

## **Analysis of bad loans of Indian banks and its impact on their profitability**

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### **Keywords**

Bad loans;  
Bank;  
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VAR.

### **Abstract**

The main source of growth for Indian Economy is from Banks. NPA (Non-Performing Asset) is a critical factor which has adversely impacted the development and growth of the banks. This research focuses on the relationship between NPAs of a high profit and a low profit bank to suggest on effective management of NPAs. The study covers the period from 2007 to 2021. The research applied unit root test, Vector Auto Regression, and impulse response function to compute the relationship between different net profits and NPAs. From the study, it can be concluded that there is an effect of bad loans on the profitability of the banks but there are some other factors (like interest rates, etc.) too that has a huge impact on the profitability of the banks.

### **Introduction**

A nonperforming asset (NPA) is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days. The public sector banks provide major portion of the credit to industries which forms a great portion of accumulated NPA. The priority sector lending (PSL) sector including agriculture, education, housing, MSMEs and the banks issuing unsecured loans have contributed substantially to the rise in NPAs.

The RBI direction on referring companies to the National Companies Law Tribunal (NCLT) to resolve the NPA issue could help tackle the NPA menace to a great extent. While the action plan details are being worked out, the process has already been initiated for a few cases. Yet, the concern on how to resolve the NPA issue is still not out of the woods.

Wadhwa, R., Ramaswamy, M. K., & Fin, S. M. (2020). conducted study where they analyzed the data of NPA of five well performing banks and the data was collected for the past five years. This research is conducted in India, and the data collected covers the past 15 years and to widen the span of the research. The data was taken from the highest performing bank and the lowest performing banks in terms of their operational profitability.

The body of this paper is organized as follows. Section 2: Literature Review Section 3: research methodology. Section 4: data analysis and interpretation. Section 5: Conclusion and limitations

## **Literature Review**

Numerous academics have studied non-performing assets (NPA) in the banking sector. Such as nonperforming credits can be estimated utilizing nonperforming advances or all out advances, and benefits can be estimated utilizing ROTA (Return on Total resources). It is stated that the benefits of private banks were not impacted by the measure of credit and nonperforming advances as that different factor other than credit and nonperforming credits sway on benefits (ANGELA M. KITHINJI, 2010). GRACE N. MWANGI (2010) analyzed if there is impact on credit risk management on the financial performance of commercial banks. It is found that there exists a relationship between financial performance and credit risk management.

Furthermore, banks profitability is inversely influenced by the levels of loans and advances. It found that non-performing loans and deposits are exposing the banks to liquidity risk, and distress. (Hamisu Suleiman Kargi, 2011).

The banks are advised to follow judicious credit hazard control board and shielding the resources of the banks and secure the interests of the partners (Yuga Raj Bhattarai, 2015). Following a thorough credit assessment in the loaning system contributes towards the bank's execution and

work intensity (Ephias Munangi, Athenia Bongani Sibindi, 2020). Selim Elekdag Sheheryar Malik Srobona Mitra, (2020) found out that nondiscretionary LCOs are positively linked to banks' future systemic risk, whereas discretionary LCOs are negatively correlated with banks' future systemic risk. These effects are driven by two economic mechanisms: banks' common risk exposure and interconnectedness. Revamping business models could improve profitability for some banks, suggesting the need for custom-tailored approaches. Justin Y. Jin, Mary L.Z. Ma, Victor Song, Mengyang Guo (2021) investigated the statistical relationship between the credit risk management indicators and financial performance of the public sector commercial banks. It was found that credit risk management measures have statistically significant impact on the financial performance of the banks. (Liaqat Ali, Sonia Dhiman, 2019). The study by Wadhwa, R., Ramaswamy, M. K., & Fin, S. M. (2020) have focused on NPA of five well performing banks and the data was collected for the past five years. This research is conducted in India, taking the data for past 15 years. Though this work is similar to Wadhwa, R., Ramaswamy M. K., & Fin, S. M.(2020) from the research objectives and the variables undertaken. Yet it is different from the basis of selecting the variables as only one high and low profit bank is taken for the study and the study period is three times longer that will to some extent justify in generalizing this study's key findings.

## **Research Methodology**

Secondary data was collected from the RBI database for the past 15 years of SBI and Sonali banks. SBI and Sonali bank were selected based on their high and low operational profitability(referred Income statement data from the EMIS database)

The tests used for the research are as follows:

- ) Augmented dicky fuller test to find the stationarity of the data

**Data Analysis and Interpretation**

- ) Vector Autoregression test to access the short run relation
- ) Impulse response test to find changes in the responses based on lags estimated when a shock is introduced.

Augmented Dickey-Fuller Unit Root Test on SBI Bank

Table 1

t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic -6.148104 0.0003	
Test critical values: 1% level	-4.057910
5% level	-3.119910
10% level	-2.701103

Source: (secondary data)

From table 1 and 2, it can be seen that the calculated value is greater than table value at 1%, 5%, and 10% significance level at the second

difference. Hence, it is found that both the series do not have unit root problems.

Table 2 : Augmented Dickey-Fuller Unit Root Test on Sonali bank

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic -6.537003 0.0002</b>		
<b>Test critical values:</b>	1% level	-4.057910
	5% level	-3.119910
	10% level	-2.701103

Source : secondary data

Table no. 3: Vector Autoregression Estimates

	SONALIL	SBIL
SONALIL(-1)	1.009131	0.115939
	(0.68474)	(0.49444)
	[ 1.47374]	[ 0.23448]
SONALIL(-2)	0.307199	0.857449
	(0.71872)	(0.51898)
	[ 0.42743]	[ 1.65220]
SBIL(-1)	-0.108394	0.708798
	(0.75567)	(0.54566)
	[-0.14344]	[ 1.29897]
SBIL(-2)	-0.310888	-0.690154
	(0.68767)	(0.49656)
	[-0.45209]	[-1.38987]
C	1.454527	0.984652
	(0.92582)	(0.66853)
	[ 1.57106]	[ 1.47287]

R-squared            0.919429    0.968070  
 Adj. R-squared    0.883620    0.953879  
 Sum sq. resid     0.727821    0.379493

Source: secondary data

Wald Test:  
 System: Untitled

Test Statistic	Value	df	Probability
Chi-square	3.739487	2	0.1542

Null Hypothesis: C(1)=C(2)=0  
 Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(1)	1.009131	0.684740
C(2)	0.307199	0.718716

Restrictions are linear in coefficients.

Wald Test:  
 System: Untitled

Test Statistic	Value	df	Probability
Chi-square	0.440023	2	0.8025

Null Hypothesis: C(3)=C(4)=0  
 Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(3)	-0.108394	0.755674
C(4)	-0.310888	0.687673

- Restrictions are linear in coefficients.

Using Wald test on the coefficient of the VECM, it is found that there is an existence of a short-run relation between the NPA of the SBI and Sonali

Bank (p-value is more than 5%). VECM model is robust from the high R-square value (Table 3).

**Impulse response test**

It is found that from one standard deviation shock or impulse or innovation introduced to NPA of SBI bank will result in increase in profitability up

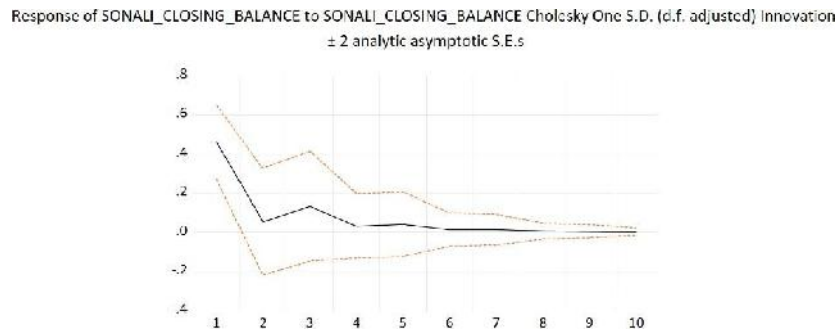
to the 2nd period and from 2.5th period onwards it decreases(Figure 1). But in the case of Sonali bank (Fig 2), it is showing unstable results. It is due to the profitability of the Sonali bank being affected when a shock is introduced.

Figure 1



Source: secondary data

Figure 2



Source secondary data

**Conclusion**

NPA is a critical factor which has adversely impacted the financial sector of banks. It affects flow of credit that impacts the development and growth of the bank dependent economy. From the study it was found that the public banks had higher NPA compared to the private banks. The relationship of NPA of SBI banks seems stable compared to the Sonali bank. Therefore, it can be concluded that Sonali bank’s profitability is constantly affected by NPA. Even though there is no long-run relation between the selected banks

(the series is stationary at second difference under Augmented Dickey-Fuller test) yet it is found that there is a short-run relation between the variables. The banks are therefore advised to become proactive and should be ready to take tough measures so that it can recover from negative NPAs. The research also showed that NPA alone cannot be a measure for deciding or analyzing the health of a bank. For future research, more banks from the public and private sector can be taken. Macroeconomic factor can also be considered for further research.

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