How to Cite:
Susena, K. C., Huda, M., Maseleno, A., Sahoo, B. P., & Kaur, K. (2021). A study on impact of PSL on gross NPAS of nationalised banks: an empirical approach. *Linguistics and Culture Review*, *5*(S3), 81-96. https://doi.org/10.37028/lingcure.v5nS3.1365

A Study on Impact of PSL on Gross NPAS of Nationalised Banks: An Empirical Approach

Karona Cahya Susena
Universitas Dehasen Bengkulu, Bengkulu, Indonesia

Miftachul Huda
Universiti Pendidikan Sultan Idris, Tanjung Malim, Malaysia

Andino Maseleno
Universiti Pendidikan Sultan Idris, Tanjung Malim, Malaysia

Bibhu Prasad Sahoo
Assistant Professor, SGTB Khalsa College, University of Delhi, New Delhi, India

Karman Kaur
Assistant Professor, SGTB Khalsa College, University of Delhi, New Delhi, India

***Abstract*---**In order to encourage banks to lend more to neglected areas of the economy, the idea of a priority sector was introduced. These priority sectors add significantly to gross domestic product but have not received sufficient finance to function adequately. However, lending in the priority sector is not very warmly welcomed by the banks, particularly nationalized banks in India, as they generate more nonperforming assets than other sectors. It is the priority sector that contributes to the biggest default. As far as NPAs on account lending to the priority sector are concerned, it has been observed that there are inefficiencies in this sector, such that the fresh loans turning bad. Thus, our study examines the impact of non-priority sector loans on the rise of NPAs in the nationalized banks.

***Keywords*---**lending sector-wise, lending to priority sector, multivariate regression, non-performing assets.

Introduction

The Indian financial industry had turned out as a vital instrument to encourage the advancement of the Indian economy by the 1960s. The development of banking raised the issue of nationalization of banks. Consequently, 14

***Corresponding author**: Susena, K. C.; Email: karona.cs@unived.ac.id*
Manuscript submitted: 9 April 2021, Manuscript revised: 27 June 2021, Accepted for publication: 22 July 2021

commercial banks were nationalized in 1969 in order to focus more on the priority sector, which was underdeveloped (Jamil & Ahmad, 2011; Bhaumik & Piesse, 2008; Ramcharran, 2017). Another six commercial banks turned nationalized in 1980. The fundamental thought process behind exchanging the responsibility for banks to the State and the Reserve Bank of India was to issue headings to these banks to subsidize the national projects and pursue the arrangement needs.

One of the remarkable steps post nationalizations of banks in India has been opening up to priority sector lending. The term priority sector in itself defines the sheer importance of financial assistance required to such sectors. These are such sectors with the most priority contributors to GDP but are neglected in financial assistance. RBI and the Government of India have set some guidelines to increase financing of the Priority Sector by deploying more credit to the backward regions; ensuring smooth and timely flow of credit to weaker sections to provide a balanced social and economic growth (Selige et al., 2006; Meeker & Gray, 1987; Dimitrios et al., 2016).

Such sectors are- agriculture, micro and small enterprise, educational loans, housing loans, export credit, social infrastructure, renewable energy, others. RBI has also stipulated at least 40 percent of compulsory disbursement of credit by each commercial bank to such sectors. Thus, lending to these sectors has become one of government policy's main objectives since bank nationalization. Further, it extends and expands the credit to those of crucial importance in terms of their contribution to national income and employment (Us, 2017; Ghosh, 2015; Abid et al., 2014).

(Shajahan, 1998) Although the whole concept of priority sector lending and economic growth was wise and noble, it did not come without political interferences, which corrupted it and led to the extensive creation of NPAs for banks out of lending to such sectors. The issue of rising NPAs lending to the priority sector of great concern for the banking sector. Hence, the main culprit behind mounting NPAs is believed to be lending to this sector. They are often described as „a poor way of achieving equality' as it increases NPAs at the cost of financing neglected sectors of the economy. The Narasimha committee feels that direct credit had led to a rise in non-performing loans and had an adverse impact on banks' efficiency and profitability. The mounting level of NPAs is a matter of great concern. Therefore, our study will assess how lending to the priority sector affects the NPAs of Nationalised Banks.

Literature Review

Various studies have been conducted to study the concept of lending to the priority sector. These included studies conducted for a particular bank as well as for bank groups. The idea of lending to the priority sector has been studied time and again (Yacob et al., 2020; Yunus & Indrasari, 2017). It has been witnessed in most of the studies that priority sector advances are increasing for all banking groups, but most of the banks are unable to attain the goal set by RBI. Lending to the priority sector also gives rise to many problems such as rising NPAs, decreasing profit, high transaction costs, etc.

Thus, an extensive literature review has been done to get an in-depth insight into the problem, penned down the guidelines that RBI needs to define and specify the priority sector. Mathur & Tannan (1999), highlighted the deficiencies in lending to the priority sector in his book entitled, "Banking Law and Practices in India." He observed that only a negligible flow of credit had taken place in the priority sector. His Study concluded that banks tend to lend to medium and large scale industries rather than agricultural and weaker sections. Dasgupta (2002), advocated a more defined approach to lending to the priority sector n his paper "Lending to priority sector Yesterday, Today and tomorrow" has. He observed a lack of focus and rationality in channelizing credit to the priority sector. Joshi (1972), observed that public sector banks had not achieved the target of 40% lending to priority sector lending. Shabbir & Mujoo (2014), analyzed the non-priority and priority sectors in the scheduled commercial banks to determine the NPA status. They found that public sector banks generate more NPAs in these sectors than the private sector, which had higher NPA in non-priority sectors. (Ahmed, 2010), examined the association between individual commercial banks' profits and their lending to the priority sector. They observed that lending to the priority sector significantly affected all the profitability measures except return on equity, reveals that lending to the priority sector compared to total NPA is reducing compared to relative terms but is soaring compared to absolute terms.

The above literature review revealed that not many studies were conducted exclusively on lending to banks' priority sector. Moreover, no serious study was found on the effects of lending to the priority sector on NPAs of Nationalized banks. Therefore, our paper attempted to find the relationship and impact of lending to the priority sector on increasing NPAs in Nationalized banks (Dave, 2016; Desfiandi et al., 2017; Desfiandi et al., 2019).

Objectives & Hypotheses of the Study

Nationalized banks have the primary rationale of open administration and they need to offer inclination to need parts in propelling credits. In spite of RBI rules these banks have not been demonstrated any tendency to improve credit conveyance to different divisions. In spite of the fact that standard gatherings are held to audit the execution of these banks, nothing considerable has occurred in making the nationalized banks to improve their loaning, especially to the need divisions like horticulture. Therefore, our study aims to test the following objectives:

- To examine long term trend behavior of priority sector lending of the nationalized banks
- To examine the impact of priority sector lending on gross NPAs of nationalized banks

On the basis of so defined objectives, the following hypotheses are tested in the research study:

Hypothesis 1: There exists critical long trend pattern in PSL of nationalized banks of India.

Hypothesis 2: There exists critical impact of Lending to priority sector on NPAs of nationalized banks of India.

Research Methodology

Sources of the Data: It has been chosen to incorporate nationalized banks of India. Data from nationalized banks of India is profoundly trustworthy. The data was collected from various secondary sources such as published reports in various journals, various official sites. Period of the Study: The period for the study covered 12 years from 2006 to 2018 and the essential data have been collected for all the nationalized banks in India (Ali et al., 2016; Assagaf & Ali, 2017; Rastogi & Singh, 2017). Panel data analysis: Panel data analysis was used to analyze the impact of total lending to priority sector and its different categories (agricultural lending, lending to small and micro enterprises and PSL to other sectors) on gross and net NPAs of nationalized banks and study the determinants of lending to priority sector. Panel regression is considered relevant for the present study because the data for undertaken variables are available for 12 years for total 19 banks. The equation explaining the impact of PSL on NPAs is expressed as follows:

$$\mathbf{NPA_{it}} = \boldsymbol{\alpha} + \sum_{\mathbf{i=1}}^{\mathbf{k}} \boldsymbol{\beta_k} * \mathbf{X_{kit}} + \epsilon_i$$

where,

NPAit	= NPA for i-th bank at t time.
α	= Constant.
i (index of banks)	=1, 2 [. . .] 19.
t (time-interval)	=1, 2 [. . .] 10.
β	=coefficients of determinants of NPA.
Xk	= kthregressor.
K	=Number of regressor or independent variable.

(Above mentioned equation has been used to study the impact of total PSL and its different categories on both gross as well as net NPAs of nationalized banks)

The equation explaining the impact of different banking parameters on PSL is expressed as follows:

$$\mathbf{PSL_{it}} = \boldsymbol{\alpha} + \sum_{\mathbf{i=1}}^{\mathbf{k}} \boldsymbol{\beta_k} * \mathbf{X_{kit}} + \epsilon_i$$

Where,

	= priority sector lending for i-th bank at t time.
α	= Constant.
i (index of banks)	=1, 2 [. . .] 19.
t (time-interval)	=1, 2 [. . .] 10.
β	=coefficients of determinants of PSL.
Xk	= kthregressor.
K	=Number of regressor or independent variable.

The statistical analysis has been done using pooled regression model as well as panel regression models. Panel regression models not only include the benefits of

pooled regression model but also incorporate the heterogeneity of the individual banks if any. To select an appropriate method between random and fixed effect panel models, Hausman's test has been applied. As data infers unrefined information assembled from sundry sources. This rough information needs filtrations to change over into huge information having been accumulated, modified and coded for instance it needs to experience a methodology of examination and must be deciphered in like way before their significance and recommendations are grasped (Louzis et al., 2012; Suartawan & Artini, 2019).

Distinctive verifiable skills are to be used for examining the hypothesis and achieving the acceptances and judgments about the relationship. In the examination consider following real strategies is associated. accurate tests have been used according to the nature and focuses of the examination.

Trend Analysis of Total PSL

The descriptive analysis (mean, maximum, minimum, standard deviation) of total PSL is done. The results of descriptive analysis are shown in the following table. The results signify that average total PSL is found to be highest in the case of Punjab National Bank (`66616.77Crores), followed by Canara Bank (`65703.70 Crores). However, minimum average PSL is found in the case of Punjab and Sind Bank (`10793.48 Crores), Dena Bank (`14907.72Crores) and Vijaya Bank (`16497.10 Crores). One of the important factors affecting the capacity to generate loans in priority sector is capital which is equally essential for balance sheet expansion. Punjab National Bank has been consistent in exceeding the national goals with respect to priority sector lending because of its large presence throughout the country. A huge network of Punjab National Bank has helped in strengthening the rural credit delivery system. Canara Bank is also a consistent player in the case of PSL. Despite challenging economic and banking environment during the study period Canara Bank has fared well in fulfilling its social responsibility (Chanana & Gupta, 2016; Mehta & Malhotra, 2014).

When compare with performance parameters such as credit-deposit ratio, investment-deposit ratio, ratio of demand deposits to total liabilities, ratio of priority sector advances to total advances, Vijaya Bank and Punjab& Sind Bank have emerged as weak nationalized banks. This is very well reflected in their ability to channelize credit to priority sector. PSL banks are classified into three groups. These groups are banks with average PSL less than `25000 Crores, average PSL between `25000 to `50000 Crores and banks with average PSL more than `50000 Crores. Table 1 shows the frequency distribution.

Table 1
Descriptive analysis of total priority sector lending

S. No	Name of Bank	Mean (`Crores)	Standard Deviation	Minimum	Maximum
1	Allahabad Bank	29939.06	13942.44	12453	53909
2	Andhra Bank	23787.09	13046.12	8924	45507

3	Bank of Baroda	56637.97	29156.80	18740	103342
4	Bank of India	54182.81	23794.57	22611	94572
5	Bank of Maharashtra	18612.43	10974.23	7206	39094
6	Canara Bank	65703.70	28031.00	30937	118234
7	Central Bank of India	40490.02	19531.53	17897	75997
8	Corporation Bank	26460.97	17243.68	9044	56603
9	Dena Bank	14907.72	7788.58	6074	28454
10	Indian Bank	23498.70	10617.55	10675	41274
11	Indian Overseas Bank	35117.54	17796.38	14114	63635
12	Oriental Bank of Commerce	33464.86	16477.17	13399	57428
13	Punjab and Sind Bank	10793.48	5473.15	3994	20233
14	Punjab National Bank	66616.77	39624.31	13100	135812
15	Syndicate Bank	34819.74	14475.10	14627	57281
16	UCO Bank	29808.38	13425.93	13643	53278
17	Union Bank of India	47228.71	21874.18	22232	87387
18	United Bank of India	17527.00	8243.60	7109	28950
19	Vijaya Bank	16497.10	7204.151	7361	30714

The results specify that 7 out of 19 nationalised banks (37 percent) have the average PSL less than `25000 Crores per annum, whereas 8 banks (44 percent) have average PSL between `25000 to `50000 Crores per annum and only 4 banks (21percent) have average PSL more than `50000 Crores per annum. It is surprising to note that only 21percent nationalized banks have lend more than `50000 Crores annually on an average to priority sector during the study period. This raises the point for a need for serious reconsideration of the programme. Effort has been made by us to study the long term behaviour of PSL by nationalised banks during the period 2006-2018.The long term trend of total PSL of nationalised banks is analysed with the help of regression model represented below:

$$\textbf{Total PSL} = \alpha + \beta * \textbf{Time}(\textbf{in years}) + \varepsilon$$

Where total PSL is considered as a dependent variable,α is intercept,β represents the long term trend in behaviour of total PSL and time is considered as an independent variable. The hypothesis of regression model is mentioned below.
Null Hypothesis: H_0: "There is no significant trend in total PSL of nationalised banks"

Alternative Hypothesis: H_1: "There is a significant trend in total PSL of nationalised banks"

The results of regression model are shown below in table 2.

Table 2
Distribution of average total PSL by nationalised Banks

Average Total PSL	Frequency	Percent
Less than `25000 Crores	7	37%
`25000 to `50000 Crores	8	42%
More than `50000 Crores	4	21%
Total	19	100%

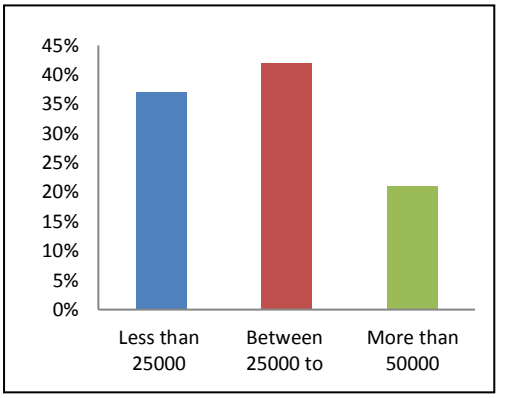


Table 3
Regression analysis of total priority sector lending

Name of Bank	Dependent variable	Independent variable	Regression coefficient (β)	t-test (p value)	F-test (p value)	R Square
Allahabad Bank	Total PSL	Time (in years)	4525.19	14.99 (0.000)**	224.73 (0.000)**	96.6 %
Andhra Bank	Total PSL	time (in years)	4182.21	11.40 (0.000)**	129.98 (0.000)**	94.2 %
Bank of Baroda	Total PSL	time (in years)	9565.91	24.36 (0.000)**	593.39 (0.000)**	98.7%
Bank of India	Total PSL	time (in years)	7694.97	13.62 (0.000)**	185.57 (0.000)**	95.9%
Bank of Maharashtra	Total PSL	time (in years)	3356.05	6.93 (0.000)**	48.05 (0.000)**	85.7%
Canara Bank	Total PSL	time (in years)	8959.07	10.85 (0.000)**	117.78 (0.000)**	93.6%
Central Bank of India	Total PSL	time (in years)	6159.09	9.07 (0.000)**	82.43 (0.000)**	91.2%
Corporation Bank	Total PSL	time (in years)	5313.78	7.33 (0.000)**	53.76 (0.000)**	87%
Dena Bank	Total PSL	time (in years)	2490.76	10.95 (0.000)**	119.94 (0.000)**	93.7%

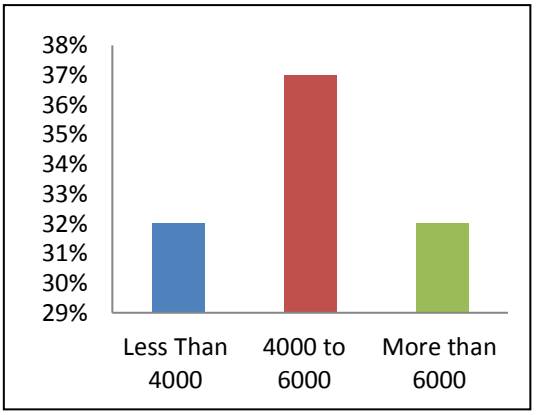
Indian Bank	Total PSL	time (in years)	3814.67	14.57 (0.000)**	212.55 (0.000)**	96.8%
Indian Overseas Bank	Total PSL	time (in years)	5754.77	13.59 (0.000)**	184.90 (0.000)**	95.9%
Oriental Bank of Commerce	Total PSL	time (in years)	5366.53	16.78 (0.000)**	281.60 (0.000)**	97.2%
Punjab and Sind Bank	Total PSL	time (in years)	1720.20	8.75 (0.000)**	76.66 (0.000)**	90.6%
Punjab National Bank	Total PSL	time (in years)	9951.93	3.31 (0.000)**	10.96 (0.011)**	57.8%
Syndicate Bank	Total PSL	time (in years)	4774.31	53.57 (0.000)**	2869.90 (0.000)**	99.7%
UCO Bank	Total PSL	time (in years)	4143.08	7.41 (0.000)**	54.94 (0.000)**	87.3%
Union Bank of India	Total PSL	time (in years)	6773.23	7.62 (0.000)**	58.06 (0.000)**	87.9%
United Bank of India	Total PSL	time (in years)	2678.36	15.46 (0.000)**	239.26 (0.000)**	96.8%
VijayaBank	Total PSL	time (in years)	2263.15	8.71 (0.000)**	75.89 (0.000)**	90.5%

** indicates that p value < 0.05

The bivariate regression model's result specifies that the probability value of t statistics for every bank is established to be less than 5 percent level of significance; hence with a 95percent confidence limit, the null hypothesis of no long term trend in total PSL cannot be established. Thus, we conclude that there is a significant positive swing in total PSL behavior of all nationalized banks. The p-value of F statistics is substantial in the case of all selected banks, which represents that the regression model is statistically fit. R square represents the degree of existed long term trend of nationalized banks. It is found that Punjab National Bank has the highest trend value of `9951.931Crores. This indicates that the average total PSL of Punjab National Bank increases by `9951.931 Crores every year. Punjab National Bank is followed by Bank of Baroda, where it is established that on average total PSL of the bank increases by `9565.910 Crores every year. The lowest trend is found in the case of Punjab and Sind Bank, where total PSL increases total by `1720.201 Crores every year. On the basis of long term trend of PSL banks are divided into three categories such as banks with annual trend of less than `4000 Crores, between `4000 to `6000 Crores and more than `6000 Crores. The frequency distribution of banks annual trend is shown below table (Mishra, 2016; Narasimham, 1998; Pandya, 2015).

Table 4
Distribution of annual trend of total priority sector lending

Annual Trend of Total PSL	Frequency	Percent
Less Than `4000 Crores	6	32%
` 4000 to ` 6000 Crores	7	37%
More than `6000 Crores	6	32%
Total	19	100%



It is noticeable from the table that six banks (32percent) have an annual trend value less than `4000 Crores, and similarly six banks (32percent) have a yearly trend value of more than `6000Crores, while seven banks (37percent) have an annual trend between `4000 to `6000 Crores. It means that on average, priority sector lending of only 6 nationalized banks increases by less than`4000 Crores every year, whereas PSL of 7 out of 19 banks increases between `4000 to `6000 Crores every year and PSL of only 6 out of 19 banks increases by more than `6000 Crores every year. It is visible from the analysis that there is a notable encouraging trend in the total PSL of all nationalized banks during the study period. Apart from studying trends in total PSL, it is also necessary to analyze the trends in different categories of PSL. The following sections examine the trends in various priority sectors, such as agriculture, micro, small enterprises, etc.

Impact of PSL on Gross NPAs of Nationalised Banks

Nationalised banks of India are plagued by the resurgent issue of non-performing assets. Following model has been used to study the same;

$$\textbf{Gross NPA}_{it} = \alpha_{it} + \beta_i * \textbf{TotalPSL}_{it} + \epsilon_{it}$$

The null hypothesis of above regression model is mentioned below
Null hypothesis (H_0): "There is no impact of priority sector lending on gross NPAs of nationalised banks of India."

Table 5
Pooled regression model indicating the impact of total PSL on gross NPA

Dependent variable	Independent variable	Regression coefficients		t statistics (p value)	F statistics (p value)	R square
	Total PSL	Intercept	-1128.36	-4.18 (0.000)**	437.39	70.16 %

Gross NPA	(α)			(0.000)**
	Beta (β)	0.136	20.91 (0.000)**	

** indicates that p value < 0.05

As shown above, the results indicate that intercept of the pooled regression model is found to be (-) 1128.36. The intercept can be defined as a hypothetical value of gross NPAs if the total PSL of banks is zero. In the study, the gross NPAs have a negative intercept, which can be assumed to be zero. This means that when the total PSL of nationalized banks is zero, then the gross NPAs are nil. The p-value (0.000) of t statistics (-4.18) of regression intercept was insignificant at five percent, indicating the statistical significance of intercept. In addition to this, the p-value (0.000) of t statistic (20.91) of the slope coefficient of total PSL on gross NPAs is found to insignificant at five percent. Hence with a 95 percent confidence level, the null hypothesis that there is no considerable impact of total PSL on gross NPAs, cannot be established. Therefore, the results show that total PSL in nationalized banks has a positive effect on gross NPAs. The pooled regression model's F statistics are found to be 437.39 with a p-value (0.000). This indicates that the model is having a good statistical fit. The R square value of 70.16 percent suggests that 70.16 percent of the variance in nationalized banks' gross NPAs can be explained using the pooled regression model (Reddy, 2001; Shajahan, 1998; Agussalim et al., 2017).

Since there is underlining significant heterogeneity among the nationalized banks in India, and to test this Hausman's test is used. The results of the same are displayed in the below table 6. The results show that there is significant heterogeneity does not exist. Hence fixed effect model is used and result of which is shown in table 7.

Table 6
Summary of F test and Hausman test results (to study impact of PSL on gross NPAs)

F Test (Fixed Effect)			Hausman test (Random Effects)		
Test	Statistics	p value	Test	Statistics	p value
		(0.000)**			
Cross-section F	4.72		Cross section random	11.58	(0.000)**
Cross-section Chi-square	76.92	(0.000)**			

Table 7
Fixed effect model indicating the impact of total PSL on gross NPA

Dependent variable	Independent variable	Regression coefficients	t statistics (p value)	F statistics (p value)	R Square

Gross NPA	Total PSL	Intercept (α)	-2030.70	-7.00 (0.000)**		80.18 %
		Beta (β)	0.16	21.39 (0.000)**	35.77 (0.000)**	

It can be seen from the above table that total PSL have significant impact on gross NPAs of the banks. This model has also accounted for the cross bank heterogeneity. Also around 80 percent of variance in NPAs can be explained with this model as indicated by the R square value. Quality of loan asset is one of the important concerns for the banks. Results confirm that priority sector lending has considerable impact on gross NPAs of nationalised banks. This suggests deficiencies in the lending policy of banks (Shabbir & Mujoo, 2014; Maseleno et al., 2019). Banks need to base their lending decisions fairly on economic and financial guidelines to serve the meaningful purpose. Though combined fixed effect shows that PSL has a significant impact on gross NPAs but banks differ in the terms of asset quality. So in order to study that individual fixed effects of different banks are shown below.

Table 8
Estimated fixed effects showing the impact of total PSL on gross NPAs

S.No	Name of Bank	Effect
1	Allahabad Bank	228.1960
2	Andhra Bank	277.4074
3	Bank of Baroda	-2126.387
4	Bank of India	117.4254
5	Bank of Maharashtra	732.6887
6	Canara Bank	-4360.371
7	Central Bank of India	808.2218
8	Corporation Bank	-389.5127
9	Dena Bank	975.4892
10	Indian Bank	-318.2830
11	Indian Overseas Bank	941.1944
12	Oriental Bank of Commerce	-398.3150
13	Punjab and Sind Bank	1193.042
14	Punjab National Bank	-174.2201
15	Syndicate Bank	-829.2891
16	UCO Bank	1049.217
17	Union Bank of India	-859.7860
18	United Bank of India	2327.183
19	Vijaya Bank	561.6325

Estimated Fixed Effects Showing the Impact of Total PSL on Gross NPAs

The estimated fixed effect represents the level of NPAs even if total PSL of bank is zero. Banks having positive fixed effect represent that they are not capable to manage their level of NPAs. This is not a pleasant scenario for the banks as well as economy. As can be read from the above table, Andhra bank, Central Bank of India, Indian Overseas banks amongst others have dismal display of picture here, Many reasons can be chalked out for the same such as- poor credit appraisal procedures, inadequate monitoring, lending under political pressure as well as high exposure to government lending schemes. Consequently, asset quality of these banks is weaker with a higher loan loss provision. It can be seen PSL have lowered the quality of asset for these banks. There is an urgent need for policy upliftment on PSL as this affects not only the banks but the economy at large. Article a Study on Impact of PSL on Gross NPAS of Nationalized Banks: An Empirical Approach, supported by many articles and previous relevant variables, object, including: Capital: (Assagaf & Ali, 2017); (Agussalim et al., 2017); Resources: (Desfiandi et al., 2017); (Havidz et al., 2017); (Desfiandi et al., 2019); Bank: (Agussalim et al., 2017); (Ali et al., 2016); (Havidz et al., 2017).

Findings and Conclusions

We have seen a clear relationship between PSL and gross NPAs of nationalized banks in India. This indicates the banks' poor recovery policy, which may be due to policy impasses governing PSL. Banks suffer a great deal in such a granting policy. It was understood that a significant cause for the default and non-recovery had been the problems in identifying the beneficiaries. The problem with identifying the beneficiaries is the time crunch faced in disbursing the allotted funds to PSL. Thus proper scrutiny is required. . Apart from total priority sector lending, agricultural lending, lending to micro and small enterprises and PSL to others has also exerted a positive impact on gross and NPAs of nationalized banks. Among these segments of PSL highest impact is found in the case of agricultural lending (Leweharila et al., 2020; Jumali et al., 2019). In April 2015, RBI had removed the distinction between indirect and direct agriculture, which is expected to improve the situation. Now, loans to food and agro-processing units, namely short/medium/long term credit, loans for agricultural infrastructure, and ancillary activities, will be clubbed together. This is expected to make it easier for banks to achieve the 18% agricultural loan target and reduce the incidence of NPAs.

Suggestions

In order to ensure safe landing and avoid willful default, banks should opt for digital tracking of the borrower. This will also help in appraising those without a credit history. Digital tracking will allow banks to tap the necessary details of borrowers to see if there is a possibility of lending. All banks become careful and review the sanction of priority sector loans to minimize and mitigate increasing NPAs. Loan monitoring and supervision should be an essential feature of priority sector lending. The loan approval requirements need to be rigorous, and the RBI should try to monitor the process for loan disbursement closely. Banks should

tightly monitor the loan approvals through proper documentation. KYC is an effective way to the authenticity of borrowers.

It has been by the results; agricultural lending has the most significant impact on gross and net NPAs. So exceptional programmers should be undertaken for the structuring of agricultural lending. Agricultural insurance should be evolving as a crucial risk intervention mechanism. Agricultural insurance schemes should be made more effective and adequate. Apart from introducing such systems, the Government should try to encourage the development of alternative risk management instruments like contract farming and attract private sector participation to mitigate risk associate with this sector. These measures will help in reducing NPAs arising out of adversities associated with agriculture.

Acknowledgments

This research was supported by University Research Grant for Special Interest Group (GPU-SIG) with the reference number 2020-0148-106-01, Universiti Pendidikan Sultan Idris, Malaysia. We gratefully appreciate this support.

References

Abid, L., Ouertani, M. N., & Zouari-Ghorbel, S. (2014). Macroeconomic and bank-specific determinants of household's non-performing loans in Tunisia: A dynamic panel data. *Procedia Economics and Finance*, *13*, 58-68. https://doi.org/10.1016/S2212-5671(14)00430-4

Agussalim, M., Limakrisna, N., & Ali, H. (2017). Mutual funds performance: conventional and Sharia product. *International Journal of Economics and Financial Issues*, *7*(4).

Agussalim, M., Limakrisna, N., & Ali, H. (2017). Mutual funds performance: conventional and Sharia product. *International Journal of Economics and Financial Issues*, *7*(4).

Ahmed, J. U. D. (2010). Priority sector lending by commercial banks in India: A case of Barak Valley. *Asian Journal of Finance & Accounting*, *2*(1), 92. [10].

Ali, H., Limakrisna, N., & Jamaluddin, S. (2016). Model of customer satisfaction: The empirical study at Bri in Jambi. *International Journal of Applied Business and Economic Research*, *14*(6), 3527-3534.

Ali, M., Kan, K. A. S., & Sarstedt, M. (2016). Direct and configurational paths of absorptive capacity and organizational innovation to successful organizational performance. *Journal of business research*, *69*(11), 5317-5323.

Assagaf, A., & Ali, H. (2017). Determinants of financial performance of state-owned enterprises with government subsidy as moderator. *International Journal of Economics and Financial Issues*, *7*(4).

Assagaf, A., & Ali, H. (2017). Determinants of financial performance of state-owned enterprises with government subsidy as moderator. *International Journal of Economics and Financial Issues*, *7*(4).

Bhaumik, S. K., & Piesse, J. (2008). Does lending behaviour of banks in emerging economies vary by ownership? Evidence from the Indian banking sector. *Economic Systems*, *32*(2), 177-196. https://doi.org/10.1016/j.ecosys.2007.04.004

Chanana, M., & Gupta, K. (2016). Quality of work life and its impact on job performance: a study of SBI & HDFC banking professionals. *International Research Journal of Management, IT and Social Sciences*, *3*(5), 16-24.

Dasgupta, S., Laplante, B., Wang, H., & Wheeler, D. (2002). Confronting the environmental Kuznets curve. *Journal of economic perspectives*, *16*(1), 147-168.

Dave, D. K. (2016). A Study of Priority Sector Lending for Selected Public Sector Banks of India. *IJRAR-International Journal of Research and Analytical Reviews*, *3*(3), 84-86.

Desfiandi, A., Desfiandi, A., & Hapzi, A. L. İ. (2017). Composite Stock Price Index (IHSG) Macro Factor in Investment in Stock (Equity Funds). *International Journal of Economics and Financial Issues*, *7*(3), 534-536.

Desfiandi, A., Fionita, I., & Ali, H. (2017). Implementation of the information systems and the creative economy for the competitive advantages on tourism in the province of Lampung. *International Journal of Economic Research*, *14*(2), 123-139.

Desfiandi, A., Rajest, S. S., Venkateswaran, P. S., Kumar, M. P., & Singh, S. (2019). Company Credibility: A Tool To Trigger Positive Csr Image in the Cause-Brand Alliance Context In Indonesia. *Humanities & Social Sciences Reviews*, *7*(6), 320-331.

Desfiandi, A., Yusendra, M. A. E., Paramitasari, N., & Ali, H. (2019). Supply chain strategy development for business and technological institution in developing start-up based on creative economy. *Int. J. Supply Chain Manag*, *8*(6), 646-654.

Dimitrios, A., Helen, L., & Mike, T. (2016). Determinants of non-performing loans: Evidence from Euro-area countries. *Finance research letters*, *18*, 116-119. https://doi.org/10.1016/j.frl.2016.04.008

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of financial stability*, *20*, 93-104. https://doi.org/10.1016/j.jfs.2015.08.004

Havidz, S. A. H., Jianmu, Y., Aima, M. H., & Ali, H. (2017). Do bank specifics and macroeconomics determine banks' efficiency? Evidence from selected Asian Islamic Banks. *International Journal of Economic Research*.

Havidz, S. A. H., Jianmu, Y., Aima, M. H., & Ali, H. (2017). Do bank specifics and macroeconomics determine banks' efficiency? Evidence from selected Asian Islamic Banks. *International Journal of Economic Research*.

Jamil, F., & Ahmad, E. (2011). Income and price elasticities of electricity demand: Aggregate and sector-wise analyses. *Energy Policy*, *39*(9), 5519-5527. https://doi.org/10.1016/j.enpol.2011.05.010

Joshi, P. N. (1972). Financing of Priority Sectors by Commercial Banks. *The Journal of Indian Institute of Bankers*, *43*(1), 27-34.

Jumali, S. B., Sale, C., Domai, T., & Indrasari, M. (2019). Utilization regional assets in the framework of regional fiscal potential (Study of asset management in Blitar District). *J Adv Res Dyn Control Syst*, *11*(7), 249-256.

Leweharila, N. M., Lebang, N. L., Johannes, V., Kastanya, F. C. J., Nanuru, R. F., & Laisila, M. (2020). Study of slope vulnerability and landslide potential on gang singa region–Ambon city. *J Adv Res Dyn Control Syst. doi*, *10*.

Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*, *36*(4), 1012-1027. https://doi.org/10.1016/j.jbankfin.2011.10.012

Maseleno, A., Huda, M., Jasmi, K. A., Basiron, B., Mustari, I., Don, A. G., & bin Ahmad, R. (2019). Hau-Kashyap approach for student's level of expertise. *Egyptian Informatics Journal*, *20*(1), 27-32.

Mathur, S. C., & Tannan, S. K. (1999). Future of Indian pesticides industry in next millennium. *Pesticide information*, *24*(4), 9-23.

Meeker, L. G., & Gray, L. (1987). A note on non-performing loans as an indicator of asset quality. *Journal of banking & finance*, *11*(1), 161-168. https://doi.org/10.1016/0378-4266(87)90028-8

Mehta, L., & Malhotra, M. (2014). Empirical Analysis of Non Performing Assets Related to Private Banks of India. *International Journal of Management Excellence*, *3*(1), 386-391.

Mishra, A. K. (2016). An analysis of NPAs in priority and non-priority sectors with respect to public sector banks in India. *IOSR Journal of Business and Management (IOSR-JBM), e-ISSN*.

Narasimham, M. (1998). Financial Sector Reforms: The Unfinished Agenda. *Financial Sector Reforms: Tax System and Development*, *3*, 3.

Pandya, B. (2015). Impact of priority sector advances on bank profitability: Evidence from scheduled commercial banks of India. *BVIMSR's Journal of Management Research*, *7*(2), 75-81.

Ramcharran, H. (2017). Bank lending to small business in India: Analyzing productivity and efficiency. *The Quarterly Review of Economics and Finance*, *65*, 16-24. https://doi.org/10.1016/j.qref.2016.06.003

Rastogi, S., & Singh, M. V. (2017). Analysis Of Public And Private Sector Banks Performance Using Camels Model: A Longitudinal Study. *International Journal of Research in Economics and Social Sciences (IJRESS)*, *7*(11).

Reddy, Y. V. (2001). Indian Agriculture and Reform: Concerns, Issues and Agenda. *Indian journal of agricultural marketing*, *15*(1), 1-9.

Selige, T., Böhner, J., & Schmidhalter, U. (2006). High resolution topsoil mapping using hyperspectral image and field data in multivariate regression modeling procedures. *Geoderma*, *136*(1-2), 235-244. https://doi.org/10.1016/j.geoderma.2006.03.050

Shabbir, N., & Mujoo, R. (2014). Problem of Non-performing Assets in priority sector Advances in India. *Journal of economics and development studies*, *2*(1), 241-275.

Shabbir, N., & Mujoo, R. (2014). Problem of Non-performing Assets in priority sector Advances in India. *Journal of economics and development studies*, *2*(1), 241-275.

Shajahan, K. M. (1998). Priority sector bank lending: some important issues. *Economic and Political Weekly*, 2749-2756.

Shajahan, K. M. (1998). Priority sector bank lending: some important issues. *Economic and Political Weekly*, 2749-2756.

Suartawan, I. G. N. P. A., & Artini, L. G. S. (2019). A comparative study on domestic and foreign equity funds in Indonesia. *International Research Journal of Management, IT and Social Sciences*, *6*(4), 54-61.

Us, V. (2017). Dynamics of non-performing loans in the Turkish banking sector by an ownership breakdown: The impact of the global crisis. *Finance Research Letters*, *20*, 109-117. https://doi.org/10.1016/j.frl.2016.09.016

Yacob, S., & Sucherly, S. D., Mulyana, A., & Ali, H.(2020). An Optimising strategy for minimarket modern retail business performance in Indonesia. *International Journal of Innovation, Creativity and Change*.

Yunus, E., & Indrasari, M. (2017). Opportunities and challenges of tourism industry. *International Journal of Economic Research*, *14*(7), 277-291.