review of the Literature

7.1 Jain et al., (2021) the paper studies the financial performance of banks in terms of soundness, asset quality, stability, and competence. It also analyses Non-performing Assets (NPA) both gross and Net Non-performing Assets in public, private, and foreign banks. The study concludes that with an increase in total income, there is an increase in Non-performing Assets on the contrary there will be a decrease in profit with an increase of Non- performing Assets.

7.2 Selvam & Premnath, (2020) the writers compared NPAs to a crown that has piqued the nation's interest. The authors also propose that an acceptable model for calculating NPAs in Indian banks be developed in order to prevent loans and advances from becoming NPAs. According to them, the growing level of NPA is due to banks' ineffective credit evaluation mechanisms, which fails to track post-disbursement loan accounts in order to prevent them from becoming NPA. Excessive non-performing assets (NPAs) implies a large benefit to the largest number of loan defaults, which affects the banks' profitability and total assets, as well as disintegrates the advantage estimation.

7.3 Chary, S, N., & Fasi, M. (2019) the authors observe that an increase in non-performing assets (NPAs) directly creates an impact on the financial performance of the banks. They suggest that a high NPA points at defaults in repayment that continue to increase in large numbers, and ultimately affects "the profitability and net worth of banks." This paper studies the concept of NPAs and review of literature on NPAs, of select banks for a period of 10 years (2009-2018) and the present state of public sector banks in terms of profitability. The article studies the impact of NPAs on the performance of select public sector banks in general.

7.4 Agarwala & Agarwala, (2019) their paper assessed the growth rate of NPAs of private sector banks and found that the NPAs are low in private sector banks as compared to the nationalised banks, including SBI and its associates. They also pointed "that nationalised banks and the associate banks of SBI failed to handle the issue of poor loans effectively" which ultimately led to the growth of non-performing loans.

7.5 Shaban, (2018) the paper examines the impact of Non-performing Assets on the profitability of Indian commercial banks i.e. public banks, private banks and foreign banks. For this purpose data has been collected from the RBI database, for the period covering 11 years (1st April 2006 to 31st March 2017). The study uses Regression analysis. To examine the impact on profitability ROA (return on assets) and ROE (return on equity) have been used as proxy variables whereas Gross NPA to Gross advances ratio and Net NPA to Net advances ratio are the independent variables in this paper. The study concludes that NPA directly affects profitability of banks.

7.6 Tripathy, S, Yadav, (2016) NPAs of banks indicate the credit risk undertaken by them. The more the NPAs the lower the performance of the bank. In India NPAs are increasing because of faulty lending policy and the compulsion of lending to priority sectors by commercial banks; therefore NPAs have become a debatable topic today in the Indian banking sector and it needs to be reduced to improve the profitability and efficiency of banks. In this paper the authors analyse the concept of non-performing assets in the Indian banking sector.

7.7 N.A. Kavitha Muthumeenakshi, M, (2016) this study shows that the extent of NPA of public sector banks is much higher when compared to private banks. Although various steps have been taken by the government to reduce the NPAs, still a lot needs to be done to curb this problem.

7.8 Joseph, (2014) Studies the trends of NPA in the Indian banking sector, and further investigates the factors that mainly contribute to the rising NPA in the Indian banking industry. The author also suggests measures to overcome the burden of NPA on the banking industry.

8. Findings and Analysis

This study is descriptive since it deals with statistical data and the main aim of the report is to analyse the difference between Net and Gross Measures of NPA pre- and post- Covid-19. Measures of Gross and Net NPA for twelve Indian banks have been collected for this analysis.

A Comparative Analysis of Gross Non-performing Assets during pre and post Covid-19.

For the above study, statistics related to Gross NPA and Net NPA have been analysed and inferences have been drawn. The following tests have been used:

Test 1: Shapiro Wilk Test: Normality has been tested using the Shapiro Wilk test. In case the differences do not follow normal distribution, non-parametric tests may be applied to test the differences.

Test 2: Wilcoxon Signed Rank Test: This non-parametric test allows us to test for the differences between paired measurements when the data does not follow normal distribution.

Test 3: Before and After Paired T-test: This test allows us to test for the differences between the paired measurements under the assumption that the pairs must be independent, and the differences are normally distributed.

A trend in the gross and net non-performing assets of Banks has been seen through tables and graphs comparing Gross and Net NPA during March 2020 (in %) and March 2021 (in %).

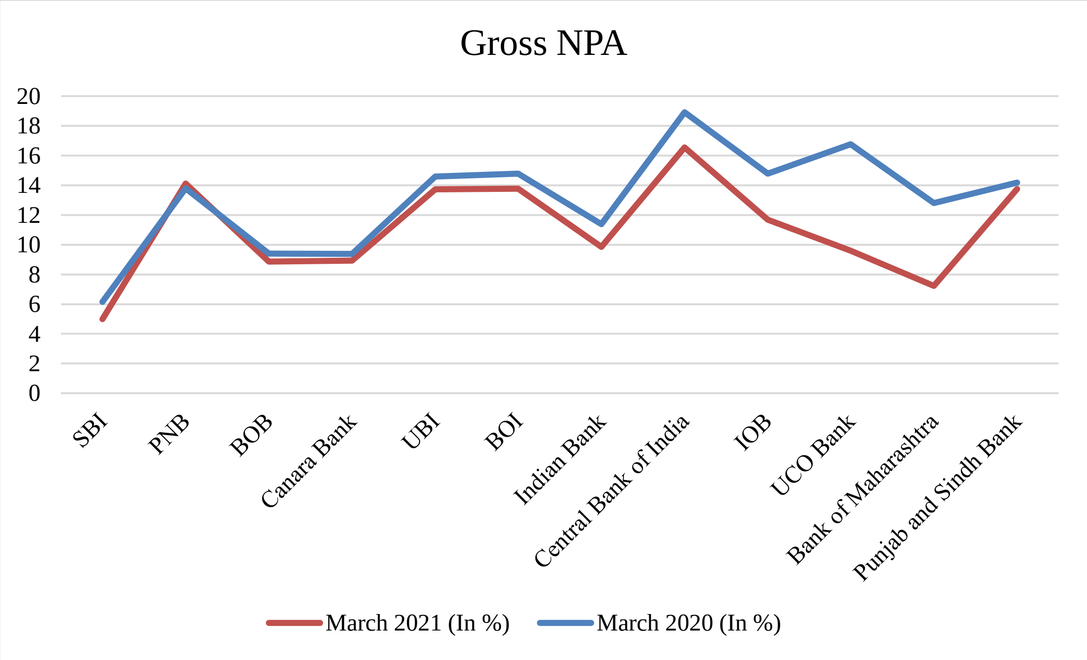
Gross NPA-

Table 1:- Gross NPA during March 2020 and March 2021

Bank	March 2021 (in %)	March 2020 (in %)	Variation
SBI	4.98	6.15	-1.17
PNB	14.12	13.79	0.33
BOB	8.87	9.4	-0.53
Canara Bank	8.93	9.39	-0.46
UBI	13.74	14.59	-0.85
BOI	13.77	14.78	-1.01
Indian Bank	9.85	11.39	-1.54
Central Bank of India	16.55	18.92	-2.37
IOB	11.69	14.78	-3.09
UCO Bank	9.59	16.77	-7.18
Bank of Maharashtra	7.23	12.81	-5.58
Punjab and Sindh Bank	13.76	14.18	-0.42

Source: Report on Trend and Progress of Banking in India 2020 &21

Table 1 depicts that the Gross NPA during March 2021 is less than the Gross NPA during March 2020 for 11 banks in total. However, the Gross NPA for Punjab National bank has increased from March 2020 to March 2021.



Source: Report on Trend and Progress of Banking in India 2020 & 21

Figure 1:- Line Chart Showing Variations in Gross NPA

Figure 1 depicts that gross NPA during March 2021 is less than the gross NPA during March 2020

Table 2:- Shapiro Wilk Test for Checking Normality

Data	Value
W-statistic	**0.832661843**
p-value	0.025302746
alpha	0.05
normal	No

Source: Calculated by the authors

It is inferred from Table 2 that the data for Gross NPA of banks pre and post-Covid-19 does not follow Normal distribution since the computed p-value <0.05 at 95 percent confidence level. Therefore, a non-parametric test namely, Wilcoxon signed rank test has to be applied to study the hypothesis.

Hypothesis Testing

Null Hypothesis: The paired mean difference is zero i.e., the Gross NPA for March 2020 is equal to the Gross NPA for March 2021.
Alternative Hypothesis: The paired mean difference is less than zero i.e., the Gross NPA for March 2021 is less than the Gross NPA for March 2020 (one-tailed).

Table 3:- Wilcoxon Signed Rank Test for Analysing Paired Mean Difference

Data	Value
Sample size	**12**
Alpha	0.05
Calculated value of test-statistic W	1
Critical value of test-statistic W	17

Source: Calculated by the authors

It is inferred from Table 3 that the two samples do not follow the same distribution since calculated value of test-statistic W<Critical value of test-statistic W, therefore the null hypothesis can be rejected at 5 level of significance.
It can be concluded that the Gross NPA has been affected by the Covid-19 Pandemic. The Gross NPA during March 2020 was greater than the Gross NPA during March 2021.

NET NPA

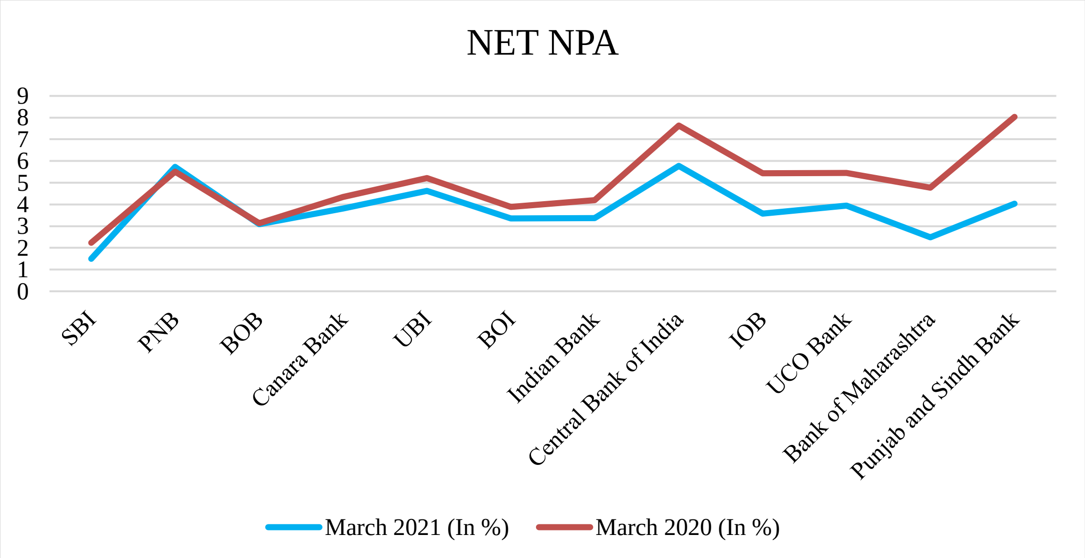
Table 4:- Net NPA during March 2020 and March 2021

NET NPA			
Bank	**March 2021 (in %)**	**March 2020 (in %)**	**Variation**
SBI	1.5	2.23	-0.73
PNB	5.73	5.51	0.22
BOB	3.09	3.13	0.04
Canara Bank	3.82	4.34	0.52
UBI	4.62	5.22	0.6

Bank	March 2021 (in %)	March 2020 (in %)	Variation
BOI	3.35	3.88	0.53
Indian Bank	3.37	4.19	0.82
Central Bank of India	5.77	7.63	1.86
IOB	3.58	5.44	1.86
UCO Bank	3.94	5.45	1.51
Bank of Maharashtra	2.48	4.77	2.29
Punjab and Sindh Bank	4.04	8.03	3.99

Source: Report on Trend and Progress of Banking in India 2020 &21

Table 4 depicts that the Net NPA during March 2021 is less than the Gross NPA during March 2020 for 11 banks in total. The Net NPA for Punjab National Bank has increased from March 2020 to March 2021.



Source: Report on Trend and Progress of Banking in India 2020 & 21

Figure 2:- Line Chart showing Variations in Net NPA

Figure 2 depicts that net NPA during March 2021 is less than the net NPA during March 2020.

Table 5:- Shapiro Wilk Test for checking normality

Data	Value
W-statistic	0.880236564
p-value	0.104768172
alpha	0.05
normal	Yes

Source: Calculated by the authors

It is inferred from Table 5 that the data for Net NPA of banks pre- and post-Covid-19 follows Normal distribution since the computed p-value >0.05 at 95 percent confidence level.

Therefore, to test if the Net NPA as on 31st March, 2020 and 31st March, 2021 is equal, a paired t-test has to be applied to the dataset.

Hypothesis Testing

Null Hypothesis: The paired mean difference between March 2020 and March 2021 is zero.

Alternative Hypothesis: The paired mean difference is less than zero i.e., the Net NPA for March 2021 is less than the Net NPA for March 2020. (One-tailed).

Table 6: - Paired T-test for Analysing Paired Mean Difference

Data	Value
Sample size	12
Alpha	0.05
t critical one-tail	1.795884819
t stat	-3.599516145
P(T<=t) one tail(p-value)	0.002086732

Source: Calculated by the authors

From Table 6, it is inferred the population means are different. Since the calculated p-value is less than 0.05, we can reject the null hypothesis at 5 percent level of significance.

Past trends reveal that Net NPA continues to decline each year. Using this test, it can be concluded that the average Net NPA for March 2021 is less than the average net NPA for March 2020. Thus the pandemic has not significantly affected NNPA.

9. Findings

Gross and Net NPA have declined from March 2020 to March 2021 despite the impact of Covid-19 pandemic. This is predominantly a result of many factors. In order to clean their bank sheets, Banks wrote off relatively more NPAs in 2020. To maintain healthy balance sheets, banks chose to write-off relatively more NPAs. This is because banks need to provision a part of their profit as a buffer for prospective losses and thus, NPAs reduce a bank's available capital to lend new loans.

Due to debt-recovery channels, large NPA accounts got resolved which led to a decline in gross and net measures of NPA. Transparent recognition of stressed assets as NPAs led to a rise in Gross NPA and later, because of the government's strategy of recognition, resolution, recapitalization, and reforms, the Gross NPA declined from March 2020 to March 2021.

The decline of NPA was expected since several government support schemes for MSMEs had helped borrowers to conserve cash flows. Examples: Covid related restructuring scheme for MSMEs till March 31, 2021 and Resolution Framework 2.0 scheme for personal loans and MSMEs till September 30, 2021.

Various relief measures, such as a suspension on loan repayment, a halt to asset categorization, and cash supplied to borrowers under a guaranteed emergency credit line, have all contributed to the recovery in asset quality. However, the asset quality challenges are expected to return when the impact of these actions wears off.

Measures to check NPAs in India

The government and RBI have undertaken numerous initiatives to control the NPAs. These are as follows –

- RBI has introduced Debt Recovery Tribunals (DRT) to address the problem of NPA's.
- Asset Reconstruction Companies (ARC) are being encouraged to expand.
- The Insolvency and Bankruptcy Code, as well as corporate debt restraint, were introduced.
- The 5:25 rule, or Flexible Restructuring of Long-Term Project Loans to Infrastructure and Core Industries, was implemented.
- Mission Indradhanush introduced to restructure public sector banks.
- SAMADHAN is a new programme that focuses on asset management and debt restructuring.
- Banks to review asset quality.
- NPAs to be dealt with by Lok Adalat, the Credit Information Bureau.

10. Further Scope of Study

The study examines change in NPA in PSB, which can be extended to PvSB.
Also, for the purpose of this study dataset of 2 years has been used. However, the authors feel that the impact of Covid-19 on NPA's of commercial banks will be on a longer period of time.

11. Conclusion

The above study concludes that impact of Covid-19 on NPA's of public sector banks in India was not visible in fact the NPA's decreased in March 2021. This can be credited to the stringent measures undertaken by RBI that our public sector banks sailed through the difficult times smoothly. However we need to be more vigil for the NPA's in commercial banks may surface over a period of time. As analysts have predicted that this might be a likely build-up of hidden stress.

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