Non-Performing Assets and Profitability : A Comparative Analysis of Public and Private Banks in India

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Abstract:

Banking sector plays a crucial role in sustaining growth of an economy. However, Non-performing Assets (NPA) of banks have become one of the major concerns for the banking sectors across developing countries including India in recent times. Accumulating NPA is leading to lower profitability and is having a dampening impact on efficiency of banks. This paper studies the trends and patterns of NPA in private and public banks operating in India and shows a rising trend in NPA during the years 2000 to 2015 in both public and private sector banks. The results suggest that there is a significant difference in the relationship of NPA with profitability in private and public sector banks operating in India. Further, the results are also suggestive of private banks' efficiency in managing NPA better.

Keywords : Non-performing Assets, Profitability, Private Banks, Public Banks

1. INTRODUCTION

Banking is one of the basic instruments of economic growth. A strong and developed banking sector is a pre-requisite for a flourishing economy. Apart from performing an important role in corporate governance and mitigating the information gap between investors and borrowers, banks in many capacities contribute to the economic development of a country. Banks provide basic financial services and function within the economic, political, legal jurisdiction of a country. Thus, banks are the primary financier of a national economy. Banks might also operate in an international environment which determines the profit and expansion opportunities of banks, interest rates and exchange rates.Thus, efficiency of the banking system becomes crucial for an economy.

1.1 Banking Sector reforms in India: A General Overview

The year 2019 marks the 50th anniversary of bank nationalization in India which is one of the biggest structural reforms introduced in the financial sector during the post-Independence period. The primary objective of bank nationalisation was aimed to break the nexus between banking sector and the big business houses who were using bank finance for their narrow, selfish ends. Nationalisation of banks also aimed at rapid expansion of banking network to the unbanked regions, especially rural areas and deliver institutional credit to the farmers, small businesses and other weaker sections of society, many of whom were caught in a vicious trap of usury. This ensured balanced flow of credit to all the productive sectors, across regions and social groups of the country. Nationalisation of banks also provided stability to the banking system by preventing bank failures and speculative activities.

However, banking sector in the India underwent a paradigm shift with financial sector reforms of the 1990s in particular. The first phase of such financial-sector reforms was mostly guided by recommendations of the Committee on Financial Systems which helped to unleash the potential of banking in India. With state policies shifting towards liberalisation and privatisation in the last three decades and the entry of new private sector banks, the dominance of the Public Sector Banks (PSBs) has been on a decline. The share of PSBs in the total assets of the scheduled commercial banks, which was over 80 per cent in 1997-98 declined to around 70 per cent by 2007-08 and further to below 66 per cent in 2017-18. Public ownership in the PSBs has also been diluted over time, with four out of the nineteen currently operating PSBs having government equity of less than 75 per cent with that of largest PSB, the State Bank of India, at below 58 per cent. Branch expansion in the rural areas has also suffered with the share of total rural branches falling from 50 per cent in 2000 to 37 per cent in 2010 and further to 36 per cent in 2018. A snapshot of the banking sector reforms since liberalization is given in Box 1 as follows:

Box1: BANKING SECTOR REFORMS IN INDIA

LIBERALIZATION IMPERATIVES	
•	Sharp reduction in CRR and SLR.
•	Dismantling of administered interest rates.
•	Market determined pricing for govt. securities.
•	Measures to strengthen risk management through recognition of different components of risk, assignment if risk weights to various assets, norms on connected lending, risk concentration, application of mark-to market principle for investment portfolio, and limits on deployment of fund in sensitive activities.

STIMULUS FROM DOMESTIC FORCES	
•	Granting of operational autonomy and bread-basing ownership in public-sector banks by allowing them to raise capital up to 49 per cent of equity.
•	Enhanced transparency and disclosure norms to facilitate market discipline.
•	Introduction of pure inter-bank call money market, auction-based repos and reverse repos for short term liquidity management, facilitation of improved payments and settlement mechanism.

STIMULUS FROM EXTERNAL FORCES	
•	Introduction of norms on risk-based capital standards, accounting conventions, income recognition, assets classification, provisioning and exposure.
•	Transparent norms for entry of new private-sector banks, liberalized entry for foreign banks and insurance companies, permission for foreign investment in banks through Foreign Direct Investment (FDI), permission to banks to diversify their product portfolios and business activities.
•	Setting up of Lok-Adalats debt recovery tribunals, assets reconstruction companies, settlement-advisory committees, corporate – debt- restricting mechanisms etc, for quicker loan recovery. The promulgation of the Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFASI) Act and its subsequent amendment to ensure creditor rights.
•	Introduction of CAMELS supervisory rating system, move towards risk-based supervision, consolidated supervision of financial conglomerates, and strengthening of off-site surveillance through technology driven control returns.
•	Strengthening corporate governance, enhanced 'due diligence' on important shareholders, and 'fit and proper' tests for directors.
•	Institution of Credit Information Bureau for information sharing on defaulters as also other borrowers.
•	Establishment of Clearing Corporation of India Limited (CCIL) to act as the central counterparty for facilitating payments and settlements system relating to fixed income securities and money market instruments.
•	Setting up of INFINET as the communication backbone for the financial sector, introduction of Negotiated Dealing System (NDS) for screen-based trading in government securities and introduction of a Real Time Gross Settlement System (RTGS).
Source: Adapted from Mohan (2005). 'Financial Sector Reforms in India: Policies and Performance Analysis' Economic and Political Weekly, 40(12): 1106-21	

1.1.2 Non-Performing Assets: A Broad Overview

In India, the concept of **Non-Performing Assets (NPA)** came into existence with the financial sector reforms following the recommendations of the Narasimham Committee, 1991. Broadly, Non-Performing advance is defined as an advance where payment of interest or repayment of instalment of principal (in case of term loans) or both remains unpaid for a certain period. The definition of NPAs however, has been modified over time. According to the Narasimham committee report (1991), those assets (advances, bills discounted, overdrafts, cash credit etc.) for which the interest remain due for a period of four quarters (180 days) should be considered as NPAs. Subsequently this period was reduced and from March 1995 onwards the assets for which the interest has remained unpaid for 90 days are considered as NPAs. Again, with effect from March 31, 2004 a Non-Performing Asset is considered to be a loan or an advance where:

a) Interest and/or installment of principal remains overdue for a period of more than 90 days in respect of a term loan

b) The account remains 'out of order' for a period of more than 90 days, in respect of an overdraft / Cash Credit.

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

d) Interest and/or installment of principal remains overdue for two harvest seasons but for a period not exceeding two and a half years in the case of an advance granted for agricultural purpose.

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

Such Non-Performing Assets have become one of the major concerns for banks in India. The piling up of Non-Performing Assets, willful defaults and bank frauds have continued over the last five years. NPA reduction in the very recent past has happened through ₹ 4 trillion plus debt write-offs effected between 2014-15 and 2017-18, which have inflicted record net losses on the PSBs, despite posting healthy operating profits. Bank frauds have also skyrocketed with many NPAs now being classified as frauds. The earning capacity and profitability of the banks are highly affected because of the existence of such NPAs. A high level of NPAs suggests large number of credit defaults that affect the profitability and net-worth of banks.With the recent demonetization in India which is considered to be a major reform in banking sector, impact of NPA on banks is likely to be greater. Hence management of Non-performing assets have become a major challenge across public and private banks in India. Thus, research on Non-performing assets of banks and their management across public and private sector banks is much needed. This paper aims at understanding the impact of NPA on the profitability of banks in India. The paper further draws a comparison between Public Sector Banks and Private Sector Banks in aspects of NPA management in the past few years and determining the short-term effect on NPA levels of the banks in the post demonetization era. Thus, the objectives of the study are as follows:

2. OBJECTIVES OF THE PAPER

The paper aims at understanding:

- The trends in NPA and profitability of Private Sector Banks and Public Sector Banks for the period 2000-2015 in India.
- To compare Private Sector and Public Sector banks in terms of managing NPA.
- To find short run effects of demonetization on NPA levels of banks.

The paper is organized as follows. Section 3 puts forth the existing literature briefly. Section 4 describes the database used in the paper and methodology for analysis. Section 5 analyses the paper and Section 6 concludes the paper.

3. A BRIEF REVIEW OF LITERATURE

NPAs are considered as an important parameter to judge the financial stability and growth of the banking sector (Bhatia, 2007). Literature suggests that policies of liberalization, deregulation and enabling environment of comfortable liquidity at a reasonable price do not automatically translate themselves into enhanced credit flow in an economy.

Thus, there are several financial and macro-economic factors that determine the accumulation of NPA and the complex process of recovery of the same. Puri & Misra (2014) study the changes of gross NPA in Indian banking sector and suggest that NPA was 7.2 percent at end of March 2004 which declined to 2.5 percent at end of March 2011. More than four-fifth of NPAs is found to be in public sector banks, where NPA ratio reached almost 12 percent by September 2016. Thus, the public sector banks need to manage it more carefully in terms of their operations, credit appraisal and lending process, Mishra (2013). According to Economic Survey 2016-17 at least 13 of the banks accounting for approximately 40 percent of total loans are severely stressed by NPAs. Although public sector banks have recorded some improvements in profitability, efficiency (in terms of intermediation costs) and asset quality in the 1990s (Srivastava and Bansal, 2012) PSBs continue to have higher interest rate spreads but at the same time earn lower rates of return, reflecting higher operating costs. Analysing secondary data for a period of five years from 2007-2012 Srivastava and Bansal (2012) suggests the banks to take timely action against degradation of good performing assets.

Goven(1993) suggests that there may be only a marginal difference in the NPAs of banks that lend to priority sectors vis-à-vis that of those lending to private corporate sectors. The study further suggests that given the differences in these areas, it is imperative that banks need to be guided by fairness based on economic and financial decisions rather than system of conventions.Bakshi(1998) suggests that with the introduction of prudential norms to regulate NPAs by RBI, NPAs are showing declining trend in the banking sector in recent times. However, due to heavy slippage of standard accounts to NPA category the overall position continues to deteriorate (Bidani, 2002). The main reasons responsible for such a situation include slow economic and industrial growth, slump in the capital market, financial indiscipline, willful defaults by the borrowers, overburdened and slow judiciary, competition faced by local industries from the multi-nationals, lack of support to the borrowers from the banks at the time of the need, etc. Further,the monumental hurdles in the legal process of loan recovery impose hardship on the lender. The unpaid debts and NPA also deprive other deserving borrowers to access the much-needed credit(Visaria,2005). Ineffective supervision of loan accounts, lack of managerial and technical expertise on part of borrowers ultimately deteriorates the qualitative aspect of lending by banks leading to increasing NPAs (Rai,2012).

Thus, the problem of accumulation of Non-performing assets in banks and the burden of such assets on the financial health of an economy need to be addressed. This paper tries to investigate into the trends and patterns of NPAs across public and private sector banks from 2000-2015 and draws some insights in managing the same.

4. DATABASE AND METHODOLOGY

The paper is based on secondary data.Data used for the purpose of analysis have been collected from Reserve Bank of India database, Handbook of Statistics on Indian Economy and from the Annual reports of the banks considered in the study.

The Public and Private sector Banks studied in the paper were selected based on purposive sampling method.Among the banks listed with the stock exchange, top five and bottom five public and private sector banks in India were taken for the study on the basis of market capitalization[1]. The period under consideration is 2000 to 2015.

The following selected sample of banks are considered for the purpose of analysis.

PUBLIC SECTOR BANKS:

TOP FIVE:

- State Bank of India (SBI)
- Bank of Baroda (BOB)
- Canara Bank
- Punjab National Bank (PNB)
- Central Bank OF India

PRIVATE BANKS:

TOP FIVE:

- HDFC Bank
- ICICI Bank
- Kotak Mahindra
- Axis Bank
- Indusind Bank

BOTTOM FIVE:

- Andhra Bank
- Dena Bank
- Bank of Maharashtra
- United Bank of India (UBI)
- Punjab and Sindh Bank

BOTTOM FIVE:

- Karnataka Bank
- South Indian Bank
- Lakshmi Vilas Bank
- Jammu &Kashmir Bank
- Dhanalaxmi Bank

The paper uses simple statistical tools for the purpose of analysis. Charts, diagrams and Trend Analysis has been used to observe and compare the Gross NPA over these years (2000 to 2015) between Private and Public Banks. Correlation[2] Analysis has been used to find the relationship between NPA and Net Profit of banks.

5. ANALYSIS

5.1: Trends of NPA in Public and Private Banks from 2000-2015:

This section examines the trend of Non-performing Assets in Public and Private Banks and compares between the two. The tables 1.1 and 1.2 show the total Gross NPA data of Private Banks and Public Banks from 2000 to 2015 and compares between the top five and bottom five banks respectively. The figures 1.1 and 1.2 shows the data corresponding to these tables.

YEARS	TABLE 1.1: TREND IN GROSS NPA IN TOP FIVE PUBLIC BANKS AND TOP FIVE PRIVATE BANKS (in Rupees Crores)															
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PUBLIC	520810	600649	296033	283728	273870	237117	196331	194265	214628	245478	301983	383896	641657	873540	1114316	1235946
PRIVATE	6752	10441	58844	58033	39352	38691	34160	58229	98126	134794	136383	128639	142423	155517	183217	244434

Source : Reserve Bank of India , Time-Series Publications

YEARS	TABLE 1.2: TREND IN GROSS NPA IN BOTTOM FIVE PUBLIC BANKS AND BOTTOM FIVE PRIVATE BANKS (in Rupees Crores)															
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PUBLIC	159724	57121	57338	53605	50216	44741	40159	30696	26078	29687	39182	47916	69913	108053	210050	273067
PRIVATE	9380	11027	26247	14961	15672	14982	13493	14378	12545	14716	16256	16762	18805	25568	30842	53647

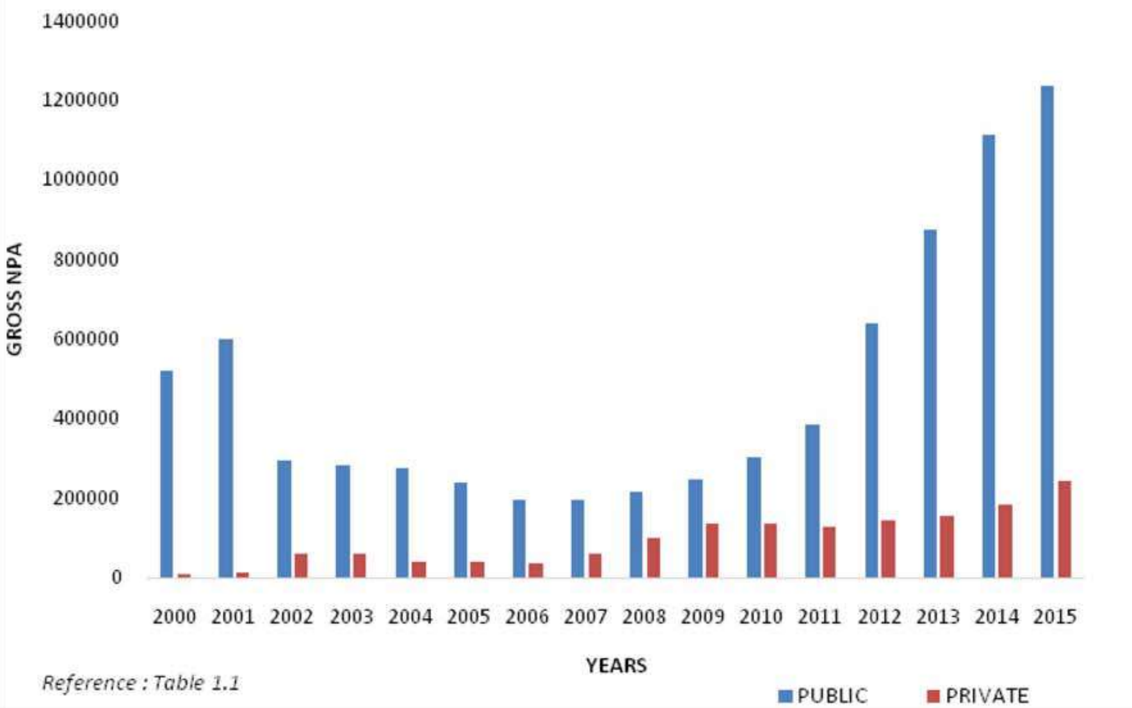
Source : Reserve Bank of India , Time-Series Publications

[1]Market Capitalization, or Market Cap is the market value of a publicly traded company's outstanding shares. Companies with large Market Capitalization tend to have more assets, capital and higher revenues than those with smaller market capital. A company with large market capital is not necessarily better than any company: it is simply an indication of the size of the company.

[1]**Statistical Formulae** used in this paper are mentioned below:

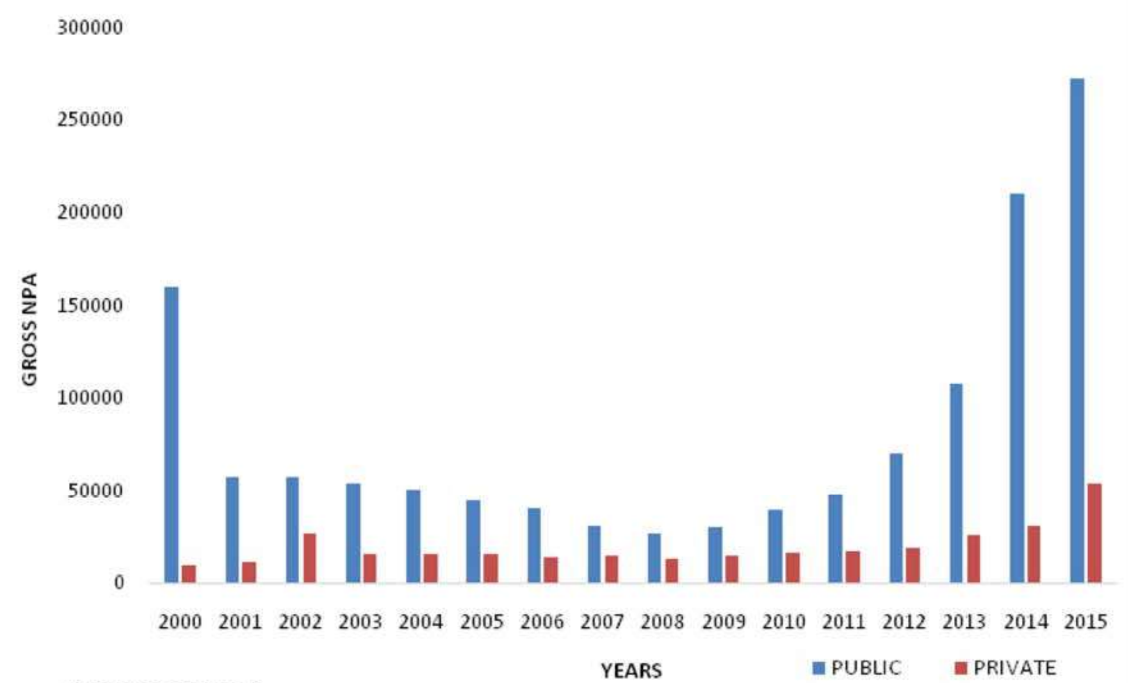
- Mean of x ($\bar{x}$) $= \frac{1}{n}\sum_{i=1}^{n} x_i$
- Variance of x $(\sigma_x^2) = \frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^2$
- Cov(y)$= \frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})$ coefficient between x and y $(r_{x\,y}) = \frac{cov(x,y)}{\sigma_x \sigma_y}$

FIG 1.1: COMPARISON BETWEEN TOP 5 PUBLIC AND PRIVATE BANKS



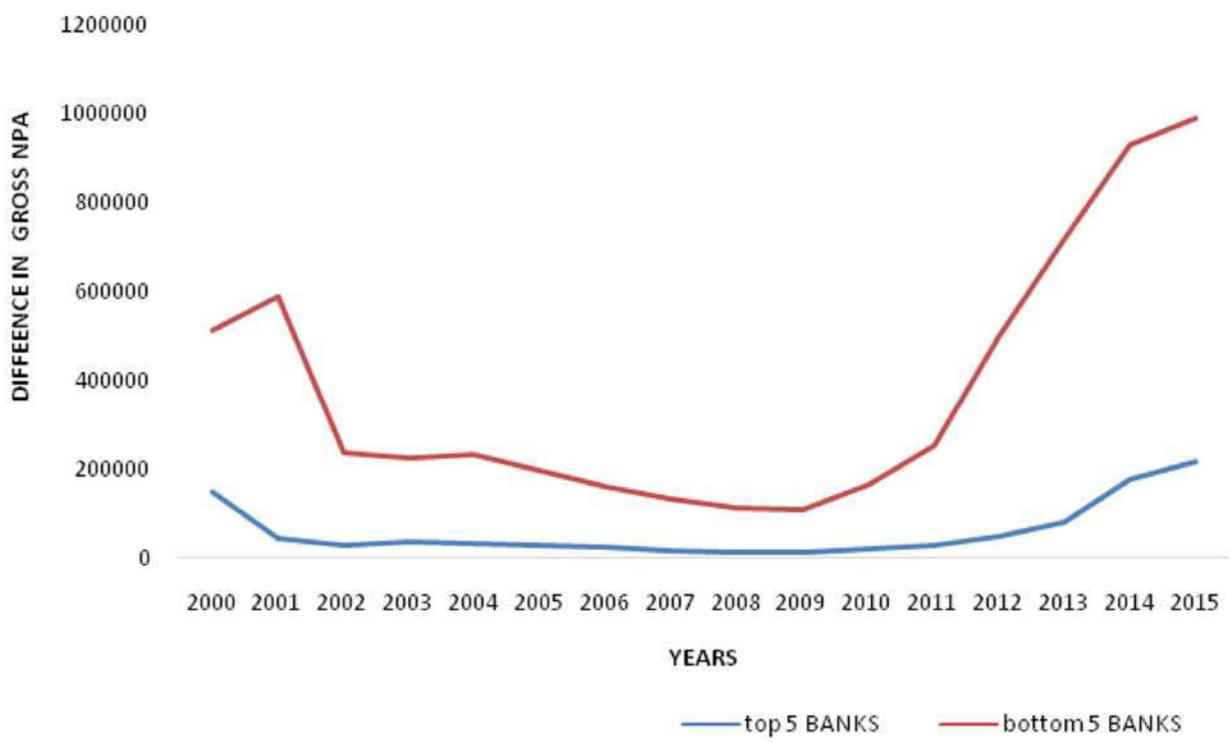
Reference : Table 1.1

FIG 1.2: COMPARISON BETWEEN BOTTOM 5 PUBLIC AND PRIVATE BANKS



Reference : Table 1.2

FIG 1.3: COMPARATIVE NPA TRENDS BETWEEN TOP AND BOTTOM BANKS



Source: Reserve Bank of India, Time-Series Publications (for reference see Table A.3)

A comparative analysis of table 1.1 and 1.2 shows that from the initial years (2000-2001) Gross NPA in Public Sector banks was considerably high. However, a downward trend is noticed in following six to seven years (2002-2007). There is also a rapid rising trend from 2008 to 2015. On the other hand, Private Sector banks faces a very low Gross NPA in the initial years (2000-2001) followed by a similar trend as of the Public sector banks after 2008.

The figures 1.1 and 1.2 reveal that there has been a quantum difference in NPA between Public and Private sector banksduring the period under study. The public banks had much higher NPA than the private banks. This is true for the top banks as well as the bottom banks.Though the gap in gross NPA decreased in 2002-2007, for public and private banks it rose rapidly after 2008 revealing similar pattern for top as well as bottom banks.As we compare between the top and the bottom banks as shown in Figure 1.3, the bottom banks always had higher NPA than top banks for the entire period under consideration.

5.2: Correlation between NPA and Profitability of Banks:

This section tries to find out the magnitude of association between NPA and Profitability of Public and Private Banks. As the measure of NPA, **Gross NPA** has been considered. Gross NPA is an advance which is considered irrecoverable, for bank has made provisions, and which is still held in banks' books of account. The earning capacity and profitability of the bank are highly affected due to this NPA problem of NPAs and their resolution.As a measure of profitability, **Net Profit** of the banks has been taken.Net profit, also referred to as the bottom line, net income, or net earnings is a measure of the profitability of a venture after accounting for all costs and taxes. It is the actual profit, and includes the operating expenses that are excluded from gross profit. It provides the final picture of how profitable a company is after all expenses including interest and taxes have been taken into account.

Here Gross NPA has been taken to be the independent variable and Net Profit as the dependent variable and correlation coefficient has been calculated and represented in tables 2.3 and 2.4.

TABLE 2.3: CALCULATIONFOR CORRELATION BETWEEN GROSS NPA AND NET PROFIT IN PUBLIC BANKS

NAME OF THE BANKS		VARIANCE	SQRT	COV	r
SBI	GROSS NPA(X)	31288564316	176885.7	-8213582572	-0.355782584
	NET PROFIT(Y)	17033749192	130513.4		
BOB	GROSS NPA(X)	1686320333	41064.83	-11714946.14	-0.011248047
	NET PROFIT(Y)	643259537.1	25362.56		
CANARA	GROSSNPA(X)	919862871.6	30329.24	-283639157.4	-0.216799933
	NET PROFIT(Y)	1860762718	43136.56		
PNB	GROSS NPA(X)	11938083976	109261.5	-1180484470	-0.268769422
	NET PROFIT(Y)	1615943648	40198.8		
CBI	GROSS NPA(X)	1098719527	33146.94	-187935676.4	-0.351906874
	NET PROFIT(Y)	259582924	16111.58		
ANDHRA	GROSS NPA(X)	479817864.1	21904.75	-60320685.86	-0.221970167
	NET PROFIT(Y)	153910025.3	12406.05		
DENA	GROSS NPA(X)	94269747.63	9709.261	-10377978.8	-0.112959829
	NET PROFIT(Y)	89537540.92	9462.428		
BANK OF MAHA	GROSS NPA(X)	201253967.3	14186.4	-9633449.266	-0.093652912
	NET PROFIT(Y)	52574676.4	7250.84		
UBI	GROSS NPA(X)	397145895.5	19928.52	-88289337.07	-0.414169454
	NET PROFIT(Y)	114422202.1	10696.83		
PUNJAB SIND	GROSS NPA(X)	348873945.5	18678.17	8258196.559	0.223079658
	NET PROFIT(Y)	3928094.729	1981.942		

Source: Author's calculation based on RBI database
(See Table A.1 as reference)

TABLE 2.4: CALCULATION FOR CORRELATION BETWEEN GROSS NPA AND NET PROFIT IN PRIVATE BANKS

NAME OF THE BANKS		VARIANCE	SQRT	COV	r
HDFC	GROSS NPA(X)	110248253.4	10500	311231796.8	0.9568577
	NET PROFIT(Y)	959624765.3	30978		
ICICI	GROSS NPA(X)	1707196527	41318	1195241657	0.8730915
	NET PROFIT(Y)	1097762451	33132		
KOTAK	GROSS NPA(X)	15470486.07	3933.3	20292773.67	0.8790966
	NET PROFIT(Y)	36479300.31	6039.8		
AXIS(UTI)	GROSS NPA(X)	136425992.6	11680	258741394.8	0.9418389
	NET PROFIT(Y)	553199098.9	23520		
NAME OF THE BANKS		VARIANCE	SQRT	COV	r
INDUSIND	GROSS NPA(X)	1215306.559	1102.4	4839336.891	0.8257886
	NET PROFIT(Y)	28258437.31	5315.9		
KARNATAKA	GROSS NPA(X)	3515244.34	1874.9	2582579.945	0.670168
	NET PROFIT(Y)	4224590.734	2055.4		
SOUTH IND	GROSS NPA(X)	1148411.84	1071.6	575879.5664	0.3313569
	NET PROFIT(Y)	2630108.902	1621.8		
LAXMI VIL.	GROSS NPA(X)	1783458.777	1335.5	287817.1133	0.5913751
	NET PROFIT(Y)	132814.0586	364.44		
J.K. BANK	GROSS NPA(X)	34414421.68	5866.4	4797023.473	0.2646077
	NET PROFIT(Y)	9549884.496	3090.3		
DHANALAXMI	GROSS NPA(X)	11833581.46	3439.997306	-830271.582	-0.265933919
	NET PROFIT(Y)	823714.4336	907.5871493		

Source: Author's calculation based on RBI database

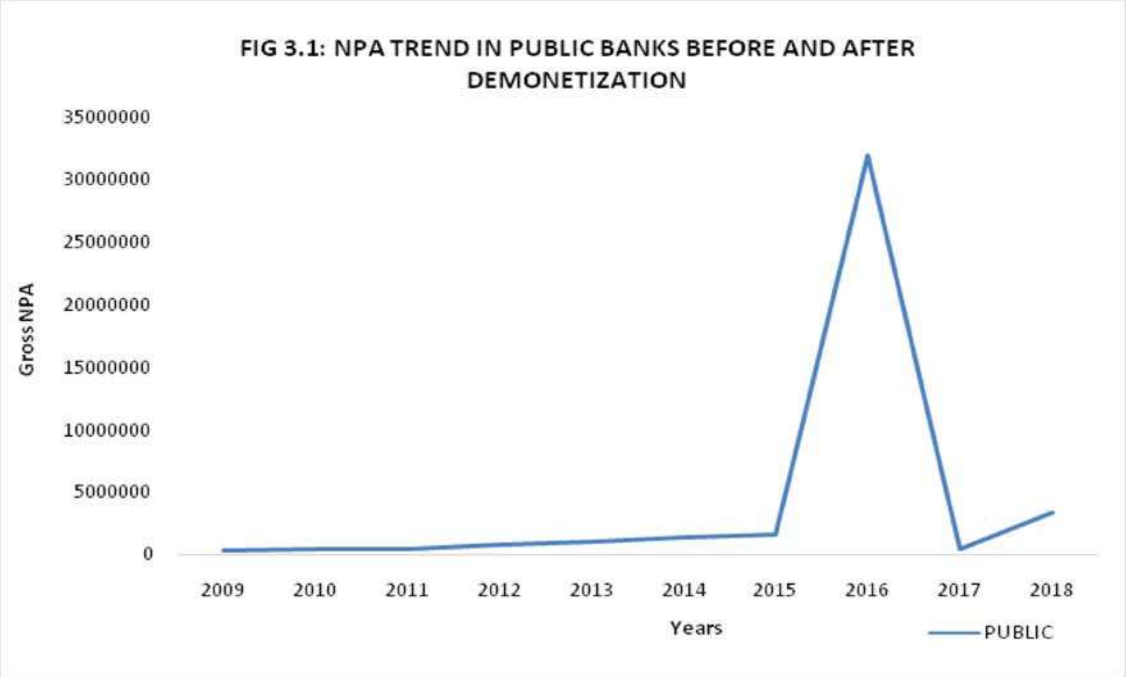
(See Table A.2 as reference)

In table 2.3 we can see that there is a negative correlation between Gross NPA and Net profit in the Public Banks, except Punjab & Sind Bank. This means as Gross NPA of these banks rises, Net Profit declines.While table 2.4 indicates a presence of a positive relationship between Gross NPA and Net profit in Private Banks except Dhanalaxmi Bank. This implies that Net Profit rises as Gross NPA increases. This is an interesting result in the relationship between Gross NPA and Net Profit for the private and public sector banks. Behind such a result, there may be various significant factors. Importantly, efficient management of NPA by the private sector banks while lack of the managerial efficiency of the public banks might play an important determining factor of such a result.Furthermore, as revealed in figure 1.1 and 1.2, Public Banks have NPA a few times higher than that of the Private Banks and at the same time due to this high NPA their profits dry up. Public Banks are backed by government funding. The employees do not play role in safeguarding the interests of the bank since their services are secured. Adding to the above, there are many unions and associations which come forward to protect the interests of their members and sometimes the management becomes helpless in taking stringent action against erring employees.Public sector banks lend more on government sponsored schemes and they are in a position to lend mandatorily under these schemes since targets are fixed for them each year. At the branches, normally in order to meet targets, the branch managers attend the proposals under the above category at the end of the financial year and they do not take time in scrutinizing the creditworthiness of the borrowers and their loan eligibility. Many a time a borrower who do not have any business address obtain loan from the bankers as business loans. There is also poor infrastructure for post disbursement follow up. The borrowers are rarely reminded about their dues. More than 80 percent of the borrowers never come forward to remit the money unless persuaded by the bankers No importance is given to recovery mechanism and banks do not have exclusive recovery officers. Even though the banks can employ outsourced debt recovery agents for recovery purposes, they rarely come forward to utilize such facilities permitted by the central bank in this connection. Ultimately, on account of bad debts provisions, commercial banks lose major portion of profit earned from various sources towards writing off bad loans and they portray poor performance among the public and other credit rating agencies.

For Private Banks, on the other hand the management is very strict in implementing various supervisory measures when it comes to recovery of loans which is the prime source of income for the bank.In case of targets for loans, they take timely steps and find the right borrowers and the chances of accounts becoming non performing are found to be very less.They are competent in sending their marketing and sales personnel to potential sources like multinational companies and other organizations to capitalize potential borrowers who earn reasonable salaries in those companies.However, like public sector banks, they are often defrauded by big corporate houses. As compared to public sector banks, the level of non-performing assets is found to be low in private sector banks on account of proper identification of the borrowers at the pre sanction level; better post disbursement follow-up and filing of suits with courts in the case of non-repaying borrowers.

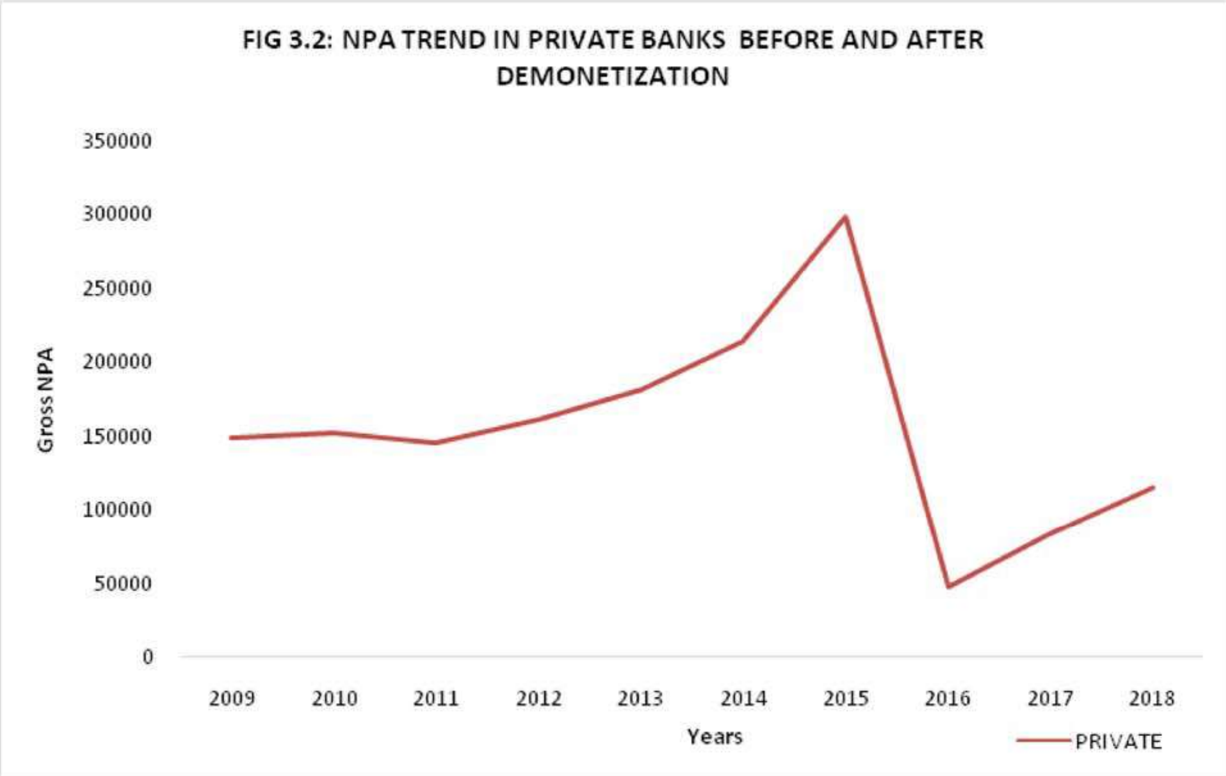
In sum, the gross NPA of public banks have been traditionally higher as compared to that of the private banks. Interestingly higher NPAs of public banks have a dampening impact on their profitability while for private banks, profitability is not hampered due to NPAs. Such a result is possibly on account of difference in managing NPAs across public and private banks. However, there can be several other factors responsible for the same. Further research on the issue is hence called for.

5.3: Investigating short run effects of demonetization on NPA levels of the banks:



Source: Reserve Bank of India, Time-Series publications

This section investigates into the trends in Non Performing Assets across public and private banks and the relation with Net Profit of the banks immediately after Demonetization[3]. On 8 November 2016, the Government of India announced the demonetization of all Rs.500 and Rs.1000 banknotes of the Mahatma Gandhi Series. It also announced the issuance of new Rs.500 and Rs.2000 bank notes in exchange for the demonetized bank notes. The government claimed that the action would curtail the shadow economy and reduce the use of illicit and counterfeit cash to fund illegal activity and terrorism. Though the prime objective of demonetization was not to eliminate the NPAs but such a policy is likely have an impact on profitability of banks.This paper tries to reflect on the NPA trend of Banks pre and post demonetization.



Source: Reserve Bank of India, Time-Series publications

From figures fig 3.1 and fig 3.2, it is quite evident that Gross NPA level dropped in 2016 but gradually it took a steep upward trend during 2017.Immediately after announcement of demonetization, people were willing to pay in cash to repay old loans. Post-demonetization, people had to deposit the old rupee denominations in the banks. This has surged the deposits with the banks. There has been an increase in payments by defaulters in unsecured portfolios, agriculture and SME loans. Going by the trend, some corporate borrowers paid up in cash towards the end of December'16. However, due to the huge amount of deposits by people into banks immediately after demonetization banks faced a major challenge to mobilize these deposits for those projects which could provide them a handsome rate of return and avoid accumulation of idle funds. Faulty evaluation of projects in such a situation consequently increased the number of defaulters which in future lead to further increase in NPA.The table 3.1 shows the correlation between Gross NPA and Net Profit in Public and Private Banks after demonetization.

[3]Demonetization is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency: The current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins. Sometimes, a country completely replaces the old currency with new currency. Demonetization is undertaken by nations for a number of reasons; viz.to combat inflation, to combat corruption and crime (counterfeiting, tax evasion), to discourage a cash-dependent economy, to facilitate trade etc.

TABLE 3.1: CORRELATION BETWEEN GROSS NPA AND NET PROFIT IN PUBLIC AND PRIVATE BANKS AFTER DEMONETIZATION

PUBLIC BANKS	CORRELATION (r)	PRIVATE BANKS	CORRELATION (r)
SBI	-0.991428198	HDFC	0.995876494
BOB	-0.749577327	ICICI	-0.796863582
CANARA	-0.263551528	KOTAK	0.995452098
PNB	-0.927132999	AXIS(UTI)	-0.999311951
CBI	-0.999148228	INDUSIND	0.987334952
ANDHRA	-0.996643964	KARNATAKA	-0.852360094
DENA	0.846829828	SOUTH IND	-0.85210762
BANK OF MAHA	0.500561696	LAXMI VIL.	-0.983800932
UBI	0.414156842	J.K. BANK	-0.576885117
PUNJAB SIND	-0.945950708	DHANALAXMI	0.987640836

Source: Author's calculation based on RBI database

(See Table A.3 as reference)

Table 3.1 suggests that after demonetization most of the banks (both Public and Private Banks) show negative correlation between NPA and Net Profit. This implies that with increasing NPA, the net profit of banks, both private and public decreased with demonetization. However, as the analysis is done with the available data for a short time period of 2016-2018, Further research on this area is required to provide any conclusive evidence.

6. CONCLUSION:

The Reserve Bank of India states that as compared to other Asian countries and the US, the non-performing asset figures in India is alarming. Historically, Indian public sector banks have been poor on credit recovery, mainly because of very little legal provision governing foreclosure and bankruptcy, lengthy legal battles, sticky loans made to government public sector undertakings, loan waivers and priority sector lending. Further, Indian banks have to make a 100 per cent provision on the amount not covered by the realizable value of securities in case of "doubtful" advance, while in some countries it is 50 to 75 per cent. A study titled "Solvency Analysis of the Indian Banking Sectors" by the Associated Chambers of Commerce and Industry of India reveals that on an average 24 per cent rise in net non-performing assets have been registered by 25 public sector and commercial banks during the second quarter of the 2009 as against 2008. According to the Reserve Bank of India, "Reduction of NPAs in the Indian banking sector should be treated as a national priority item to make the system stronger, resilient and geared to meet the challenges of globalization."

This paper attempted to understand the trend of NPA in public sector banks vis-a vis the private sector banks for the period 2000-2015. The results suggest that public banks have NPAs much higher than the private banks and at the same time are less efficient in managing them. This acts as the main reason for the rising NPA and falling profit in the Public sector Banks.Therefore, the public banks must pay special attention towards the NPA management and take appropriate steps to arrest the creation of new NPAs, besides making recoveries of the existing NPAs. Further, demonetization in India has led to a fall in NPA in both public and private banks with immediate effect in 2016, though a rising trend could be seen post 2017. This leaves scope for further research.

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TABLE A.1: GROSS NPA AND NET PROFIT OF PUBLIC SECTOR BANKS

NAME OF THE BANKS		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOP FIVE BANKS:																	
SBI	GROSS NPA(X)	152462	158749	154858	135061	126672	116570	96281	99982	128373	157140	195349	253263	396765	511894	616054	567253
	NET PROFIT(Y)	205155	160425	243162	310500	368100	430452	440667	45413	67291	91212	91661	82645	117073	141050	108912	131016
BOB	GROSS NPA(X)	3897	41857	44893	41679	39799	33218	23901	20921	19814	18429	24007	31525	44648	79826	118759	162614
	NET PROFIT(Y)	50277	27466	54593	77278	96700	67684	82696	2718	14355	22272	30583	42417	50070	44807	45411	33984
CANARA	GROSSNPA(X)	23344	21503	21124	24747	31268	23706	17926	13735	12726	21680	25903	31374	40318	62602	75702	130400
	NET PROFIT(Y)	23605	28510	74140	101889	133801	110950	134322	14208	15650	20724	30214	40259	32827	28721	24382	27026
PNB	GROSS NPA(X)	312677	346010	41398	49801	46701	37413	31383	33907	30215	25069	32144	43794	87196	134658	188801	256949
	NET PROFIT(Y)	40814	46364	56239	84220	110869	141012	143931	15401	20488	30909	39054	44335	48842	47477	33426	30616
CBI	GROSS NPA(X)	28430	32530	33760	32440	29430	26210	26840	25720	23500	23160	24580	23940	72730	84560	115000	118730
	NET PROFIT(Y)	15069	4646	16330	30552	61811	35741	25742	4980	5502	5712	10582	12524	5330	10150	-2628	6064
BOTTOM FIVE BANKS:																	
ANDHRA	GROSS NPA(X)	45678	4701	5241	5807	6154	4409	4369	3970	3724	3681	4879	9956	17980	37145	58576	68765
	NET PROFIT(Y)	12059	12119	20227	40299	46350	5201	4855	5379	5756	6531	10458	12671	13447	12891	4356	6384
DENA	GROSS NPA(X)	13996	19282	19960	16165	14840	11475	9494	7445	5726	6208	6420	8422	9565	14525	26160	43930
	NET PROFIT(Y)	6287	-26612	1136	11419	20419	610	730	2016	3598	4227	5113	6116	8031	8104	5517	2655
BANK OF MAHA	GROSS NPA(X)	7167	8766	9064	9575	9545	9619	9441	8203	7663	7984	12098	11737	12970	11376	28599	64021
	NET PROFIT(Y)	9014	4514	14541	2202	30455	1771	508	2718	3284	3752	4396	3304	4308	7595	3860	4507
UBI	GROSS NPA(X)	15203	14111	12155	9590	7642	7264	7440	8170	7610	10204	13723	13558	21764	29638	71180	65529
	NET PROFIT(Y)	10124	1914	1904	30519	31508	3002	2046	2673	3190	1847	3224	5240	6325	3919	-12134	2560
PUNJAB SIND	GROSS NPA(X)	77680	10261	10918	12468	12035	11974	9415	2908	1355	1610	2062	4243	7634	15369	25535	30822
	NET PROFIT(Y)	6144	1326	2304	443	889	-711	1083	2185	3824	4312	5088	5262	4513	3392	3006	1213

Source: Reserve Bank of India, Time-Series Publications

TABLE A.2 : GROSS NPA AND NET PROFIT OF PRIVATE BANKS

NAME OF THE BANKS		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TOP FIVE BANKS :																	
HDFC	GROSS NPA(X)	1218	1468	2229	2655	3356	4392	5089	6578	9070	19881	18168	16943	19994	23346	29893	34384
	NET PROFIT(Y)	1200	2101	2970	3876	5095	6656	8708	11415	15902	22449	29487	39264	51671	67263	84784	102159
ICICI	GROSS NPA(X)	946	4092	50130	50274	30476	27704	22226	41261	75795	96493	94807	100343	94753	96078	105058	150947
	NET PROFIT(Y)	1053	1611	2583	12062	16371	20052	25401	31102	41577	37581	40250	51514	64653	83255	98105	111754
KOTAK	GROSS NPA(X)	NA	NA	NA	151	179	279	377	2776	4392	6892	7673	6035	6142	7581	10594	12372
	NET PROFIT(Y)	NA	NA	NA	NA	787	849	1182	1414	2937	2761	5611	8182	10851	13607	15025	18660
AXIS(UTI)	GROSS NPA(X)	1935	2258	2822	2290	2747	3111	3780	4187	4946	8978	13180	2659	18063	23934	31464	41102
	NET PROFIT(Y)	509	861	1341	1922	2783	3346	4851	6590	10710	18154	25145	33885	42422	51794	62177	73578
INDUSIND	GROSS NPA(X)	2653	2623	3663	2663	2594	3205	2688	3427	3923	2550	2555	2659	3471	4578	6208	5629
	NET PROFIT(Y)	561	405	507	902	2621	2101	368	382	751	1483	3503	5773	8026	10612	14080	17937
BOTTOM FIVE BANKS:																	
KARNATAKA	GROSS NPA(X)	2231	3209	3735	5380	5985	5018	4151	3873	3796	4432	5496	7022	6847	6389	8359	9442
	NET PROFIT(Y)	407	454	911	1101	1332	1471	1760	1770	2417	2667	1671	2046	2461	7481	7110	4515
SOUTH IND	GROSS NPA(X)	2626	2570	3359	3458	3283	3661	3278	3212	1885	2606	2110	2303	2672	4339	4326	6435
	NET PROFIT(Y)	256	415	624	723	843	87	509	1041	1516	1948	2338	2926	4017	5023	5075	3072
LAXMI VIL.	GROSS NPA(X)	967	1469	2197	2111	2168	1875	1248	1312	1380	1441	3252	1578	3077	4599	5465	4546
	NET PROFIT(Y)	264	267	302	342	410	33	225	176	253	503	307	1011	1070	916	597	1323
J.K. BANK	GROSS NPA(X)	2380	2430	2370	2530	2870	3172	3702	5018	4852	5593	4623	5188	5166	6438	7834	27641
	NET PROFIT(Y)	1202	1676	2598	3377	4063	1151	1768	2745	3600	4098	5124	6152	8033	10551	11825	5086
DHANALAXMI	GROSS NPA(X)	1176	1349	14586	1482	1366	1256	1114	963	632	644	775	671	1043	3803	4858	5583
	NET PROFIT(Y)	113	68	101	150	175	-216	95	161	285	575	233	261	-1156	26	-2519	-2415

Source: Reserve Bank of India, Time-Series Publications

TABLE A.3: COMPARATIVE NPA TRENDS IN TOP AND BOTTOM BANKS

YEARS	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
top 5 BANKS	150344	46094	31091	38644	34544	29759	26666	16318	13533	14971	22926	31154	51108	82485	179208	219420
bottom 5 BANKS	514058	590208	237189	225695	234518	198426	162171	136036	116502	110684	165600	255257	499234	718023	931099	991512

Source: Reserve Bank of India, Time-Series Publications

TABLE A.4: GROSS NPA AND NET PROFITS OF PUBLIC AND PRIVATE SECTOR BANKS AFTER DEMONETIZATION

PRIVATE BANKS		2016	2017	2018	PUBLIC BANKS		2016	2017	2018
HDFC	GROSS NPA(X)	4392.83	5885.66	8606.97	SBI	GROSS NPA(X)	98172.8	112342.99	223427.46
	NET PROFIT(Y)	12296.21	14549.64	17486.73		NET PROFIT(Y)	9950.65	10484.1	-6547.45
ICICI	GROSS NPA(X)	26221.25	42159.38	53240.18	BOB	GROSS NPA(X)	56480	42719	40521.04
	NET PROFIT(Y)	9726.29	9801.09	6777.42		NET PROFIT(Y)	-5395.54	1383.14	-2431.81
KOTAK	GROSS NPA(X)	2838.11	3578.61	3825.38	CANARA	GROSSNPA(X)	31637083	34202.04	47468.47
	NET PROFIT(Y)	2089.78	3411.5	4084.3		NET PROFIT(Y)	-2812.82	1121.92	-4222.24
AXIS(UTI)	GROSS NPA(X)	6087.51	21280.48	34248.64	PNB	GROSS NPA(X)	55818.33	55370.45	86620.05
	NET PROFIT(Y)	8223.66	3679.28	275.68		NET PROFIT(Y)	-3974.4	1324.8	-12282.82
INDUSIND	GROSS NPA(X)	776.82	1054.57	1704.91	CBI	GROSS NPA(X)	22721	27251.33	38130.7
	NET PROFIT(Y)	2286.45	2867.89	3605.99		NET PROFIT(Y)	-1117.67	-2439.1	-5104.9
KARNATAKA	GROSS NPA(X)	1180.4	1501.59	2376.07	ANDHRA	GROSS NPA(X)	11443.63	17339.98	2812436
	NET PROFIT(Y)	415.29	452.26	325.61		NET PROFIT(Y)	539.84	174.33	-3412.53
SOUTH IND	GROSS NPA(X)	1562.36	1149.01	1980.3	DENA	GROSS NPA(X)	8560.49	12618.73	16361
	NET PROFIT(Y)	333.27	392.5	334.89		NET PROFIT(Y)	-1923.15	-863.62	-935.32
LAXMI VIL.	GROSS NPA(X)	391.25	640.19	2694.21	BANK OF MAHA	GROSS NPA(X)	10385.85	17188.72	18433.23
	NET PROFIT(Y)	180.24	256.07	-584.87		NET PROFIT(Y)	-1145.65	-1372.51	100.64
J.K. BANK	GROSS NPA(X)	4368.61	6000.01	6006.7	UBI	GROSS NPA(X)	9471.01	10951.99	16552.11
	NET PROFIT(Y)	416.03	-1632.29	202.72		NET PROFIT(Y)	-1454.45	219.51	-281.96
DHANALAXMI	GROSS NPA(X)	315.6	469.31	469.3	PUNJAB SIND	GROSS NPA(X)	4229.05	6297.59	7801.65
	NET PROFIT(Y)	-209.45	12.38	-24.87		NET PROFIT(Y)	1888.51	1040.79	933.92

Source: Reserve Bank of India, Time-Series Publications