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# COMPARATIVE ANALYSIS OF ASSET QUALITY OF PUBLIC AND PRIVATE SECTOR BANKS IN INDIA

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**Abstract**

Asset quality is the indicator for the health of the banking industry in a country. With the introduction of international norms of Income Recognition, Asset classification and Provisioning in the banking sector, managing Non-Performing Assets have emerged as one of the major challenges facing the banks. This study provides an analysis of the trends of NPAs of Public and Private Sector Banks in India and found that the NPAs of both the groups have been increasing regularly year by year but the magnitude of Non-Performing Asset is comparatively higher in public sectors banks than private sector banks. Further it analysed the asset quality in terms of Gross Non-Performing Asset & Net Non-Performing Asset to Total Assets ratios, Slippage & Net Slippage ratios, Restructured Standard Asset ratio, Stressed Asset and Impaired Asset ratios besides Gross Non-Performing Asset and Net Non-Performing Asset ratios based on the secondary data. Analysis of variance (ANOVA) and F-test are used with the help of Statistical Package for the Social Sciences to ascertain the significant difference in various parameters of Net-Performing Asset between Public Sector Banks and Private Sector Banks. It was observed that there is significant difference in between Public Sector Banks and Private Sector

***Keywords:***

*Non Performing Assets*

*Slippage Ratio*

*Restructured Asset Ratio*

*Stressed Asset Ratio*

*Impaired Asset Ratio*

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Banks in respect of Net Non-Performing Asset ratio, Restructured Standard Asset ratio, Stressed Asset and Impaired Asset ratios and there is no significant difference in respect of Gross Non-Performing Asset ratio, Gross Non-Performing Asset & Net Non-Performing Asset to Total Assets ratios, Slippage and Net Slippage ratios.

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## 1. Introduction

Banking sector plays a pivotal role in the development of an economy. A healthy banking system is essential for sustained and rapid economic progress. The best indicator for the health of the banking industry in a country is its asset quality. With the introduction of international norms of Income Recognition, Asset classification and Provisioning in the banking sector, managing Non-Performing Assets (NPAs) have emerged as one of the major challenges facing the banks. The Gross NPAs (GNPAs) of Scheduled Commercial Banks (SCBs) stood at Rs. 611500 crore as on March 2016 constituting about 7.5% of gross advances and further this ratio rose to 9.6% in 2017. Among the bank groups, Public Sector Banks (PSBs) continued to share a disproportionate and increasing burden in case of Net NPAs (NNPAs). An attempt is made in this paper to analyse the performance of Public Sector Banks (PSBs) and Private Sector Banks (PVSBs) in NPA management.

### 1.1 Concept of NPAs

An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank. An NPA is a loan or an advance where;

- ❖ interest and/or instalment of principal remains overdue for a period of more than 90 days in respect of a term loan,
- ❖ the account remains ‘out of order’ in respect of an Overdraft/Cash Credit (OD/CC),
- ❖ the bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,
- ❖ the instalment of principal or interest thereon remains overdue for two crop seasons for short

duration crops,

- the instalment of principal or interest thereon remains overdue for one crop season for long duration crops,
- the amount of liquidity facility remains outstanding for more than 90 days, in respect of a securitisation transaction,
- in respect of derivative transactions, the overdue receivables representing positive mark-to-market value of a derivative contract, if these remain unpaid for a period of 90 days from the specified due date for payment.

- *'Out of Order' status*

An account should be treated as 'out of order' if the outstanding balance remains continuously in excess of the sanctioned limit/drawing power. In cases where the outstanding balance in the principal operating account is less than the sanctioned limit/drawing power, but there are no credits continuously for 90 days as on the date of Balance Sheet or credits are not enough to cover the interest debited during the same period, these accounts should be treated as 'out of order'.

- *'Overdue'*

Any amount due to the bank under any credit facility is 'overdue' if it is not paid on the due date fixed by the bank.

1.2 Categories of NPAs

Banks are required to classify NPAs further into the following three categories based on the period for which the asset has remained non-performing and the realisability of the dues:

1.2.1 Substandard Assets

With effect from 31 March, 2005, a substandard asset would be one, which has remained NPA for a period less than or equal to 12 months. Such an asset will have well defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected. 1.2.2 Doubtful Assets

With effect from 31 March, 2005, an asset would be classified as doubtful if it has remained in the substandard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full, on the basis of currently known facts, conditions and values — highly questionable and improbable.

1.2.3 Loss Assets

A loss asset is one where loss has been identified by the bank or internal or external auditors or the Reserve Bank of India (RBI) inspection but the amount has not been written off wholly. In other words, such an asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted although there may be some salvage or recovery value.

## 2. Objectives

The objectives of the study are:

i. To study the trend of NPAs of PSBs and PVSBs

ii. To evaluate the performance of PSBs and PVSBs

## 3. Review of Literature

A brief review of literature on the studies on NPAs is presented below:

**Harpreet Kaur, et al.** (2011) studied NPAs of PSBs and PVSBs and the study period was 1995 to 2009. Both types of banks showed a declining trend in GNPA and NNPAs over the period of the study but PSBs show higher ratio as compared to PVSBs; reason behind this is that PVSBs have a secured loan policy as compared to PSBs. GNPA and NNPAs have increased in absolute terms till 2002 and started declining after that. It is observed that GNPAs in percentage terms with gross advances of PSBs have declined from 19.5% (Rs. 38384 crore) to 2.1% (Rs. 44039 crore) in the period of 1994-95 to 2008-09, whereas GNPAs as percentage with gross advances of PVSBs have declined from 8.7% (Rs. 3186 crore) to 3.2 % (Rs. 16983 crore) during the period of 1997-98 to 2008-09. On the other hand NNPAs of PSBs in percentage terms have also come down from 10.70% (Rs. 7567 crore) in 1994-95 to 0.70% (Rs. 21033 crore) in 2008-09 but comparatively in PVSBs, NNPAs in percentage terms to net advances have also come down from 8.20% (Rs. 1863 crore) in 1997-98 to 1.50% (Rs. 7418 crore) in 2008-09.

**Pacha Malyadri, et al.** (2011) examined the state of affair of the NPAs of the PSBs and PVSBs in India with special reference to weaker sections for the period of seven years i.e. from 2004-2010. It was observed that the PSBs comprise of two groups i.e. nationalized banks group and state bank group. These groups depicted that, over the period of study, the share of nationalized banks in advances and NPAs is more than the state bank group advances and NPAs. It was further observed that there is increase in advances over the period of the study and the decline in ratio of NPAs indicates improvement in the asset quality of Indian PSBs and PVSBs.

**Kavitha, N. (2012)** observed that there is an increase in advances over the period of the study. It was also observed that Ratio of GNPA to Gross Advances is 9.83% by Nationalized banks, Ratio of NNPA to Net Advances of Nationalised bank group has secured 4.80%, Ratio of GNPA to Total Assets is found to be 4.39% by Nationalised bank group; Ratio of NNPA to Total Assets of Nationalised bank group with 1.97% which is more than State Bank of India (SBI) and its Associates and private bank group. When the overall position was assessed, it is found that Nationalised bank group has secured the first place and the second place was taken by SBI and its Associates. She inferred that the decline in ratio of NPAs indicates improvement in the assets quality of SBI groups, Nationalized Banks and PVSBs

**Mahadeva Murthy, et al.** (2013) analysed to highlight the NPAs position of PSBs and PVSBs in India and studied the trend of NPAs in PSBs and PVSBs in the nineteen years from 1993-94 to 2011-12. Tabular analysis was used and observed that the level of NPAs in relation to the total assets has declined. There is a decline in the percentage of NPAs from 14.50% to 1.70% in PSBs over a period of study. There is also decline in the percentage of NPAs from 3.36% to 0.50% in PVSBs from 1993-94 to 2011-12. The level of NPA in PSBs hold larger share compared to PVSBs. It is found that USA stands first among all the countries in terms of percentage of NPA with 3.9% in the year 2012.

**Mohnani Priyanka, et al.** (2013) evaluated the operational performance of the selected PSBs & PVSBs in India and also analyzed how efficiently PSBs and PVSBs can manage NPA. The study covered the period from 2002-03 to 2011-2012. They found that there has been marginal decrease in NPAs level over the period in all selected banks. It is observed that the magnitude of

NPA was comparatively higher in PSBs compared to PVSBs under study but they have managed the number at lower end. GNPAs ratio of Punjab National Bank (PNB) is less and it has been reduced over the period in comparison to SBI. On the other side as far as Private Banks are concerned, HDFC has better performance in comparison to ICICI. ICICI bank has higher NPA figure compared to PSBs under study.

**Sultan Singh, et al.** (2013) attempted to analyze the asset quality of selected private sector Indian banks. During the period under study, the ratio of NNPAs to total assets ranges from 0.00% to 1.20% in case of ICICI, from 0.16% to 3.39% in case of IndusInd, from 0.17% to 1.59% in case of Axis and from 0.07% to 1.19% in case of HDFC, the ratio of NNPAs to net advances ranges from 0.72% to 5.48% in case of ICICI, from 0.28% to 6.59% in case of IndusInd, from 0.29% to 3.43% in case of Axis and from 0.16% to 0.63% in case of HDFC and the ratio of total investments to total assets ranges from 26.48% to 39.05% in case of ICICI, from 22.94% to 30.70% in case of IndusInd, from 29.66% to 44.04% in case of Axis and from 25.57% to 48.36% in case of HDFC respectively. The study revealed that there is a significant difference in the ratio of NNPAs to total assets, NNPAs to net advances and total investments to total assets in the selected banks. This revealed that there exists significant difference in the asset quality of the selected banks during the period under study.

## 4. Methodology

The study is descriptive research and analytical study. The sample consists of PSBS and PVSBs and data collected for the period of nine years from 2008-2016. The secondary data have been collected from the reports of the RBI like Trend and Progress of Banking in India, and Hand book of Statistics on Indian Economy. ANOVA and F-test are used with the help of SPSS. Earlier researchers compared the performance of PSBs and PVSBs only in terms of GNPA and NNPA ratios, but we attempted to compare in terms of GNPA & NNPA to Total Assets ratios, Slippage & Net Slippage ratios, Restructured Standard Asset (RSA) ratio, Stressed Asset and Impaired Asset ratios besides GNPA and NNPA ratios. (Formulae for ratios furnished in Table 1).

Table 1. Parameters used

| **Parameter** | **Formula** |
|---|---|
| GNPA Ratio | GNPA/Gross Advances*100 |
| NNPA Ratio | NNPA/Net Advances*100 |
| GNPA to Total Assets Ratio | GNPA/Total Assets*100 |
| NNPA to Total Assets Ratio | NNPA/Total Assets *100 |
| Slippage Ratio | Fresh accretion to NPAs during the year/Standard advances at the beginning of the year *100 |
| Net Slippage Ratio | Fresh accretion to NPAs during the year minus Recoveries/Standard advances at the beginning of the year *100 |
| Restructured Standard Asset Ratio | Restructured Standard assets/Gross Advances*100 |
| Stressed Asset Ratio | GNPA+RSA/Gross Advances*100 |
| Impaired Asset Ratio | GNPA+RSA + Cumulative Write-off/Gross Advances*100 |

Hypotheses

To ascertain the significant difference in various parameters of NPA between PSBs and PVSBs, ANOVA test by formulating the following hypotheses is attempted.

$H_1$: There is no significant difference in GNPA ratio between PSBs and PVSBs.

$H_2$: There is no significant difference in NNPA ratio between PSBs and PVSBs.

$H_3$: There is no significant difference in GNPA to Total Assets ratio between PSBs and PVSBs.

$H_4$: There is no significant difference in NNPA to Total Assets ratio between PSBs and PVSBs.

$H_5$: There is no significant difference in Slippage ratio between PSBs and PVSBs.

$H_6$: There is no significant difference in Net Slippage ratio of between PSBs and PVSBs.

$H_7$: There is no significant difference in Restructured Standard Asset ratio between PSBs and PVSBs.

$H_8$: There is no significant difference in the Stressed Asset ratio between PSBs and PVSBs.

$H_9$: There is no significant difference in the Impaired Asset ratio between PSBs and PVSBs.

## 5. Results and Discussion

The results of the analysis are furnished in the following paragraphs.

5.1 Trends in NPAs of PSBs and PVSBs

The gross advances of PSBs were Rs. 1819100 crore in 2008 and have increased to Rs. 5827500 crore in 2016. The absolute GNPA has increased from Rs. 40595 crore in 2008 to Rs. 539956 crore and the net advances of PSBs have increased from Rs. 1797401 crore in 2008 to Rs. 5593577 crore in 2016 and the NNPAs, which were Rs. 17386 crore in 2008 showing increasing trend and reached to Rs. 349820 crore in 2016. The gross advances of PVSBs of Rs. 525845 crore in 2008 have increased to Rs. 1974200 crore in 2016 and the net advances increased from Rs. 518403 crore in 2008 to Rs. 1944977 crore in 2016. The amount of GNPAs and NNPAs, which were Rs. 12997 crore and Rs. 5647 crore respectively in 2008 stood at Rs. 55900 crore and Rs.26677 crore respectively in 2016 (Table 2 & 3).

Table 2. Trends of GNPAs and NNPAs of PSBs

(Rs. in crore)

| Year | Gross Advances | Growth % | GNPAs | Growth % | Net Advances | Growth % | NNPAs | Growth % |
|---|---|---|---|---|---|---|---|---|
| 2008 | 1819100 | 24.21 | 40595 | 4.18 | 1797401 | 24.81 | 17386 | 14.8 |
| 2009 | 2282800 | 25.53 | 44957 | 10.75 | 2259212 | 25.69 | 21155 | 21.68 |
| 2010 | 2733500 | 19.71 | 59926 | 33.3 | 2701300 | 19.57 | 29375 | 38.86 |
| 2011 | 3346500 | 12.67 | 74614 | 24.51 | 3305632 | 22.37 | 36071 | 22.79 |
| 2012 | 3942800 | 28.02 | 112499 | 50.76 | 3877307 | 17.29 | 59300 | 64.4 |
| 2013 | 4560100 | 15.66 | 164462 | 46.2 | 4472774 | 15.36 | 90000 | 51.77 |
| 2014 | 5215920 | 14.38 | 227264 | 38.19 | 5101137 | 14.05 | 130635 | 45.15 |
| 2015 | 5616717 | 7.68 | 278468 | 22.53 | 5476250 | 7.35 | 160208 | 22.64 |
| 2016 | 5827500 | 3.75 | 539956 | 93.9 | 5593577 | 2.14 | 349820 | 118.35 |
| Source: Statistical tables relating to banks, RBI and own computation | | | | | | | | |

The annual growth rate of GNPA and NNPA of PSBs started increasing from the year 2008 and recorded maximum growth rate of 93.9% and 118.35% by 2016 respectively, though they show fluctuating trend during the intermittent period. The annual rate of growth with respect to GNPAs and NNPAs for the PVSBs came down over the years till 2012, but there is a substantial increase in the growth rate from the year 2013, and stood at 65.87% in respect of GNPA and 59.42% in case of NNPA in the year 2016 (Table 2 & 3).

Table 3. Trends in GNPAs and NNPAs of PVSBs

(Rs. in crore)

| **Year** | **Gross Advances** | **% Growth** | **Net Advances** | **% Growth** | **GNPA** | **% Growth** | **NNPA** | **% Growth** |
|---|---|---|---|---|---|---|---|---|
| 2008 | 525845 | 25.16 | 518403 | 24.99 | 12997 | 40.42 | 5647 | 40.19 |
| 2009 | 585065 | 11.26 | 575328 | 10.98 | 16926 | 30.23 | 7411 | 31.24 |
| 2010 | 644070 | 10.09 | 632494 | 9.94 | 17639 | 4.21 | 6505 | -12.23 |
| 2011 | 732310 | 13.7 | 797533 | 26.09 | 18100 | 2.61 | 4300 | -33.9 |
| 2012 | 981217 | 33.99 | 966402 | 21.17 | 18315 | 1.19 | 4300 | 0 |
| 2013 | 1159200 | 18.14 | 1143248 | 18.3 | 20763 | 13.37 | 5900 | 37.21 |
| 2014 | 1361323 | 17.44 | 1342935 | 17.47 | 24190 | 16.51 | 8862 | 50.2 |
| 2015 | 1608657 | 18.17 | 1584314 | 17.97 | 33700 | 39.31 | 14128 | 59.42 |
| 2016 | 1974200 | 22.73 | 1944977 | 22.76 | 55900 | 65.87 | 26677 | 88.82 |
| Source: Statistical tables relating to banks, RBI and own computation | | | | | | | | |

The NPAs of PSBs accounted for 88.2% of the NPAs of the banking system in 2016 as compared to 72.1% in 2008. During this period, the PSB's share in total bank credit has come down from 72.5% to 70.8%. This is in sharp contrast to the performance of PVSBs whose share in NPAs has fallen from over 23% in 2009 to 9.2% in 2016, though their share in credit increased to 24.6% from 21% during the same period. PSBs share a disproportionate and increasing burden in case of NPAs as compared to PVSBs (i.e. share in gross NPAs as compared to share in advances) during the study period (Table 4).

Table 4. Trends in share in Credit & NPA, GNPA & NNPA and GNPA & NNPA to Total Assets ratios –

PSBs and PVSBs

| Year | Share in Credit | | Share in NPA | | GNPA Ratio | | NNPA Ratio | | GNPA to Total Assets Ratio | | NNPA to Total Assets Ratio | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PSBs** | **PVSBs** | **PSBs** | **PVSBs** | **PSBs** | **PVSBs** | **PSBs** | **PVSBs** | **PSBs** | **PVSBs** | **PSBs** | **PVSBs** |
| 2008 | 72.5 | 21 | 72.1 | 23.1 | 1.97 | 2.50 | 1.00 | 1.10 | 1.34 | 1.40 | 0.59 | 0.60 |
| 2009 | 75.3 | 19.3 | 65.8 | 24.8 | 1.97 | 2.90 | 0.94 | 1.30 | 1.30 | 1.60 | 0.6 | 0.70 |
| 2010 | 77.1 | 18.2 | 70.8 | 20.8 | 2.19 | 2.70 | 1.09 | 1.00 | 1.35 | 1.50 | 0.66 | 0.60 |
| 2011 | 76.8 | 16.8 | 76.2 | 18.5 | 2.23 | 2.50 | 1.09 | 0.50 | 1.41 | 1.30 | 0.68 | 0.30 |
| 2012 | 76.4 | 19 | 82.1 | 13.4 | 3.20 | 2.10 | 1.5 | 0.40 | 1.90 | 1.10 | 1.00 | 0.30 |
| 2013 | 76.2 | 19.4 | 85.1 | 10.7 | 3.60 | 1.80 | 2.00 | 0.50 | 2.40 | 1.00 | 1.00 | 0.30 |
| 2014 | 75.9 | 19.8 | 86 | 9.2 | 4.40 | 1.80 | 2.60 | 0.70 | 2.90 | 1.10 | 1.60 | 0.40 |
| 2015 | 74.3 | 21.3 | 85.9 | 10.4 | 5.00 | 2.10 | 2.90 | 0.90 | 3.20 | 1.30 | 1.80 | 0.50 |
| 2016 | 70.8 | 24.6 | 88.2 | 9.2 | 9.30 | 2.75 | 6.10 | 1.35 | 6.00 | 1.80 | 5.70 | 0.90 |
| Source: Own computation | | | | | | | | | | | | |

5.2 GNPAs to Gross Advances Ratio

The GNPA ratio shows increasing trend, which was 1.97% in 2008, increased to 9.30 % in 2016 in respect of PSBs. It shows fluctuating trend in respect of PVSBs and stood at 2.80% in 2016 (Table 4). The mean of GNPA ratio of PSBs (3.76%) is higher than that of PVSBs (2.35%) and similarly the Standard Deviation (SD) of PSBs (2.35) and the Coefficient of Variation (COV) of PSBs (62.48%) are higher than that of PVSBs (SD=0.41, 17.55) (Table 6). The results of one way ANOVA revealed that F=3.152, P=0.095. Since the p-value is greater than 0.05, the hypothesis is accepted (Table 7). Therefore, there is no significant difference in the GNPA ratio between PSBs and PVSBs.

5.3 NNPAs to Net Advances Ratio

The NNPA ratio in respect of PSBs increased substantially from 2008 (1.00%) to 6.10% in 2016 and it shows fluctuating trend in respect of PVSBs and stood at 1.30% in 2016 (Table 4). The mean of NNPA ratio of PSBs (2.14%) is higher than that of PVSBs (0.86%) and similarly the SD of PSBs 1.65% and the COV of PSBs (77.38%) are higher than that of PVSBs (SD=0.36,COV=41.24%) (Table 6). The results of one way ANOVA revealed that F=5.117, P=0.038. Since the p-value is less than 0.05, the hypothesis is rejected (Table 7). Therefore, there is significant difference in between PSBs and PVSBs.

5.4 GNPAs to Total Assets Ratio

It is observed from Table 4 that the GNPA to Total Assets ratio shows increasing trend, which was 1.34% in 2008, increased to 6.00 % in 2016 in respect of PSBs. It shows fluctuating trend in respect of PVSBs and stood at 1.80% in 2016 (Table 4). It can be observed that the mean of GNPA to Total Assets ratio of PSBs (2.42%) is higher than that of PVSBs (1.34%) and similarly the SD of PSBs (1.52) and the COV of PSBs (62.80%) are higher than that of PVSBs (SD=0.26, COV=19.36%) (Table 6). The results of one way ANOVA revealed that F=4.382, P=0.52. Since the p-value is greater than 0.05, the hypothesis is accepted (Table 7). Therefore, there is no significant difference in the GNPA to Total Asset ratio between PSBs and PVSBs.

5.5 Net NPA to Total Assets Ratio

It is observed that the NNPA to Total Assets ratio shows increasing trend, which was 0.59% in 2008, increased to 5.70% in 2016 in respect of PSBs. It shows fluctuating trend in respect of PVSBs and increased from 0.60 in 2008 to 0.90% in 2016 (Table 4). It can be observed that the mean of NNPA to Total Assets ratio of PSBs (1.51%) is higher than that of PVSBs (0.51%) and similarly the Standard Deviation of PSBs (1.63) and the COV of PSBs (107.63%) are higher than that of PVSBs (SD=0.21, COV=40.80%)(Table 6). The results of one way ANOVA revealed that F= 3.355, P=0.086. Since the p-value is greater than 0.05, the hypothesis is accepted (Table7). Therefore, there is no significant difference in the GNPA ratio between PSBs and PVSBs.

5.6 Slippage Ratio

The slippage ratio shows increasing trend in respect of PSBs, increased from 1.70% in 2008 to 7.23% in 2016 and fluctuating trend in respect of PVSBs and stood at 3.06% in 2016 (Table 5). It can be observed that the mean of Slippage ratio of PSBs (3.103%) is higher than that of PVSBs (2.08) and similarly the SD of PSBs (1.70) and the COV of PSBs (54.98%) are higher than that of PVSBs (SD=0.66, COV=31.82%) (Table 6). The results of one way ANOVA revealed that F= 2.795, P=0.114. Since the p-value is greater than 0.05, the hypothesis is accepted (Table7). Therefore, there is no significant difference in the Slippage ratio between PSBs and PVSBs.

Table 5. Trends in Slippage & Net Slippage Ratios, Restructured Standard, Stressed and Impaired Asset Ratios - PSBs and PVSBs

| Year | Slippage Ratio | | Net Slippage Ratio | | RSA Ratio | | Stressed Asset Ratio | | Impaired Asset Ratio | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PSBs | PVSBs | PSBs | PVSBs | PSBs | PVSBs | PSBs | PVSBs | PSBs | PVSBs |
| 2008 | 1.70 | 1.89 | 0.70 | 0.96 | 0.80 | 0.70 | 2.77 | 3.20 | 6.68 | 6.51 |
| 2009 | 1.80 | 2.77 | 0.70 | 1.69 | 3.10 | 1.20 | 5.07 | 4.10 | 8.00 | 4.83 |
| 2010 | 2.00 | 2.94 | 1.20 | 0.96 | 3.80 | 2.00 | 5.99 | 4.70 | 9.50 | 9.67 |
| 2011 | 2.20 | 1.53 | 1.20 | 0.57 | 1.90 | 0.60 | 4.13 | 3.10 | 8.70 | 7.20 |
| 2012 | 2.80 | 1.38 | 1.80 | 0.53 | 3.50 | 1.00 | 6.70 | 3.10 | 11.00 | 6.42 |
| 2013 | 3.10 | 1.48 | 1.90 | 0.67 | 6.10 | 1.70 | 9.70 | 3.50 | 13.40 | 6.90 |
| 2014 | 3.73 | 1.70 | 1.75 | 0.79 | 6.20 | 2.20 | 10.60 | 4.00 | 13.60 | 7.26 |
| 2015 | 3.37 | 2.00 | 1.48 | 1.11 | 7.10 | 2.30 | 12.10 | 4.40 | 15.60 | 7.49 |
| 2016 | 7.23 | 3.06 | 6.01 | 2.20 | 4.90 | 1.80 | 14.20 | 4.55 | 18.35 | 7.54 |
| Source: Own computation | | | | | | | | | | |

5.7 Net Slippage Ratio

The Net Slippage ratio shows increasing trend in respect of PSBs, increased from 0.70% in 2008 to 6.01% in 2016 and fluctuating trend in respect of PVSBs and increased from 0.96% in 2008 to 2.20 % in 2016 (Table 5). It can be observed that the mean of Net Slippage ratio of PSBs (1.86%) is higher than that of PVSBs (1.053%) and similarly the SD of PSBs (1.62) and the

COV of PSBs (87%) are higher than that of PVSBs (SD=0.56, COV=52.70) (Table 6). The results of one way ANOVA revealed that F=2.001, P=0.176. Since the p-value is greater than 0.05, the hypothesis is accepted (Table 7). Therefore, there is no significant difference in the Net slippage ratio between PSBs and PVSBs.

5.8 Restructured Standard Asset Ratio (RSA Ratio)

The Reserve Bank's prudential guidelines on restructuring define a restructured account as one where the bank, for economic or legal reasons relating to the borrower's financial difficulty, grants to the borrower, concessions that the bank would not otherwise consider. RBI has granted exceptional/special regulatory treatment in 2008 and this allowed to the restructured accounts to be classified as standard subject to certain conditions. Restructuring of advances has been one of the important channels used by banks to contain the deterioration in asset quality caused by burgeoning NPAs. The restructured advances are accounts which have seen stress and there is a higher probability of them turning into NPAs. Without restructuring, the GNPAs at system level would have been higher; the exact amount of NPA, however, being dependent of the proportion of restructured advances falling back into NPA category. As such, there was always a concern as how many of these restructured standard accounts will fall back into the NPA category over a period of time. Without restructuring, the GNPAs at system level would have been higher. Hence this ratio considered.

The RSA ratio increased from 0.80% in 2008 to 4.90% in 2016, though maximum reached a level of 7.10% in 2015 in respect of PSBs and increased from 0.70% in 2008 to 1.80% in 2016 in respect of PVSBs with a maximum of 2.30% in 2015 (Table 5).

It can be observed that the mean of Restructured asset (RA) ratio of PSBs (4.16%) is higher than that of PVSBs (1.50%) and similarly the SD of PSBs (2.10) and the COV of PSBs (50.48%) are higher than that of PVSBs (SD=0.64, COV=42.82%)( (Table 6). The results of one way ANOVA revealed that F=13.187, P=0.002. Since the p-value is lesser than 0.05, the hypothesis is rejected (Table 7). Therefore, there is significant difference in the RA ratio between PSBs and PVSBs.

5.9 Stressed Asset Ratio

The stressed assets ratio, which is a ratio of gross NPAs and restructured standard assets together to total advances rose sharply from 2.77% in 2008 to 14.2% in 2016 more particularly from the year 2012 in respect of PSBs due special dispensation allowed by RBI in 2008, where as it was increased from 3.2% to 4.5% in respect of PVSBs during the study period. This indicates PSBs are having more proportion of stressed assets than that of PVSBs (Table 5). It can be observed that the mean of stressed asset ratio of PSBs (6.98) is higher than that of PVSBs (2.94) but the SD of PSBs (3.93) is greater than that of PVSBs (0.85). The COV of PSBs (56.37%) is higher as compared to that of PVSBs (29.12%) (Table 6). The results of one way ANOVA revealed that F=9.034, P=0.008. Since the p-value is less than 0.05, the hypothesis is accepted (Table 7). Therefore, there is significant difference in the stressed asset ratio between PSBs and PVSBs.

Table 6. PSBs and PVSBs - Descriptives

| **Parameters** | | ***N*** | ***Mean*** | ***SD*** | ***Standard Error*** | ***Minimum*** | ***Maximum*** | **Coefficient of Variation** |
|---|---|---|---|---|---|---|---|---|
| GNPA Ratio | PSBs | 9 | 3.762 | 2.35032 | 0.78344 | 1.97 | 9.30 | 62.48 |
| | PVSBs | 9 | 2.35 | 0.41231 | 0.13744 | 1.00 | 1.80 | 17.55 |
| | Total | 18 | 3.0561 | 1.79014 | 0.42213 | 1.00 | 9.30 | 58.58 |
| NNPA Ratio | PSBs | 9 | 2.1356 | 1.65244 | 0.55081 | 0.94 | 6.10 | 77.38 |
| | PVSBs | 9 | 0.8611 | 0.35512 | 0.11837 | 0.40 | 1.35 | 41.24 |
| | Total | 18 | 1.4983 | 1.33201 | 0.31396 | 0.40 | 6.10 | 88.90 |
| GNPA to Total Assets Ratio | PSBs | 9 | 2.4222 | 1.52117 | 0.50706 | 1.30 | 6.00 | 62.80 |
| | PVSBs | 9 | 1.3444 | 0.26034 | 0.08676 | 1.00 | 1.80 | 19.36 |
| | Total | 18 | 1.8833 | 1.19512 | 0.28169 | 1.00 | 6.00 | 63.46 |
| NNPA to Total Assets Ratio | PSBs | 9 | 1.5144 | 1.62996 | 0.54332 | 0.59 | 5.70 | 107.63 |
| | PVSBs | 9 | 0.5111 | 0.20883 | 0.06961 | 0.30 | 0.90 | 40.86 |
| | Total | 18 | 1.0128 | 1.23986 | 0.29224 | 0.30 | 5.70 | 122.42 |
| Slippage Ratio | PSBs | 9 | 3.1033 | 1.70611 | 0.5687 | 1.70 | 7.23 | 54.98 |
| | PVSBs | 9 | 2.0833 | 0.66289 | 0.22096 | 1.38 | 3.06 | 31.82 |
| | Total | 18 | 2.5933 | 1.36088 | 0.32076 | 1.38 | 7.23 | 52.48 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Net Slippage Ratio | PSBs | 9 | 1.8600 | 1.61812 | 0.53937 | 0.70 | 6.01 | 87.00 |
| | PVSBs | 9 | 1.0533 | 0.55505 | 0.18502 | 0.53 | 2.20 | 52.70 |
| | Total | 18 | 1.4567 | 1.24474 | 0.29339 | 0.53 | 6.01 | 85.45 |
| RSA Ratio | PSBs | 9 | 4.1556 | 2.09768 | 0.69923 | 0.80 | 7.10 | 50.48 |
| | PVSBs | 9 | 1.5 | 0.64226 | 0.21409 | 0.60 | 2.30 | 42.82 |
| | Total | 18 | 2.8278 | 2.03262 | 47909 | 0.60 | 7.10 | 71.88 |
| Stressed Assets Ratio | PSBs | 9 | 6.9778 | 3.93341 | 1.31114 | 2.14 | 14.50 | 56.37 |
| | PVSBs | 9 | 2.9444 | 0.85748 | 0.28553 | 1.90 | 4.50 | 29.12 |
| | Total | 18 | 4.9611 | 3.45442 | 0.81421 | 1.90 | 14.50 | 69.63 |
| Impaired Assets Ratio | PSBs | 9 | 11.6478 | 3.85889 | 1.2863 | 6.68 | 18.50 | 33.13 |
| | PVSBs | 9 | 6.6467 | 2.3796 | 0.7932 | 0.83 | 9.67 | 35.80 |
| | Total | 18 | 9.1472 | 4.03644 | 0.9514 | 0.83 | 18.50 | 44.13 |

Table 7. ANOVA for PSBs and PVSBs

| Parameters | | Sum of Squares | df | Mean Square | F | Sig |
|---|---|---|---|---|---|---|
| GNPA Ratio | Between Groups | 8.975 | 1 | 8.975 | 3.152 | 0.095 |
| | Within Groups | 45.552 | 16 | 2.847 | | |
| | Total | 54.527 | 17 | | | |
| NNPA Ratio | Between Groups | 7.309 | 1 | 7.309 | 5.117 | 0.038 |
| | Within Groups | 22.853 | 16 | 1.428 | | |
| | Total | 30.142 | 17 | | | |
| GNPA to Total Assets Ratio | Between Groups | 5.227 | 1 | 5.227 | 4.382 | 0.52 |
| | Within Groups | 19.054 | 16 | 1.191 | | |
| | Total | 24.289 | 17 | | | |
| NNPA to Total Assets Ratio | Between Groups | 4.53 | 1 | 4.53 | 3.355 | 0.086 |
| | Within Groups | 21.603 | 16 | 1.35 | | |
| | Total | 26.339 | 17 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Slippage Ratio | Between Groups | 4.682 | 1 | 4.682 | 2.795 | 0.114 |
| | Within Groups | 26.802 | 16 | 1.675 | | |
| | Total | 31.484 | 17 | | | |
| Net Slippage Ratio | Between Groups | 2.928 | 1 | 2.928 | 2.001 | 0.176 |
| | Within Groups | 23.411 | 16 | 1.463 | | |
| | Total | 26.339 | 17 | | | |
| RSA Ratio | Between Groups | 31.734 | 1 | 31.734 | 13.187 | 0.002 |
| | Within Groups | 38.502 | 16 | 2.406 | | |
| | Total | 70.236 | 17 | | | |
| Stressed Asset Ratio | Between Groups | 73.205 | 1 | 73.205 | 9.034 | 0.008 |
| | Within Groups | 129.655 | 16 | 8.103 | | |
| | Total | 202.861 | 17 | | | |
| Impaired Assets Ratio | Between Groups | 112.55 | 1 | 112.55 | 10.952 | 0.004 |
| | Within Groups | 164.428 | 16 | 10.277 | | |
| | Total | 276.978 | 17 | | | |
| Source: Own computation | | | | | | |

5.10 Impaired Assets Ratio

Write-offs were initially introduced as a tool for banks to manage their tax liabilities**.** But there is evidence of increased use of write-offs by banks to reduce NPAs, which is a pointer to weaknesses in credit management. Therefore considering write-off amount is appropriate to compare NPA performance. The impaired assets ratio, which is a ratio of GNPAs, restructured accounts and cumulative write-offs to total advances rose sharply between 2008 and 2016, from 6.68% to 18.35% in the case of PSBs and it increased from 6.51% in 2008 to 7.54% in 2016 (Table 5). As the granular data on write off available from 2001,cumulative write off considered from the year only.

It can be observed that the mean of impaired asset ratio of PSBs (11.65) is higher than that of PVSBs (6.65) and the SD of PSBs (3.86) is lesser than that of PVSBs (2.37). The COV of PSBs (33.13%) is less as compared to that of PVSBs (35.80%) (Table 6). The results of one way ANOVA revealed that F=10.952, P=0.004. Since the p-value is less than 0.05, the hypothesis is rejected (Table 7). Therefore, there is significant difference in the impaired asset ratio between PSBs and PVSBs.

## 6. Conclusion

The study is descriptive research and analytical study. This study analyzed the trends of NPAs of PSBs and PVSBs in India and found that the NPAs of both the groups have been increasing regularly year by year but the magnitude of NPA is comparatively higher in PSBs than PVSBs. PSBs share a disproportionate and increasing burden in case of NPAs as compared to PVSBs (i.e. share in GNPAs as compared to share in advances) during the study period. Further it analysed the asset quality in terms of GNPA & NNPA to Total Assets ratios, Slippage & Net Slippage ratios, RSA ratio, Stressed Asset and Impaired Asset ratios besides GNPA and NNPA ratios based on the secondary data. ANOVA and F-test are used with the help of SPSS to ascertain the significant difference in various parameters of NPA between PSBs and PVSBs. It was observed that there is significant difference between PSBs and PVSBs in respect of NNPA ratio, RSA ratio, Stressed Asset and Impaired Asset ratios and there is no significant difference in respect of GNPA ratio, GNPA & NNPA to Total Assets ratios, Slippage and Net Slippage ratios, Thus the results indicate the asset quality of PVSBs is better than that of PSBs during the study period, though the difference in respect of some of the parameters is not significant.

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