THE IMPACT OF DOMESTIC AND GLOBAL ECONOMIC VARIABLES ON GROSS NON-PERFORMING ASSETS OF SCHEDULED COMMERCIAL BANKS IN INDIA

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ABSTRACT

The banking industry in India is currently burdened with challenge of managing huge and surging GNPAs. The Gross Non-Performing Assets (GNPA) is one of the important indicators measuring the financial stability and performance of a banks in an economy. Empirical evidences of research suggest that many macroeconomic and Bank specific variables impact the GNPA of Banks. Since the time India opened up its economy (1991) the economy is not only affected by the domestic factors but also by the global economic factors as a result of trading and investment activities with the foreign countries. In this study a few selected economic indicators of the major trading partners China, U.S & U.A.E are considered as external variables. The domestic economic indicators as internal variables. The impact of these variables on the GNPA's of the Indian banks and also impact of factors varies between the Public and private sector banks are analyzed. The study period is from 2010 to 2020 and the variables are assessed through descriptive Statistics and Correlation. The study reveals that the impact of the external and internal factors had a similar effect on the NPA's of the public and private sector banks. There is high causal relationship between GNPA's of scheduled commercial banks of India and the variables such as GDP of India. Export of India, Import of India, Inflation of India, Lending rates of India, Official exchange rate (UD \$). In external variables, there is a high causal relationship between the GNPA's of scheduled commercial banks of India and variables such as GDP of U.S &China. There is low causal relationship with other variables.

Keywords: Gross Non-Performing Assets, Domestic economic factors, Global economic factors, Trading

partners, Scheduled commercial banks,India.

Introduction

As per Indian Financial Services Report,2021, Over 64% of the total assets in the financial system in India are held by commercial banks. Therefore, stable and healthy banking system and a conducive capital market becomes critical for the stability and growth of the economy. Currently the banking industry in India is burdened with challenge of managing huge and surging GNPAs. The Gross Non-Performing Assets (GNPA) is one of the important indicator in measuring the financial stability and performance of banks in an economy. The persistent Non-Performing loan burden weighs down the scheduled commercial banks.

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In the past decade (2010-2020), Government of India had to encounter major crises emanated from the banking industry, notably the crises that involved Punjab National Bank, Punjab and Maharashtra Co-operative banks. Private banks too, such as YES Bank had to be rescued due to its mounting Non-Performing Assets. The magnitude of the NPA problems have forced the Government to consolidate banks, as a result the public sector banks have been reduced to 12² from 27 banks and also a proposal to privatize few public sector banks have also been initiated by the government (Indian Banking Services Report,2021). Thus NPA problems have been a major concern for a long time and posing a major threat to the health of the Indian banking industry.

The term NPA means the credit facilities or loans extended by the banks for which the interest and /or instalment of principal has remained 'past due' for at least a quarter or 90 days³ (Tamal Bandyopadhyay,2021). The income earned by the bank is ceased as a result of NPA's, burdening the banks in servicing their debts and non-repayments erode capital.

Historical evidences suggest that the Bank's lending behavior is pro-cyclical in nature; Banks tend to lend aggressively when the economy is in uptrend and the lending shrinks during the period of downturn in the economy. This behavior of banks coupled with the changes in the macroeconomic variables is one of important reason for the creation of Non-Performing Assets⁴(Pallavi Chavan and Leonardo Gambacorta ,2016)

India is no longer decoupled from the world. The economic reforms of 1991 have opened up the Indian economy to Liberalization, privatization and Globalization. Thus Indian economy is impacted by the global economic factors and NPAs are not an exception as they too have an indirect impact of the international/global economic factors.

The researcher has explored few global economic indicators of select countries, China, United States of America and United Arab Emirates, as they have been a major trading partners of India. Few select domestic economic indicators were considered as internal factors and select global economic indicators were taken as external factors. The domestic economic indicators (internal factors) considered in this study include export as a per cent of GDP, import as a per cent of GDP, official foreign exchange rate (U.S.\$), Inflationrate, lendingrate of banks, GDP (current). Global economic indicators (external factors) taken are GDP &Inflation of U.S. China and U.A.E

The researcher has used the secondary data for analysis. The data was collected from the published statistics of Reserve Bank of India and World bank. The researcher has applied the descriptive statistics and correlation. Correlation coefficients are used to assess the causal linear relationships along with its strength and direction between two or more pairs of variables. The impact of domestic and global economic factors on the GNPA of Indian banks is studied for the period of 2010-2020 and also studied whether the factors impact varies between public and private sector banks.

Review of Literature

A study by (Chandrasekhar c.p., & Jayati Ghosh,2019) shows that, the Public Sector banks were burdened with a huge bad loans problem during 1992-93, nearly 23.1 per cent. It further augmented to 24.8 per cent in 1993-94. During early 1990's Banking crises have added more fuel to the problems faced by the economy which was already burdened with the Balance of Payment crisis and economic crisis. One of an important reason for the banking crisis during 1990's was the loan melas of the banks, which started after the nationalization of private banks, in 1969 and 1980. A world bank working paper (1989) elucidated the loan melas: Melas are public meetings where thousands of households were provided bank loans at the ceremonies conducted by the politicians. The Politicians were involved in identifying the beneficiaries and applications were submitted on their behalf to the banks (Pulley,1989). The Government decided to waive off these loans through Agricultural and Rural Debt Relief Scheme(ARDRS), 1990. It shows that the Bad loan problems were persisted and accumulating over the years till today's date (Vijay Mahajan,2019)

The era of easy money policy and government spending between 2009 and 2011 were continued after the recovery of economy from the global financial crises have led to high inflation, and a subsequent slowdown of the economy due to high interest rates targeted to control inflation. Also when the government borrow and spend more to stimulate the economy, the banks would be left over with the little money to lend to other private corporates, thus increasing the interest rates. The weighted average lending rate that was 10.5 per cent in 2009-10 have surged to 12.8 per cent in 2011-128 (Vivek Kaul,2020). High interest rates have reduced the ability of many industries to service their debt as these industries were already struggling because of the slow economic growth. The above mentioned factors have collectively led to the accumulation of the NPA's in the Indian banks, Public sector banks in particular.

The Economic Survey of 2016-17 elucidates that the 'rupee depreciation against dollar has substantially affected the industries that had foreign currency borrowing. Borrowings had happened when the rupee was trading at Rs.40/dollar, and these industries were later had no choice other than repaying their debts at the exchange rate of Rs.60-70/dollar. The reason for this rupee depreciation was that the investors from abroad had withdrawn their money after the financial crisis of 2008 and also because of the persistent high inflation experienced by the Indian economy had impacted the exchange rate.

The Economic Survey of 2016-17 further explained that the international steel prices collapsed due to the slowdown in the Chinese economy. The Chinese steel industry with a massive production capacity and huge inventory experienced a crash in the domestic demand and had an agenda of aggressive exports which affected the Indian steel industry to great extent. Indian steel companies suffered huge losses. In late 2016's the interest coverage ratio of these steel companies fell to Zero, disabling these companies to repay their debt. In spite of government extending their support to these companies by imposing anti-dumping duties and minimum support price for steel, many companies could not survive beyond this period. Thus global economic factors too have a significant impact on NPA's of the Indian banks. The MIP (Minimum Import Price)that was imposed by the government of India to counter the dumping of the cheap steel from china had its own consequences. Mr.T.S. Bhasin, then chairman of engineering goods exporters body said that: 'The MIP will raise the cost of raw material for engineering products by 6-10 per cent 'which in turn affects the export business.

The literature of (Gokul Kumar, Jayantha & Prasanth, 2017) analyses the institutional specific determinants and macroeconomic variables impact on GNPATA (Gross Non-Performing Assets to Total Assets) of new private sector banks. The multiple correlation tests showed that GDP growth rate and unemployment rate had positive relation with GNPATA. Whereas, Inflation and money supply had negative relation with NPL (Non-Performing Loans). The Granger Causality test result showed that all institutional specific factors don't granger cause the GNPATA such as Capital Adequacy Ratio, Cash Reserve Ratio, Prime Lending Rate, Statutory Liquidity Ratio, Repo Rate and Reverse Repo Rate. Whereas the Macro-economic factors such as Inflation Rate, GDPGR and Money Supply don't granger cause the GNPATA. Unemployment Rate alone granger cause the GNPATA.

According to (Biswajit Patra, & Puja Padhi,2016) the determinants of NPA's categorized as institutional determinants and macroeconomic determinants. Institutional and macroeconomics factors have diverse effects on NPA's among different categories of banks. The SBI (and its associates) and nationalized banks sensitivity to the macroeconomic factors are high and similar. The private banks are sensitive to both institutional and macroeconomic factors. The foreign banks are very less sensitive to the macroeconomic factors. The Indian banking industry is facing more NPA problems than the foreign banks based in India. The bank management has to be updated and follow cautiously the fundamentals of macroeconomics, the Regulators policy and the banks internal management decisions to reduce the NPA problems in banks.¹¹

Analysis and Interpretation of the Study

Sources and Methodology of the Study

Secondary data is used to analyze the impact of the domestic and global economic factors on the Gross Non-Performing Assets. The selected economic factors are sourced from the published materials of Reserve Bank of India and World Bank. Descriptive analysis and correlation are used as statistical tools to analyze the causal relationship between the dependent and the independent variables for the study period from 2010-2020. The Rule of Thumb used in interpreting the size of the correlation coefficient as very high correlation, high correlation, moderate, negligible and low correlation are referred from Hinkle DE, Wiersma W, Jurs SG (2003)¹². The dependent variable is Gross Non-Performing Assets to Total Assets of the All Scheduled Commercial banks, Public Sector Banks, Private Sector Banks of India. The independent variables are selected domestic and global economic factors.

Analysis of the Study

Gross non-performing assets to total gross assets are the value of nonperforming loans divided by the total value of the loan portfolio (including nonperforming loans before the deduction of specific loan-loss provisions). The domestic macro-economic factors are taken as internal variables and the foreign or global macro-economic factors of India's major trading partners such as china, U.S and U.A.E were considered as external variables. The select domestic economic indicators (Internal) include Exports of goods and services (per cent of GDP), Imports of goods and services per cent of GDP), GDP(current), Inflation, consumer prices (annual per cent), Lending interest rate (per cent), Official

exchange rate (US\$, period average). The select global economic indicators (external) include GDP (current) of U.S., GDP(current) of China, Inflation, GDP (current) of U.A.E., Inflation, consumer prices of U.S. (annual per cent), Inflation, consumer prices of China (annual per cent) and Inflation, consumer prices of U.A.E (annual per cent) are considered as external factors

The existing literatures has explained the relationship between the domestic economic factors and the global economic factors on the gross non-performing assets as, the growth in GDP denotes an increase in income for an economy. Improved income increases the ability of the borrowers to repay their debt, thus decreasing NPA's of banks. Excess of Exports over imports denotes trade surplus, which eventually improves the GDP. Therefore, exports have a favorable effect in reduction of NPA's of banks. While imports of certain goods reduces the price to the consumers, it can affect the domestic industries producing such goods which impacts their earnings negatively, eventually reducing their ability to repay their debts. Excess imports reduces Trade surplus sometimes result in trade deficit which results in the reduction of GDP. Thus reduced income can contribute to an increase in NPA's. Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. High interest rates can increase the debt burden of the borrowers resulting in default thereby increasing NPA's. Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages. As discussed earlier, depreciation of rupees against any foreign currency leads to increase NPA's in the short run but can enable a reduction in NPA's in the long run provided Marshall - Lerner condition is met.

Inflation is a persistent increase in price level over time. An inflation rate within the target zone of the central bank does not harm the economy. High uncontrolled inflation poses a serious threat to an economy. Inflation affects the NPA in multiple ways. Inflation favours the borrowers at the expense of the lender as the value of the money has diminished. The inflation increases prices including wages. Higher wages enable the borrower to repay the debt which can reduce NPA's. Inflation erodes the purchasing power of a currency, thereby depreciating the currency against other foreign currencies. Currency depreciation has two aspects. First, the Currency depreciation can make the exports of a country more competitive thereby increasing exports. Imports become expensive leading to a fall in the imports resulting in a favorable trade balance. Favorable trade balance leads to an increase in GDP thereby reducing NPA's. Second, the currency depreciation can increase the exports and decrease imports only when the elasticity of the exports and imports are high (Marshall - Lerner condition). Even in case of high elasticity of exports and imports, increase in exports will not be possible in the short run as the factors of production should be adjusted to produce more to increase exports but the imports becomes expensive immediately creating an unfavorable trade balance weighing down the GDP, which eventually results in an increase of NPA's in the short run. High inflation can push the cost of production higher and higher inflation differentials between trading partners can affect export competitiveness. The policy action of the monetary authority to control inflation may lead to an increase in the interest rate in an economy. High interest rates can induce defaults, increasing NPAs.

It is widely accepted that the benefits of the international trade are greater than the costs for an economy as a whole. Economic theories of absolute advantage and comparative advantage supports this view. Therefore, the health of the trading partner's economy becomes important.US, China & U.A.E being India's major trading partner, GDP of these economies impacts India's economy and NPA in two aspects. Firstly, a slowing economy might affect the buoyant trade. India is dependent on its trading partners for finished products as well as inputs for many of its industries including active pharmaceutical ingredients and other chemicals. They also happen to be the market/potential market for many of our exports. Therefore, the GDP growth of the trading partners can ensure demand for our exports and uninterrupted supply of inputs and finished goods. This can support the Indian industries and economy which in turn can reduce NPA's. Secondly, US and China happens to be the two largest economies which has a substantial impact on the global economic growth. A slowdown in these two economies might result in a global slowdown and its subsequent recovery. Therefore, the GDP growth of these trading partners have substantial impact on the Indian economy thereby affecting NPA's.

High inflation of the trading partners has the potential to create domino effect in India and the subsequent policy actions initiated by the authorities to control the high inflation can affect the Indian economy which in turn affects NPA. India might import more inflation from the trading partners as the cost of raw materials and other imported goods becomes higher. The effects of the high domestic inflation were discussed in the earlier section. The policy action initiated by the monetary authority, an interest rate hike, especially by a country like US can cause a ripple effect in India. This policy action can

lead to flight of capital from India and India being a capital deficient economy gets negatively affected by this policy action. If the Indian monetary authority responds to counter the inflation / policy action of US by increasing the domestic interest rates, it can prevent/reduce the flight of capital, but the consequences of higher domestic interest rate and inflation (discussed in the previous section) will impact the economy and NPA's.

Interpretation of the study

 Interpretation on the descriptive analysis of the GNPA's of All scheduled commercial banks, public sector banks and private sector banks

Table:3 explains that the average GNPATOTA for the overall scheduled commercial banks for the study period 2010-20 is 6.16 with the deviation from the mean is 3.24. The minimum NPA is 2.20 in the year 2010-11 and the maximum NPA is 11.20 in the year 2017-18. The average GNPATOTA for the public sector banks are higher compared to private sector banks during the study period of 2010-11 as 7.57 with the deviation from the mean is 4.41. The minimum NPA is 2.20 in the year 2010-11 and the maximum NPA is 14.60 higher compared to the private sector banks in the year 2017-18. The average GNPATOTA for the private sector banks are higher during the study period of 2010-11 as 3.22 with the deviation from the mean is 1.52. The minimum NPA is 1.80 in the year 2012-13 and 2013-14, and the maximum NPA is 5.50 in the year 2019-20.

- Interpretation on the correlation analysis between the GNPA's of All scheduled commercial banks, public sector banks and private sector banks and the domestic and global economic variables
- o All Scheduled Commercial Banks

In Table:4, The factors such as GDP(I), GDP (U.S) has very high positive correlation on GNPATOTA. The GDP (C), TA and EXRATE(/U.S.\$) has high positive correlation on GNPATOTA.LNRATE, IMPORTS, EXPORTS, INF(I) has high negative correlation.GDP(UAE) has low positive correlation.INF (C) has low negative correlation.INF (U.S) and INF(UAE) are negligible.

o Public Sector Banks

In Table:4,The factors such as GDP(I), GDP (U.S) has very high positive correlation on GNPATOTA. The GDP (C), TA and EXRATE(/U.S.\$) has high positive correlation on GNPATOTA.LNRATE, IMPORTS, EXPORTS, INF(I) has high negative correlation.GDP(UAE) has low positive correlation.INF (C) has low negative correlation.INF (U.S) and INF(UAE) are negligible.

o Private Sector Banks

In Table:4, The factors such as TA, GDP(I), GDP (C), GDP (U.S) has very high positive correlation on GNPATOTA. LNRATE has very high negative correlation on GNPATOTA. The EXRATE(/U.S.\$) has high positive correlation on GNPATOTA. EXPORTS has high negative correlation. IMPORTS, INF(I), INF(UAE) has moderate negative correlation on GNPATOTA.GDP(UAE) has low positive correlation.INF (U.S) INF (C) are negligible.

Findings and Conclusions

Findings of the Study

The empirical findings of the study explain that NPA's of Public Sector Banks are higher than the private sector banks. The Standard Deviation of NPA's in public sector banks found to be higher than private sector banks for the study period. The study also identifies that there is a sudden spike in the NPA of public sector banks during 2015-16 as they have increased to 9.3 per cent from 5 per cent in the year 2014-15. Oneof the possible explanation for the spike could be the pressure from the regulator during this period to disclose the NPA's (accumulated over a period of time) that were hiding in the form of restructured loans. Accumulated NPA's were hidden in the account books of the banks until the Asset Quality Review done in 2015-16 by the RBI under Governor Dr. Raguram Rajan.

The GDP of India, china, U S and UAE are positively correlated with NPA. One possible explanation could be that banks tend to lend more during an uptrend. They might become lenient and little generous in lending as they are optimistic about the business and economy. Also the competition among the banks for the market share during good economic conditions might also compel the banks to get lenient in lending thus resulting in increased NPA. Total Advances exhibits positive correlation on NPA. As discussed above, Total advances tend to increase during an uptrend in an economy, which can increase NPA's. NPA's have fallen when the lending rates were very high. It has a high negative correlation with NPA's. The possible explanation could be the increased interest rate is a resultant of high inflation. Increased earnings during a high inflation period have resulted in lesser defaults thereby reducing NPA's.

During the study period Imports has a negative casual relation with the NPAs. Imports have declined but exports too have fallen leading to an unfavorable trade balance weighing down GDP. Exports have a negative casual relation with NPA, decrease in exports results in higher NPA's. Currency depreciation is positively correlated with NPA's. When Indian currency depreciates (rupee depreciates against dollar) the repayment burden on the foreign currency loans have increased resulting in higher NPA's. GDP(UAE), inflation of china is less correlated. Inflation in U.S and U.A.E are negligible which shows that India is resilient and can manage the imported Inflation in much better way.

During the first half of the study period (2010-15) Total advances of the public sector banks have been higher than the Private banks and vice versa in the second half of the study period (2015-20). It has been observed that the NPA's of both the public sector and private banks have increased during the second half of the study period (2015-20). The impact of the external and internal factors had a similar effect on the NPA's of the public and private sector banks.

Conclusion of the Study

The Reserve Bank of India and Government had initiated many reforms and policy actions for addressing the NPA issue of banks over the years and have implemented many with varying degree of success

- Established Central Repository of Information on large Credits(CRILC). The purpose is that all the banks can have the information about the borrowers of large credits above 5 crores.
- Formation of Joint Lenders Association among banks have helped the banks to be proactive and prevent the further increase in the NPA's. Banks should identify the stress assets under the three sub categories of Special Mention Account: SMA0 SMA 1 &SMA2.
- RBI in collaboration with SEBI had initiated Strategic Debt Reconstruction Scheme which enables the debt to be converted into equity.
- RBI had initiated the Asset Quality Review of the banks in the year 2015-16 which resulted in the disclosure of accumulated NPA's that were not disclosed earlier.
- The government had also initiated Indradhanush reforms, which reformed critical areas in public sector banks which include splitting the post of Chairman & MD, Infusion of capital into PSB's, setting up of six new Debt Recovery Tribunals etc.
- Enacted the Insolvency & Bankruptcy Code,2016 (IBC) which paved way for bankrupt companies to exit so that the assets could be sold and better recovery was possible.
- The government has come up with the establishment of National Asset Reconstruction Company and limited. It creates secondary markets for NPA's. India Debt Resolution company limited is evolving to develop the expertise to deal with stressed assets and reduce the procedural delays.
- Prepackaged insolvency resolution process for MSME's is the most recent development in speeding up stressed assets solution.

Although the RBI and the government had initiated many reforms in the past, the Insolvency and the Bankruptcy code has helped to reduce the NPA problems to a great extent. Consolidation of banks though has its own advantages and disadvantages helped in the better absorption of the banks with severely stressed asset problems. Asset Reconstruction Company can be instrumental in reducing the NPA problem as it will enable the banks to get rid of the bad loans from their Balance Sheet and enable fresh lending.

One of the limitation of the study is its dependence on the secondary data. Though the data is collected from the official published sources, the data for the period before the Asset Quality Review might suffer from nondisclosures. The inferences and the relationships are limited to the study period. A study conducted for a different time period might exhibit different relationships and inferences.

Further research can be done for the subsequent years with sophisticated statistical stools and manyother domestic and global economic indicators can be included for more insight into the variables and its relationships.

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Tables of the Study

Table 1: Abbreviations

ASCB	ALL SCHEDULED COMMERCIAL BANKS
PSB	PUBLIC SECTOR BANKS
PVTSB	PRIVATE SECTOR BANKS
GNPATOTA	GROSS NON PERFORMING ASSETS TO TOTAL ADVANCES
TA	TOTAL ASSETS
LNRATE	LENDING RATES
IMPORTS	IMPORTS
EXPORTS	EXPORTS
EX RATE US	EXCHANGE RATE
INF(I)	INFLATION (INDIA)
GDP(I)	GROSS DOMESTIC PRODUCT(INDIA)
INF (C)	INFLATION (CHINA)
INF(U.S)	INFLATION (U.S)
INF (UAE)	INFLATION(UAE)
GDP (C)	GROSS DOMESTIC PRODUCT(CHINA)
GDP (U.S)	GROSS DOMESTIC PRODUCT(U.S)
GDP(UAE)	GROSS DOMESTIC PRODUCT(U.A.E)

Table 2: Rule of Thumb used in Correlation Analysis

0.9-1	very High Correlation	
0.7-0.9	high correlation	
0.5-0.7	moderate	
0.3-0.5	low	
0.0-0.3	negligible	

Table 3: Descriptive Analysis of Scheduled Commercial Banks for the period 2010-20

GNPATOTA	ASCB	PSB	PVTSB
Mean	6.16	7.57	3.22
Standard Error	1.03	1.40	0.48
Standard Deviation	3.24	4.41	1.52
Range	9.00	12.40	3.70
Minimum	2.20	2.20	1.80
Maximum	11.20	14.60	5.50
Sum	61.60	75.70	32.20
Count	10.00	10.00	10.00

Table 4: Correlation Analysis of Scheduled Commercial Banks for the period 2010-20

VARIABLES	ASCB	PSB	PVTSB
TA	0.86	0.84	0.96
LNRATE	-0.89	-0.89	-0.92
IMPORTS	-0.76	-0.76	-0.70
EXPORTS	-0.84	-0.83	-0.77
EXRATE US	0.79	0.79	0.77
INF(I)	-0.81	-0.80	-0.62
GDP(I)	0.95	0.95	0.94
INF (C)	-0.42	-0.41	-0.13
INF(U.S)	0.03	0.04	0.10
INF (UAE)	-0.14	-0.14	-0.54
GDP (C)	0.89	0.89	0.90
GDP (U.S)	0.92	0.92	0.92
GDP(UAE)	0.47	0.48	0.34

