

Impact Of Demonetization On The Economic Parameters That Affect The Growth Of Nonperforming Asset Of Indian Banks

Sanjoy Laha¹, Rabin Mazumder²

1. Research Scholar,

UEM Kolkata, West Bengal, India ,

2. Head of the Department of Bachelor of Business Administration,
Institute of Engineering and Management, West Bengal, India.

ABSTRACT

The demonetization decision by the government of India affected almost all service sectors of Indian economy, out of which the banking sectors were affected the most. Due to demonetization bulk amount of old currency notes of INR 500 and INR 1000 were deposited to banks; that not only increased the capital base of banks, but those un-used cash boosted the liability of loan disbursement. Again the reducing interest rates, providing account opening facility and issuing loan to the depositors by banks without judging their repayment ability resulted a chance of increasing number of defaulters and the value of nonperforming assets. Considering the scenario the present research work tried to focus on the impact of demonetization towards the movement of nonperforming assets of Indian banks. A multivariate regression analysis was performed by considering income, expenditure and net profit ratio as internal and the percentage change of India's GDP, inflation and foreign exchange rate as external independent variables towards the net nonperforming assets changes of Indian public and private sector banks as dependent variable from financial year 2016-17 to 2018-19. Though the outcome of the study revealed that demonetization helped to reduce the nonperforming asset values in short run but in long run it would stimulate the growth of nonperforming assets.

Keywords: Demonetization, nonperforming assets, GDP, inflation, foreign exchange.

1. INTRODUCTION

The main focus behind the decision of demonetization of high value denomination notes of INR 1000 and INR 500 on November 08, 2016 by the honourable prime minister of India Mr. Narendra Modi was to eradicate black money, reduce corruption and introduce cashless economy. The decision has affected almost all service sectors of Indian economy of which banking sector is affected most.

Banks are considered as the backbone of country's economy. The main functions of banks are to deposit the hard earned money of the customers and provide interest of approximately 4 – 6% on the savings account. They also provide money in the form of loan at the interest rate of approximately 7 – 8% to the borrowers as per the economic need. The differential amounts of 3 – 4% deployed by banks are their earnings. During the period of demonetization, a bulk amount of old denomination notes were deposited to banks which include 8.58 lakh crores of demonetised INR 500 notes and 6.86 lakh crores of demonetized INR 1000 notes¹. The sudden increase of capital base of banks creates a burden. They have to cut down the interest rate and thus the profitability has been affected. Again to reduce the burden of huge capital base,

¹ Retrieved from <https://economictimes.indiatimes.com/news/economy/finance/after-almost-two-years-of-counting-rbi-says-99-3-of-demonetised-notes-returned/articleshow/65589904.cms?from=mdr>.

banks give the opportunity to their customers for creating current and savings account; issue loan without properly judging their earning ability, bank balance and loan repayment capacity. Thus during post demonetization, there may be a chance of reduction of bank income, increase of expenditure and fall of bank's profit.

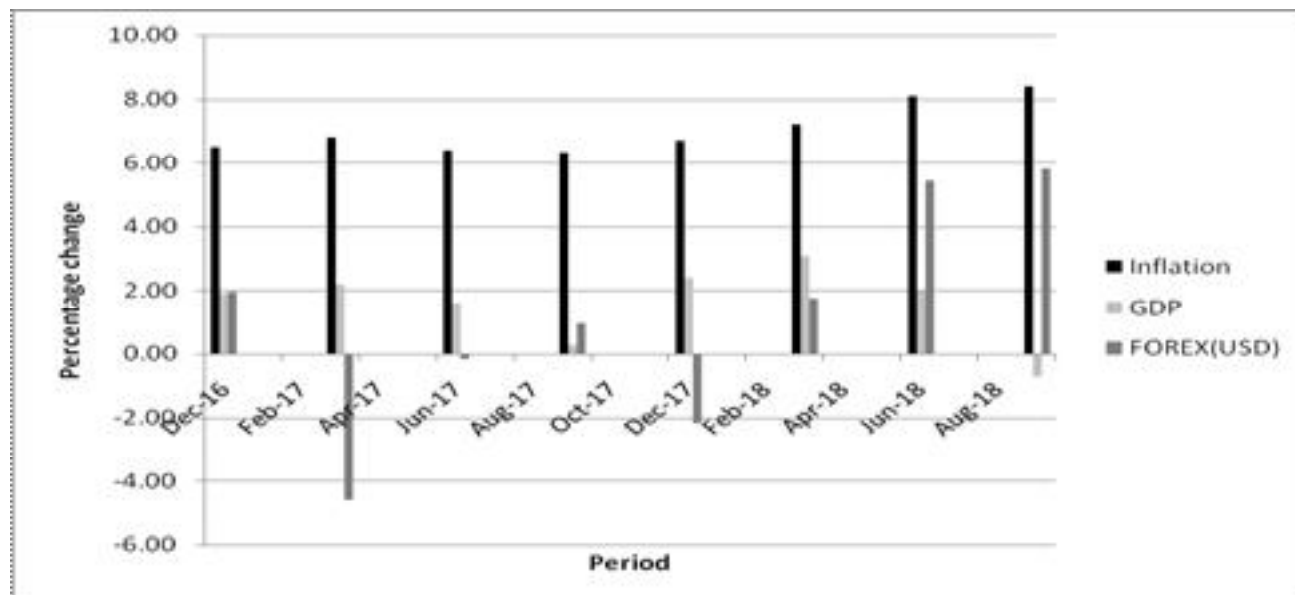


Figure 1. *Impact of Demonetization towards macroeconomic parameters*

Figure 1 depicted the post demonetization scenario of India's macroeconomic parameters. After the demonetization held on the beginning of November 2016, there were a sudden fall of country's GDP, inflation rate and foreign exchange rate.

Increasing non recovery of loans ultimately leads to the increase of nonperforming assets (NPA). RBI's Financial Stability Report (FSR) said, "Under baseline scenario, the PSBs' GNPA ratio may increase to 12.5 per cent in March 2017 and then to 12.9 per cent in March 2018 from 11.8 per cent in September 2016, which could increase further under a severe stress scenario."² Considering the scenario the present research study is an attempt to determine the impact of microeconomic factors like bank's income, expenditure and profitability and macroeconomic factors like country's GDP, inflation and foreign exchange on the net NPA at post demonetization. Here the performance of selected public and private sector banks has been considered for the study.

1.1 Review of literature

This section of the current research represents an overview of the existing literatures regarding the demonetization scenario of Indian banks and movement of their nonperforming assets. The study of Antony, Maheshwari and Preety (2017) depicted that the increasing liquidity position of banks due to demonetization gave the opportunity to mobilize the fund in different sectors for economic development. Gandhi and Bhushan (2017) also studied the impact of demonetization 2016 on the Indian bank employees and found that though demonetization created prolong pressure on bank employees and customers at the time of changing the old currency notes to the bank, but in broad sense it brought the technological advancement of the country. Meher (2017) analysed the short and long term impact of demonetization on banking sector with special emphasis on NPA position. According to the author demonetization created a positive impact on banks in short term as bulk amount of deposit has reduced the unpaid loan amount. But in long run demonetization might create an

² Business Standard (December 29, 2016), "Banks' GNPA's rise to 9.1% in Sept from 7.8% in Mar: RBI". Retrieved from https://www.business-standard.com/article/pti-stories/banks-gnpas-rise-to-9-1-in-sept-from-7-8-in-mar-rbi-116122900917_1.html.

adverse effect due to the disbursement of the bulk amount of fund to the borrowers by bankers without considering their loan repayment ability and that lead to the increase of NPA. The study of Prabhu, Girish and Mamatha (2017) revealed that demonetization was considered as a tool to eradicate the black money, reduce corruption and introduced digitisation to reduce the cash dependent system. Though banking operations were badly affected due to demonetization, but the boldest step took by Indian government help to promote a better economic development. According to Vidhya and Priya (2017), due to demonetization many bank accounts had been opened and the bulk deposit of cash helped to reduce the nonperforming assets. Again demonetization also helped to promote cashless economy and that lead to reduce cash dependency of common people of our country. The analysis of Piyush and Goyel (2018) revealed the short term positive effect of demonetization 2016. Their analysis also revealed the relation between the net NPA and bank's profitability. The study concluded that the net NPA of public sector banks were higher than private banks.

Though the foregoing literatures were based on the post demonetization scenario of banks but till now no research studies have been conducted on the influencing factors responsible for generating nonperforming assets of Indian banks and its movement during post demonetization. The foregoing research paper has represented the internal and external factors that affect the nonperforming assets of Indian banks. The research analysis also tried to investigate that whether there was any significant difference of public and private sector banks in terms of percentage change of net value of nonperforming assets.

1.2 Objectives of the study

- I. To investigate whether there is any significant deference between public and private sector banks in terms of their NPA position during post demonetization.
- II. To study the impact of micro and macroeconomic factors on the nonperforming assets of Indian public and private sector banks during post demonetization.

2. METHODS

2.1 Data Sources

The foregoing analytical research is based on secondary data which are collected from Basic Statistical Returns of Scheduled Commercial Banks in India, an annual publication of RBI. The database contains information on a number of variables related to banking industry in India. The database includes banks which are included in the Second Schedule of the RBI Act, 1937, known as scheduled commercial banks and contains bank group-wise selected ratios of scheduled commercial banks. The present study finds out the factors influencing NPA of Indian banks during post demonetization. A comparative analysis based on public and private sector assess the impact of NPA on the performance of banking sector is analysed. The data were collected for the period of 3 years (from 2016-17 to 2018-19) for statistics applications.

2.2 Selection of Banks

Following RBI classification in the database of scheduled commercial banks we have considered old and new private sector banks. Private sector banks comprised of both old and new private sector banks. Depending on the availability and continuity of data 10 banks from private sector and 10 banks from the public sector are selected on the basis of maximum fluctuation in percentage term of the parameters like bank's income, expenditure, profit / loss and the net NPA positions. The lists of banks are presented in the following Table I.

Table I. List of banks considered for the study

Public Sector Banks		Private Sector Banks	
1	Alahabad Bank	1	Axis Bank
2	Bank of Baroda	2	City Union Bank
3	Bank of India	3	DCB Bank
4	Canara Bank	4	Federal Bank
5	Central Bank of India	5	HDFC Bank
6	Corporation Bank	6	ICICI Bank
7	Dena Bank	7	IDFC Bank
8	IDBI Bank	8	IndusInd Bank
9	State Bank of India	9	Kotak Mahindra Bank
10	Indian Bank	10	RBL Bank

3. RESULTS

3.1 Data Analysis

The basic aim of the present research study is to determine the position of nonperforming assets of public and private sector banks. Again the study tries to investigate the impact of micro and macroeconomic factors that influence the nonperforming assets. The sample data represented in bar diagram of Figure 2 which reveals a comparative view of public and private sector bank's NPA during the study period. The diagram shows that the though the net NPAs of public sector banks have decreased slightly at the beginning of post demonetization, but increased continuously for next two consecutive quarters. After that the percentage changes of net NPAs have fallen. The private sector banks have shown almost same scenario during the defined period, but the percentage changes differ in a higher pace than public banks.

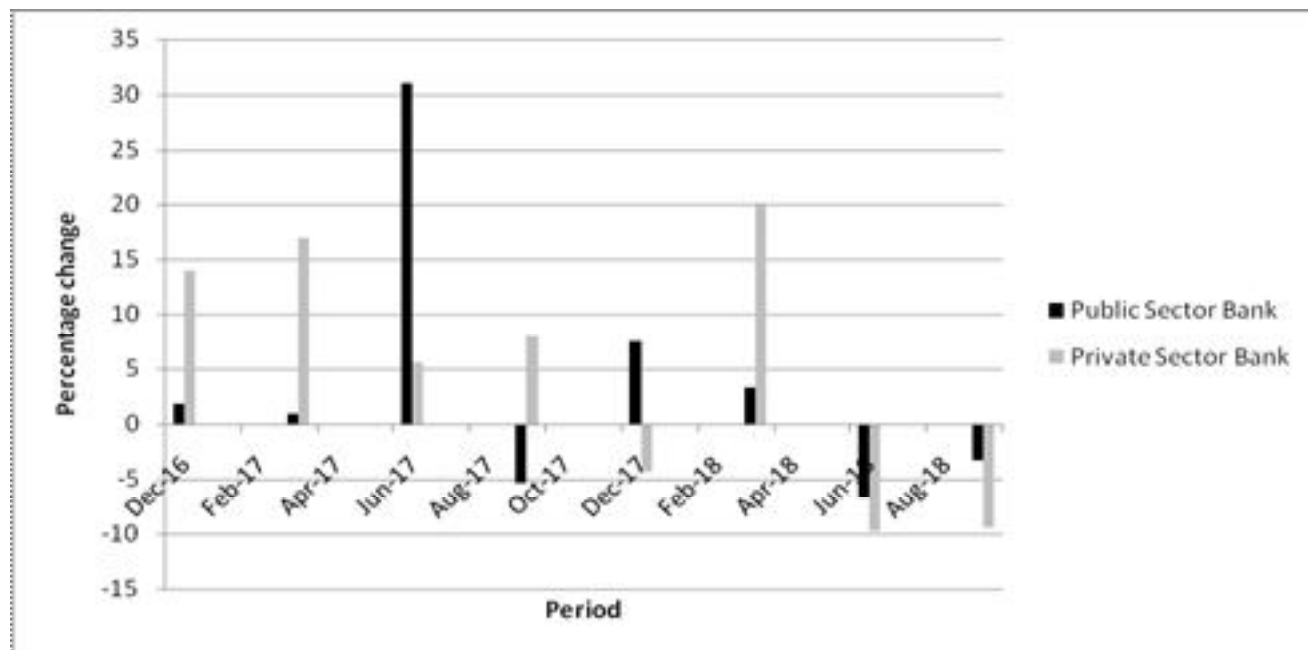


Figure 2. Comparative Bar diagram of percentage change of Net NPA of public and private sector banks

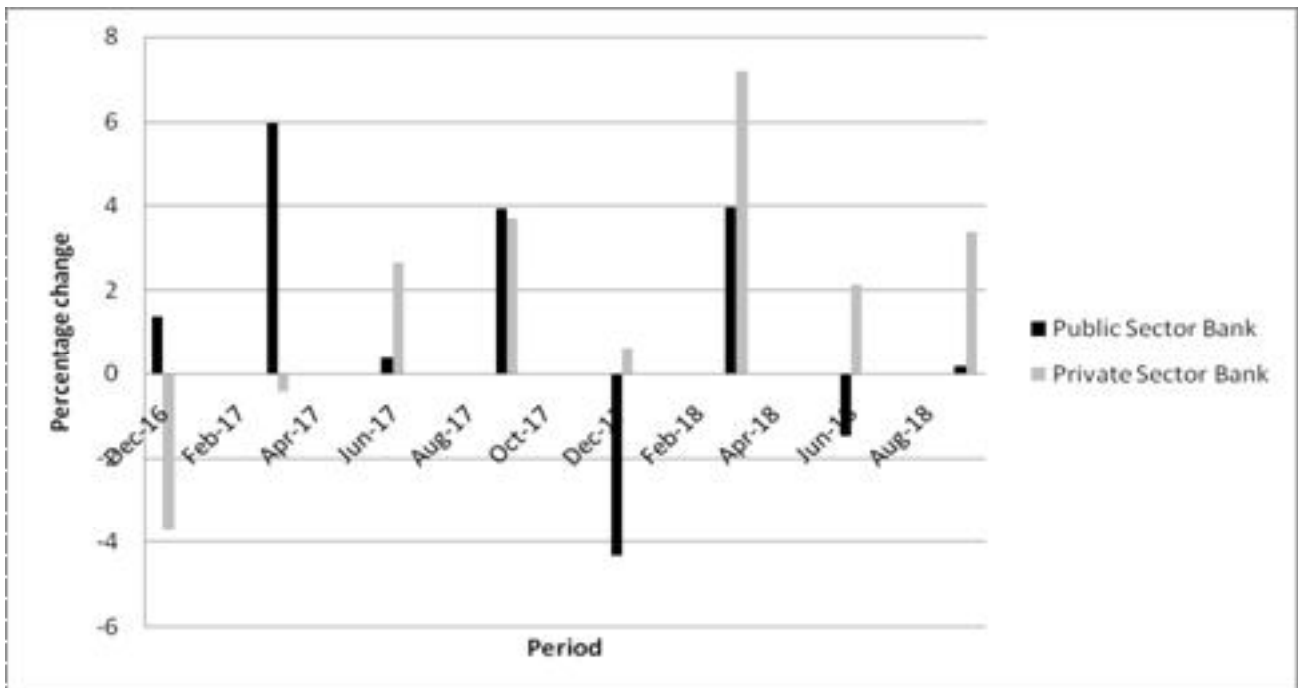


Figure 3. Comparative Bar diagram of percentage change of Income of public and private sector banks

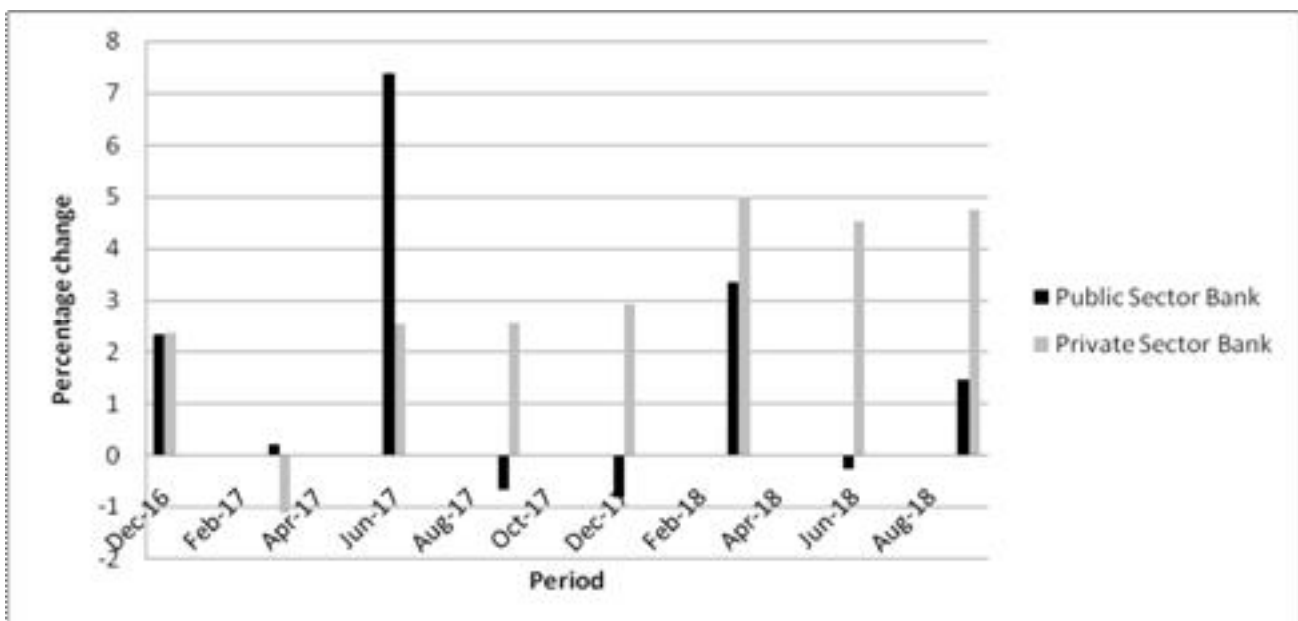


Figure 4. Comparative Bar diagram of percentage change of Expenses of public and private sector banks

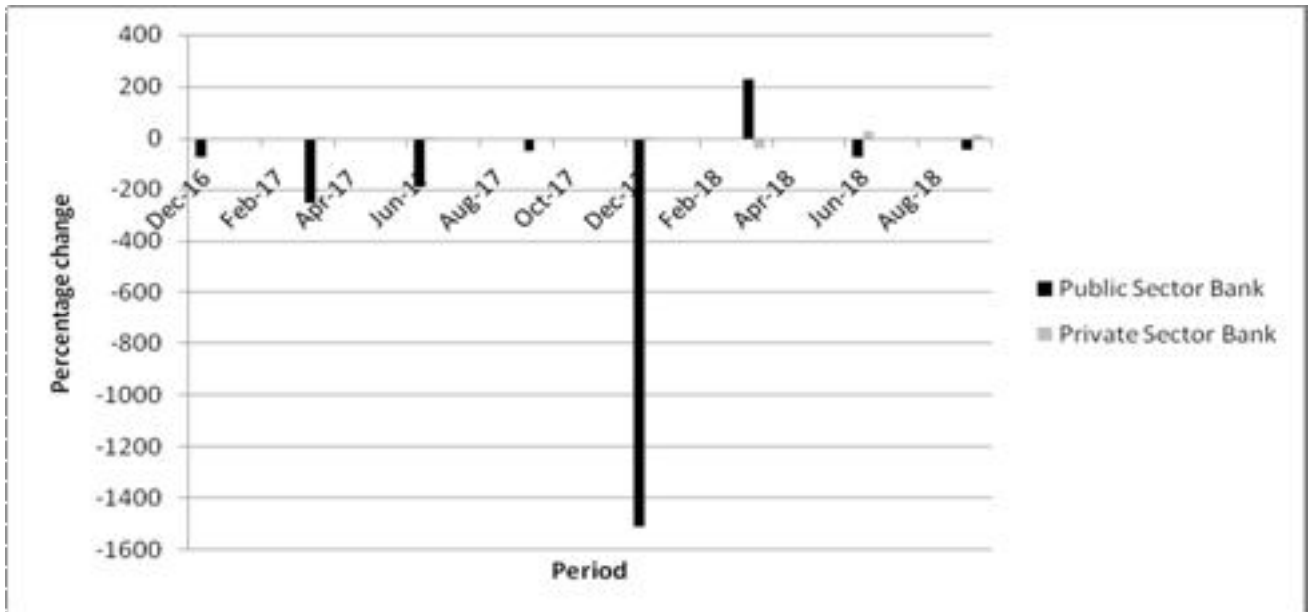


Figure 5. Comparative Bar diagram of percentage change of Net profit / loss of public and private sector banks

The percentage change of income (Figure 3) and expenditure (Figure 4) of private banks show a sudden decline for two consecutive quarters just after the demonetization, but from the 2nd quarter of financial year 2017-18 the income and expenditure have increased gradually. Both income and expenditure have not shown any significant change for 1st three quarters of FY 2017-18 for the public sector banks but after that both the parameters gradually decrease the next quarters. Figure 5 reveals the net profit / loss for the last three financial years of both public and private banks. Though the private banks show profits at the beginning of the financial year 2018-19, but there are no such changes of profitability parameter of public banks during the last three financial years.

3.2 Empirical Approach through Multivariate Regression Analysis

The regression model is used to predict the value of the percentage of NPA (dependent variable) based on the value of other independent variables. Here to ascertain the impact of micro and macroeconomic variable on the NPA performance of Indian public and private sector banks a multivariate regression analysis is carried out. To conduct the present research study three consecutive financial year from FY 2016-17 to FY 2018-19 by selecting the quarters from Q3, FY 2016-17 to Q1, FY 2018-19 have been considered for the study. The percentage change of net NPAs during that period have been chosen as dependent variables. Among the various micro and macroeconomic parameters that can be able to make a significant impact on the movement of NPAs; only three factors like banks income, expenditure and net profit/loss have been selected as internal independent variables and country's GDP, inflation and foreign exchange rate (USD) as the external independent variables.

The generalised multivariate regression equations are presented below:

$$(NPA\%)_t = \alpha_t + \beta_1 Income_t + \beta_2 Expenditure_t + \beta_3 Net_profit/Loss_t + \epsilon^t \dots\dots\dots (1)$$

$$(NPA\%)_t = \alpha_t + \beta_1 GDP_t + \beta_2 inflation_t + \beta_3 forex_t + \epsilon^t \dots\dots\dots (2)$$

Where

α = Constant term

β_{1-k} = Regression coefficients

t = Sample period (from Q3, FY 2016-17 to Q1, FY 2018-19)

ε = Error term

Before conducting the multivariate regression analysis the following null and alternate hypothesis have been framed:

Hypothesis 1

$H_0 : \mu_d = 0 \rightarrow$ There is no significant impact of microeconomic factors towards the net NPA percentage change of public sector banks.

$H_1 : \mu_d \neq 0 \rightarrow$ There is a significant impact of microeconomic factors towards the net NPA percentage change of public sector banks.

Hypothesis 2

$H_0 : \mu_d = 0 \rightarrow$ There is no significant impact of microeconomic factors towards the net NPA percentage change of private sector banks.

$H_1 : \mu_d \neq 0 \rightarrow$ There is a significant impact of microeconomic factors towards the net NPA percentage change of private sector banks.

Hypothesis 3

$H_0 : \mu_d = 0 \rightarrow$ There is no significant impact of macroeconomic factors towards the net NPA percentage change of public sector banks.

$H_1 : \mu_d \neq 0 \rightarrow$ There is a significant impact of macroeconomic factors towards the net NPA percentage change of public sector banks.

Hypothesis 4

$H_0 : \mu_d = 0 \rightarrow$ There is no significant impact of macroeconomic factors towards the net NPA percentage change of private sector banks.

$H_1 : \mu_d \neq 0 \rightarrow$ There is a significant impact of macroeconomic factors towards the net NPA percentage change of private sector banks.

Table II. Result of multivariate regression analysis between Net NPA % change and the microeconomic factors of public sector banks

Variable	Coefficient	Std. Error	t-statistic	Prob. [P> t]
C	2.426792	1.569659	1.55	0.126
Income	-.4560077	.2135926	-2.13	0.036
Expenditure	1.000781	.3353711	2.98	0.004
Net_profit/loss	-.0022814	.0019238	-1.19	0.239
R – squared		0.5580		
F Statistic		4.75465		
Prob (F – statistic)		0.0043		

Table II result delineates that income of the public sector banks and net NPA percentage change is inversely related. The net NPA percentage change decreases by 0.45 times with the increase in income by 1 percent. Again the p-value of income and expenditure are within the limit at 5 % level of significance. So null hypothesis is accepted but for net profit / loss alternative hypothesis is accepted.

Table III. *Result of multivariate regression analysis between Net NPA % change and the microeconomic factors of private sector banks*

Variable	Coefficient	Std. Error	t-statistic	Prob. [P> t]
C	6.613788	2.919524	2.27	0.026
Income	.964098	.4091634	2.36	0.021
Expenditure	-1.142981	.753714	-1.52	0.134
Net_profit/loss	.0048635	.0171366	0.28	0.777
R – squared		0.4807		
F Statistic		2.224488		
Prob (F – statistic)		0.0921		

On the other hand Table III result indicates that expenditure of the private sector banks and net NPA percentage change is inversely related. The net NPA percentage change decreases by 1.14 times with the increase in expenditure by 1 percent. Here, null hypothesis is accepted only for income factor.

Table IV. *Result of multivariate regression analysis between Net NPA % change and the macroeconomic factors of public sector banks*

Variable	Coefficient	Std. Error	t-statistic	Prob. [P> t]
C	14.90198	21.13825	0.70	0.483
GDP	.6866309	1.548997	0.44	0.659
Inflation	-1.768387	3.051127	-0.58	0.564
Forex_USD	-.5634226	.7356779	-0.77	0.446
R – squared		0.4558		
F Statistic		1.498245		
Prob (F – statistic)		0.2218		

Table IV result shows that inflation & foreign exchange rate (USD) of the public sector banks and net NPA percentage change are inversely related. The net NPA percentage change decreases by 1.7 and .56 times respectively with the increase in inflation and foreign exchange rate (USD) by 1 percent. Null hypothesis is accepted only for foreign exchange rate (USD).

Table V. *Result of multivariate regression analysis between Net NPA % change and the macroeconomic factors of private sector banks*

Variable	Coefficient	Std. Error	t-statistic	Prob. [P> t]
C	42.83284	26.57578	1.61	0.111
GDP	.9657672	1.947455	0.50	0.621
Inflation	-5.447069	3.835989	-1.42	0.160

Forex_USD	-.3591867	.9249213	-0.39	0.699
R – squared	0.4903			
F Statistic	2.515488			
Prob (F – statistic)	0.0646			

Similarly Table V result shows that inflation & foreign exchange rate (USD) of the private sector banks and net NPA percent age change are inversely related. The net NPA percentage change decreases by 5.4 and .35 times respectively with the increase in inflation and foreign exchange rate (USD) by 1 percent. Considering 5% level of significance, the data result shows that alternative hypothesis is accepted for all the parameters.

So, from the research analysis it has been seen that the selected micro and macro economic variables have mixed impact towards public and private sector banks. While considering the microeconomic parameters, the public and private sector banks show just opposite result i.e income & net profit / loss have inverse relation with net NPA of public banks but proportional relation for private banks. The data result for macroeconomic factors of public and private banks show the movement towards same direction i.e. inflation and foreign exchange rate (USD) are inversely related to net NPA and GDP is proportional with net NPA for both type of banks. Therefore, the forgoing research study is able to show that though the microeconomic factors are not significantly affecting the net NPA during post demonetization of the Indian banks but the macroeconomic factors have made a significant influence. The public sector banks are more affected than private banks.

4. CONCLUSION

Day by day, a continuous increase of NPA is a serious issue to not only the banking sectors. It has adverse impact to the whole economy of the country. The present research study is an outcome of different micro and macroeconomic parameters to resist the growth of NPA during post demonetization era. It has been revealed from the study that though the demonetization held on November 08, 2016 can able to make an obstruction to the growth of NPA of both the public and private banks in short run i. e. for the next two consecutive financial years of the demonetization declaration, but in long run it may create a hug problem. So, both the public and private banks should implement policies, rules and regulations to control the growth of NPA on urgent basis.

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