A Comprehensive Study of NPAs of Scheduled Commercial Banks

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Abstract: *Indian Economy has seen sharp increase in credit facilities (Bank Loans) mainly to drive the economy's growth rate after the Global Financial Crisis (GFC) in 2007-08. This lending streak let the economy grow as expected and at the same time brought newer problems. Mostly, Credit was granted to borrowers without proper credit appraisal. Added to this post-credit sanction monitoring was also not so stronger. This led to the increase in NPAs (Non –Preforming assets) of banks. NPA is a dual edged sword. On one side it reduces the income generating capacity of Banks i.e., the assets of the banks (Loans) do not yield interest income and on the other it reduces the profitability of banks by increasing the requirement of higher provisioning which is made from profits before interest and tax. At present, NPA situation is worse than expected by the RBI. In the recent Financial Stability Report (June, 2017) RBI has warned that gross NPA ratio could rise to as high as 10.2% of the total loans by March 2018 from 9.6% in March 2017. RBI also directed banks to device suitable mechanisms to deal with NPAs. Though various legal and systematic schemes were launched, they have hardly done anything that is laudable.*
In this context, the proposed research paper tries to explore in detail the root causes of NPAs, its impact on profitability i.e., Return on Assets and Return on Equity. It also focuses on the dynamics of provisions with regard to various categories of Nonperforming assets. It is a sincere attempt to analyse various schemes launched by the government to tackle NPAs and provide suggestions or recommendations based on the study.
Key Words: *NPAs, Profitability, Provisioning and Bad loans*

I. Introduction:

Bank is a financial intermediary. The two main functions of a bank are accepting deposits from general public and lending to individuals, corporate and government. The deposits of the public are liability of a bank as the bank ought to pay them back along with interest either on maturity or on demand. Similarly, loans are assets to the bank as they yield interest to bank which is the primary source of income and livelihood for a bank. Generally the interest yielded by loans is far greater than the interest expended by the bank on deposits. This difference between what banks earns from assets (loans) and what bank pays for liabilities (deposits) is the interest margin i.e., profit for the bank. Generally, the more the banks lend the more profitable they become. This motivates a bank to lend vigorously in order to increase profitability. However, banks have to make sure that the borrowers pay interest and principal amount promptly (Debt servicing) so that the profitability is not affected and at the same time the quality of assets (loans) remain good. Incase the borrowers do not service the loan promptly due to various reasons the asset fails to yield the income i.e. it does not perform and becomes a non-performing asset (NPA).NPAs reduce income generating capacity of banks and ultimately erodethe profits.

When debt servicing is affected the asset quality deteriorates. Banks have to constantly keep an eye on the quality of assets. If debt servicing is intact the asset is considered as standard otherwise it is classified based on IRAC (Income Recognition and Asset Classification) norms. The classification is as follows.

1. Standard assets: Assets that generate revenue without any sign of sickness.
2. Sub-standard assets: Assets that do not yield interest income for a period of 12 months.
3. Doubtful assets:
   (a) Doubtful 1 –NPA for a further period of 12 months i.e. for first 24 months.
   (b) Doubtful 2 – NPA for 24 months to 36 months
   (c) Doubtful 3 –NPA for over 36 months
4. Loss assets: Debt servicing is completing nil and the borrower is in no situation to pay the loan back.

NPAs are divided into two categories namely Gross NPA and Net NPA.

GNPA: It reflects the quality of the loans made by the banks. It is sum total of all the loan assets that are classified as NPA on a balance sheet date. It includes Sub-standard, doubtful and loss assets.

NNPA: It reflects the actual burden of banks. It is calculated as follows

NNPA= GNPA- (Balance in interest suspense account + claims received + part payment received + total provisions held).

In Indian context, NPAspresent a serious concern on banks. This is evident from the recently released financial stability report of RBI.The Financial Stability Report released by the RBI on 30th June, 2017 has highlighted that the asset quality also deteriorated due to increase in NPAs. In this context, reducing NPAs has become the primary goal of any bank. In this paper, we try to analyse the NPA composition among Scheduled Commercial Banks (SCBs), concentration in priority and non-priority sectors and extent of provisioning made by banks.

II. Literature review:

NPA is a two edged sword which affects bank's profitability as well as earning capacity. NPAs are negative financial indicators (Paul, Bose, & Dhalla, 2011) that affects not only domestic financial market but also international financial markets that are closely related to each other. ShailinderSekhon& Jasmine Kaur (2015) in their paper concluded that NPA adversely impact liquidity and also future income earning capacity. DeeptiSahoo and Pulak Mishra (2012) have examined the structure, conduct and performance relationships in Indian banking sector. They found out that strong inter-linkages exist amongst structure of the market, conduct of banks and their financial performance. Mehta.L, Malhotra.M (2014) in their paper found that flow of NPA is more in public sector banks and less in private sector banks. Recession was considered as a one of the reason for the continuous increase in the NPAs. Dr. A Dharmendran (2012) in his paper on NPAs found that the impact of Gross and Net NPA during the period 2001-8 was very high. K.K. Siraj and P. Sudarsanan Pillai (2013) in their paper studied about the relative efficiency of different bank groups ranked banks based on the indicators of NPAs. Kaur K. and Singh B. (2011) in their study on Non-performing assets of public and private sector banks (a comparative study) found that NPAs badly affect profitability. They also opined that wilful default, defective lending and ineffective recovery will lead to more NPAs. Karunakar (2008) has studied the norms and guidelines for making the whole banking system competitive. He also opined that better credit appraisal is one of the effective methods to reduce NPAS. Rai (2012) concluded that the defaulters never had the fear of bank taking action to recover their dues. This reason is there was no effective legal framework to safeguard the real interest of banks.

Objectives:
1. To study the composition of NPAs among Scheduled Commercial Banks (SCBs) of India and analyse it.
2. To examine the concentration of NPAs with regard to Priority sector and non-priority sector lending and also study the extent of provisions created by Public Sector Banks (PSBs) with respect to NPAs.
3. To study the impact of NNPA on profitability of Indian Public Sector Banks (PSBs) i.e. ROE & ROA.

III. Research Methodology:

The research is purely based on secondary data. Data have been collected from RBI website and Handbook of statistics on Indian Economy. The main purpose of the analysis is to study the trend, impact and intensity of NPAs in the Indian banking sector with special reference to PSBs.
The tools that are used in the analysis are
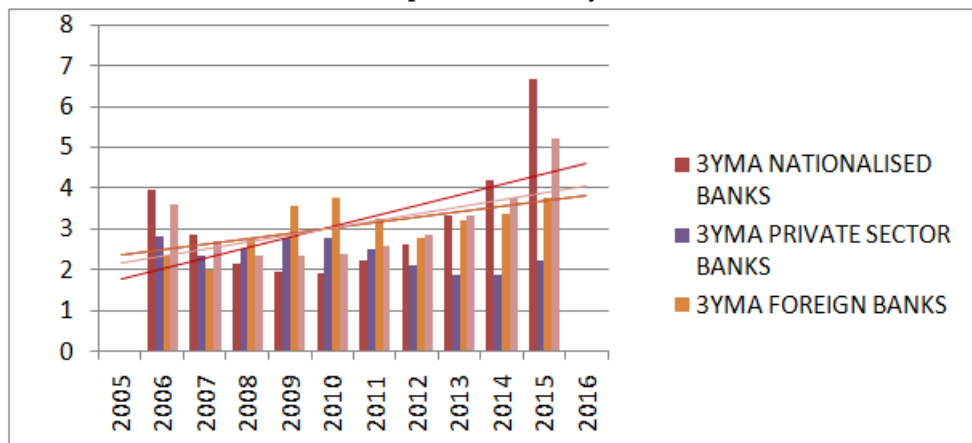(a) Regression analysis (b) Correlation (c) Trend analysis

Data analysis:

Table. 1: Composition of Gross Non-Performing Assets Ratio (GNPA) of SCBs

Year	Nationalised	3 YMA**	Private	3 YMA	Foreign	3 YMA	SCBs*	3YMA
2005	5.36	-	3.83	-	3.05	-	4.92	-
2006	3.81	3.95	2.41	2.81	2.12	2.36	3.35	3.60
2007	2.69	2.85	2.19	2.36	1.92	1.99	2.52	2.71
2008	2.06	2.17	2.47	2.53	1.92	2.74	2.26	2.36
2009	1.75	1.95	2.92	2.79	4.37	3.55	2.31	2.36
2010	2.03	1.92	2.99	2.80	4.36	3.78	2.51	2.39
2011	1.97	2.22	2.48	2.52	2.61	3.24	2.35	2.60
2012	2.67	2.63	2.09	2.11	2.76	2.80	2.95	2.84
2013	3.24	3.33	1.77	1.88	3.04	3.22	3.23	3.34
2014	4.09	4.20	1.78	1.88	3.86	3.37	3.83	3.78
2015	5.26	6.68	2.10	2.24	3.20	3.75	4.27	5.20
2016	10.69	-	2.83	-	4.20	-	7.49	-

[Source: RBI- Database on Indian Economy; * SCBs = Scheduled Commercial Banks] [**3YMA = Three Year Moving Average]
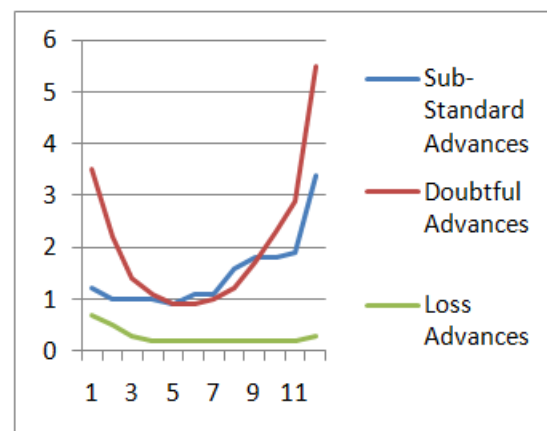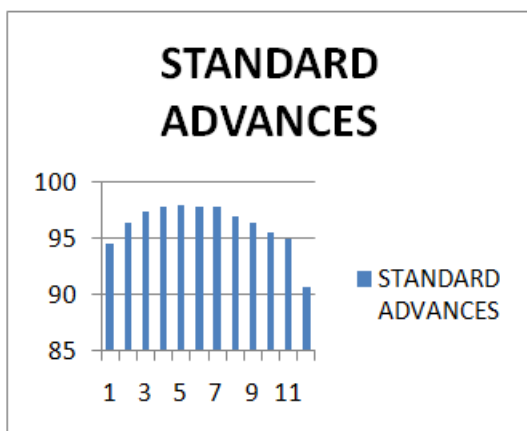
Graph 1: Trend analysis

- With reference to the table (1) and graph (1) above, in case of nationalized banks the 3 year moving average shows that the concentration of NPAs declined during 2006-10 and from 2011 they started to shoot up.
- In case of private sector banks the movement of NPAs is more or less stable. From 2006 to 2014. From 2014 it showed an increasing trend.
- In case of foreign banks there was a fluctuating trend. Interestingly, the ratio of NPA in foreign banks is greater than that of private sector banks.
- The nationalized banks dominated during 2007-2011 period with least NPA ratio among all SCBs.
- Overall GNPA of SCBs is showing am increasing trend.

Table. 2: NPA classification of SCBs (in Billion)

Year	Standard Advances		Sub-Standard Advances		Doubtful Advances		Loss Advances		Gross NPAs		Total Advances
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
2005	8379	94.6	110	1.2	308	3.5	59	0.7	476	5.4	8856
2006	10926	96.4	113	1.0	246	2.2	55	0.5	414	3.7	11340
2007	14262	97.4	143	1.0	198	1.4	48	0.3	389	2.7	14651
2008	17786	97.8	173	1.0	192	1.1	40	0.2	405	2.2	18191
2009	22378	98.0	203	0.9	206	0.9	41	0.2	450	2.0	22828
2010	26735	97.8	288	1.1	254	0.9	58	0.2	599	2.2	27335
2011	32718	97.8	350	1.1	332	1.0	65	0.2	747	2.2	33465
2012	38255	97.0	623	1.6	490	1.2	60	0.2	1173	3.0	39428
2013	43957	96.4	815	1.8	761	1.7	68	0.2	1645	3.6	45601
2014	49887	95.6	958	1.8	1216	2.3	99	0.2	2273	4.4	52159
2015	53382	95.0	1054	1.9	1630	2.9	100	0.2	2785	5.0	56167
2016	52875	90.7	2005	3.4	3232	5.5	163	0.3	5400	9.3	58275

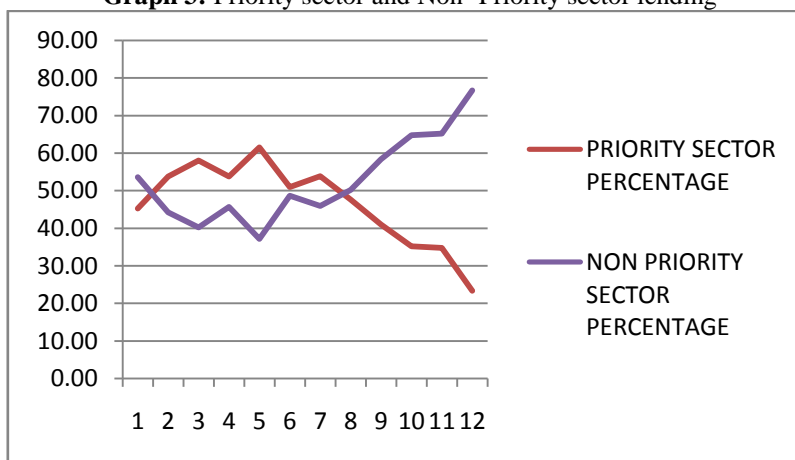[Source: RBI- Database on Indian Economy]

Graph 2 (a) and 2(b)

With reference to table (2) and graph 2 (a) & (b) above,the proportion of Standard advances to total is steadily coming down since 2009. This indicates that more provisions are being made for those assets which are turning into non- standard assets. If we look at the non- standard assets (below), it is evident that the concentration of sub-standard, doubtful and los assets is increasing and this presents a serious threat to the banking system as a whole. It is also evident from the data that the RoA of PSBs is showing a declining trend as the percentage of Standard assets coming down.

Table. 3: Priority sector and Non- Priority sector lending

Sector	Priority Sector		Non Priority Sector		Public Sector		Total
Year	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount
2005 (1)	215.36	45.22	254.94	53.53	5.92	1.24	476.22
2006 (2)	222.36	53.75	182.79	44.18	8.55	2.07	413.70
2007(3)	225.19	57.96	156.03	40.16	7.32	1.88	388.54
2009(4)	242.01	53.75	205.28	45.59	2.97	0.66	450.26
2008(5)	248.74	61.48	150.07	37.10	5.74	1.42	404.56
2010(6)	304.96	50.89	291.14	48.58	3.14	0.52	599.24
2011(7)	401.86	53.82	342.35	45.85	2.43	0.32	746.64
2012(8)	557.80	47.57	588.26	50.17	26.56	2.27	1172.62
2013(9)	672.76	40.91	960.31	58.39	11.55	0.70	1644.61
2014(10)	798.99	35.16	1472.35	64.79	1.30	0.06	2272.64
2015(11)	966.11	34.69	1815.98	65.21	2.59	0.09	2784.68
2016(12)	1258.09	23.30	4141.48	76.70	34.82	0.64	5399.57

[Source: RBI- Database on Indian Economy]

Graph 3: Priority sector and Non- Priority sector lending

Priority sector includes lending to specific sectors like agriculture and allied activities, micro and small enterprises (MSME), Retail housing, Education and loans to weaker sections. Priority sector dominated and received most of the bank's credit till the year 2008. During this period (2005-08) the credit flow to priority sector showed an increasing trend and flow to non-priority sector showed a decreasing trend. During this period, retail lending and lending to agriculture dominated bank's loan portfolio. Post 2008, there was a reversal of trend. As seen in the graph, priority sector advances started to decline and advances to non-priority sector increased. One reason may be the Global financial crisis that made banks to lend more to private and non-priority sector to drive economy's growth. Year 2016 showed the lowest exposure to priority sector and highest exposure to non-priority sector. To tackle the situation, the present government has come up with various schemes to increase priority sector loan portfolio. Schemes such as MUDRA, Prime Minister Awas Yojana (PMAY), Start-up India and Stand-up India were launched to increase credit facilities to Priority sector.

Provisioning in NPA

Provisioning is generally made for sub-standard, doubtful and loss assets. It is as explained as follows

- Sub-standard assets: 15% in case of secured advance and 25% for unsecured on net outstanding.
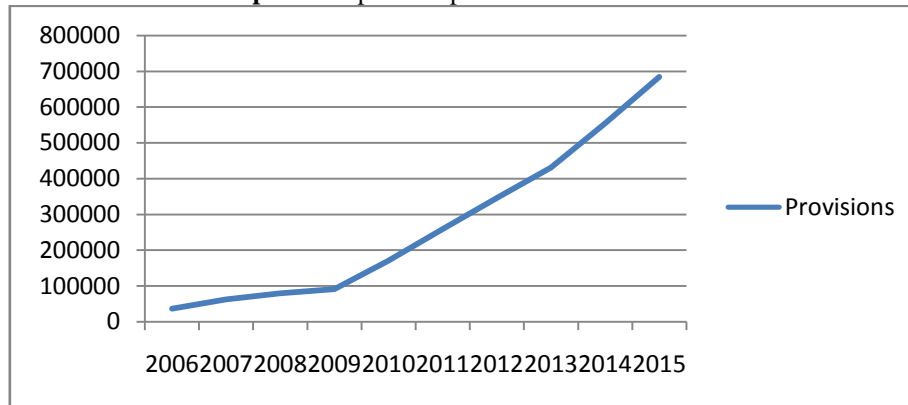
- Doubtful asset 1: 25 % for secured and 100% for unsecured on net outstanding.
- Doubtful 2: 40% for secured and 100 of unsecured on net outstanding.
- Doubtful 3: 100% of net outstanding dues.
- Loss asset: 100% of net outstanding dues.

Table. 4: Provisions of SCBs (in Millions)

Year	Provisions
2006	37026
2007	62930
2008	80077
2009	91617
2010	171425
2011	259559
2012	345716
2013	430630
2014	554503
2015	683756
2016	1538840

[Source: RBI- Database on Indian Economy]

Graph 4: Graphical representation of Provisions

The above table (4) and graph (4) shows the trends in provisions of NPAS. The extent of provisions depends on asset classification. The data (earlier section) shows that the percentage of standard assets out of total advances is continuously declining since 2009. This caused increased in provisioning towards Non – performing assets. We can see a steep increase in provisions from 2009. Ultimately, such a huge amount of provisioning will reduce banks' profitability and also erodes its capital structure.

Impact of NPA on Profitability of PSBs

Table. 5: GNPA& NNPA ratios of PSBs

YEAR	GNPA TO Gross Advances	GNPA TO Total Assets	NNPA TO Net Advances	NNPA TO Total Assets	ROA	ROE
2005 (1)	5.4	2.7	2.1	1	0.95	17.24
2006 (2)	3.7	2.1	1.3	0.7	0.88	15.39
2007(3)	2.7	1.6	1.1	0.6	0.92	16.08
2008(4)	2.2	1.3	1	0.6	1.00	17.13
2009(5)	2	1.2	0.9	0.6	1.03	17.94
2010(6)	2.2	1.3	1.1	0.7	0.97	17.47
2011(7)	2.2	1.4	1.2	0.7	0.96	16.90
2012(8)	3	1.9	1.5	1	0.88	15.33
2013(9)	3.6	2.4	2	1.3	0.80	13.24
2014(10)	4.4	2.9	2.6	1.6	0.50	8.48
2015(11)	5	3.2	2.9	1.8	0.46	7.76

| 2016(12) | 9.3 | 6 | 5.7 | 3.5 | -0.20 | -3.47 |

[Source: RBI- Database on Indian Economy]

In order to examine the impact of NNPA ratioon ROA & ROE, two regression analysesare performed.
Regression equations of ROA & ROE on NNPA are written as
$Y_1 = \alpha + \beta_1 X_+ \varepsilon$ .... (1)
$Y_2 = \alpha + \beta_2 X_+ \varepsilon$ .... (2)
Where, Y_1 = ROA; Y_2 = ROE; X = NNPA Ratio
Here ROA is dependent variable and GNPA & NNPA are explanatory variables. A regression analysis will be done and F – test is used to test the significance at 0.05 levels of significance.
Durbin – Watson statistic is also calculated to check auto-correlation in the time series data.

Case 1:
H_0 = There is no significant relationship between NNPA & ROA
H_1 = There is significant relationship between NNPA & ROA
Regression of ROA on NNPA
$ROA = \alpha + \beta_1 NNPA + \varepsilon$

Table. 6

R	R^2	Adj R^2	F- Value	P - Value	Correlation	Durbin – Watson Statistic
0.973	0.947	0.942	181.11	9.87E-08	-0.973	1.48

Regression equation*: ROA = 1.262 - 0.2559 NNPA + ε ....* *
The regression statistics show the R^2 at 0.947 which shows that model is good. The Adjusted R^2 is 0.942 which indicates that 94% of variation in dependent variable i.e. ROA is explained by the explanatory variable i.e. NNPA and not by any chance factors. The model is tested with F- test and it is significant. The correlation between ROA & NNPA is -0.973 which shows very high negative correlation i.e. there is inverse relationship between ROA and NNPA. Finally, the Durbin – Watson statistic which was used to check auto –correlation is 1.48 which indicates that there was no auto-correlation in the data used for analysis. Durbin - Watson statistic lies between 0 and 4 where 0 indicates positive auto-correlation and 4 indicates negative auto- correlation. Value around 2 means no auto-correlation. Considering the F –test and probability value (p-value), *H_0 is rejected and H_1 is accepted* and thus, there is significant relationship between NNPA & ROA and NNPA affects ROA negatively.

Case 2:
H_0 = There is no significant relationship between NNPA & ROE
H_1 = There is significant relationship between NNPA & ROE

Table. 7 showing Regression of ROE on NNPA

R	R^2	Adj R^2	F- Value	P - Value	Correlation	Durbin – Watson Statistic
0.966	0.934	0.927	141.11	3.21E-07	-0.966	1.287

Regression equation*: ROE = 22.053 - 0.4.493 NNPA + ε ....* *
The regression statistics show the R^2 at 0.934 which shows that model is good. The Adjusted R^2 is 0.927 which indicates that 92.7% of variation in dependent variable i.e. ROE is explained by the explanatory variable i.e. NNPA and not by any chance factors. The model is tested with F- test and it is significant. The correlation between ROE & NNPA is -0.966 which shows very high negative correlation i.e. there is inverse relationship between ROE and NNPA. Finally, the Durbin – Watson statistic which was used to check auto –correlation is 1.287 which indicates that there was no auto-correlation in the data used for analysis. Considering the F –test and the probability value (p- value)*H_0 is rejected and H_1 is accepted* and thus, there is significant relationship between NNPA & ROE and NNPA affects ROE negatively.

IV. Conclusion:

The research concludes that there is an increasing trend in GNPA of all the SCBs. The standard assets are declining and the provisions are increasing. The increasing provisions puts additional burden on banks' profits and if profits are not sufficient to write off bad loans then the capital is used to write off. This erodes capital structure of the bank they need to be recapitalized. This happened with India and recently the Finance Minister, Mr. ArunJaitley has announced a capital infusion of Rs. 2.11 lakh core to recapitalize Public Sector Banks.

It is also found from the research that NNPA has direct impact on ROA & ROE. The correlation between NNPA and ROE & ROA is perfectly negative. Regression analysis also states that NNPA is a strong explanatory variable of decreasing ROE & ROA.

NPA reduces Operational, Financial and Managerial efficiencies of a bank by increasing administrative costs, reducing profits and consuming more time in settling and follow-up. The solution to tackle NPA is not easily found. The government, RBI and banks have to device suitable mechanism to reduce NPA and prevent slippages as soon as possible otherwise, the entire banking system will be worst affected. We need to appreciate the Government for initiating various schemes like DRTs, Lok Adalats, SARFAESI Act (2002), Insolvency & Bankruptcy code (IBC, 2016).

Finally, it is to be understood that the elimination of NPAs entirely is not possible, but suitable mechanism can be developed proactively to restrict it to a predetermined level in such a way that its effect on the system is the slightest.

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