An insight into the Non-performing Assets of Indian Commercial Banks

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Abstract: This paper is a modest attempt to examine the Non-Performing Assets (NPAs) of Indian commercial banks from different dimensions. Secondary data on 40 listed Indian commercial banks were collected from 'Capitaline Plus' corporate database for a period of 10 years from 2009 to 2018. The study's findings indicate an increasing trend of both gross and net NPA ratios of Indian scheduled commercial banks over the years during the study period. The role of big corporate borrowers in this accumulation of NPAs is very important. In this respect, the study finds that the performance of Public Sector Banks (PSBs) (both large and small banks) was very serious in respect of bad loans in comparison to Indian Private Sector Banks (PrSBs). Overall the results indicate that the quantum of NPAs is an alarming factor for the stability of Indian commercial banks in general and PSBs in particular. There is a need to introduce further reformative steps to manage the bad loan portfolio of Indian commercial banks and to build a resilient banking system.
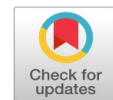
INTRODUCTION

The growth and development of any economy depends upon its stable and sound banking system. Bank stability has long been a focal point for both bank regulators and policy makers as the extent of risk affects the solvency of bank at the micro level and viability of the economy at the macro level (Manab, Theng, & Md-Rus, 2015; Rime, 2001). In response to the devastating consequences of the several financial crises observed in different countries, numerous steps has been taken all over the world in order to build a resilient banking system (S. G. Maji & De, 2015; Rime, 2001). Several rounds of banking reforms in India since 1991 have aimed to create a competitive environment in the banking system and to improve the financial stability of banks. Empirical literature indicates that the degree of competition has increased considerably during last two decades (S. G. Maji & Hazarika, 2018). It is evident that five bank concentration ratio based on assets in India (45.32%) is noticeably lower than other emerging markets like Brazil (80.47%), China (52.52%), Russian Federation (53.26%), South Africa (98.99%) and Malaysia (73.56%) as per the Bank-Scope data at the end of 2015 (Ghosh & Maji, 2019). However, the same is not true in respect of financial stability owing to high level of NPAs (Reserve Bank India, 2016, 2018). Credit risk is the oldest of all risks faced by banks associated with core banking activities of lending to customers and management of such risk has long been a focal point for the policy makers as the extent of risk directly affects the profitability of banks at the micro level and viability of the economy at the macro level (S. G. Maji & Hazarika, 2018; Tan, 2015). Several measures have been undertaken by RBI and the Central Government to minimize NPAs of Indian banks, such as introduction of prudential norms, setting up of Board for Industrial and Financial Reconstruction (BIFR), Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI),The Debts Recovery Tribunal (DRTs),The One Time Settlement Policy (OTS), Corporate Debt Restructuring (CDR) scheme etc. Yet, level of NPAs has been recognized as the alarming factor for building a resilient banking system as evident from the various Economic Survey reports of the Government of India.

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Against this backdrop, this paper aims at examining the level of NPAs of Indian commercial banks from different dimensions. Basically, the purpose of this study is to examine the trend of credit risk (measured by NPAs) over the periods and to find out the root of NPAs in Indian commercial banks during the last decade.

The rest of the paper is organized as follows. Section 2 presents the review of literature. Section 3 is devoted for data and methodology adopted in this study. Section 4 deals with analysis and interpretation of the results. While implications and limitations of the study are included in section 5, concluding remarks are presented in section 6.

LITERATURE REVIEW

The activity of lending to customers is an integral part of core banking activates and consequently credit risk, arises from this core activity, is the oldest of all risks associated banks, which is the combined outcome of default risk and exposure risk (H., Senol, Oguz, & Agah, 2019; S. Maji & Dey, 2012). NPAs in the existing banking literature has got the utmost importance as a proxy for credit risk as it adversely affect the asset quality, interest spread and ultimately the financial stability of banks (R. Ahmad, Ariff, & Skully, 2008; Chaibi & Ftiti, 2015).

The empirical literature on credit risk can broadly be divided into two streams. One group emphasizes on the bank specific determinants like bank size, interest rate margin, loan growth, loan loss provision, bank capital and profitability (N. Ahmad & Mazlan, 2015; Berger & DeYoung, 1997; S. Maji & Dey, 2012; Manab et al., 2015). On the other hand, some researchers place importance on the macroeconomic determinants of credit risk such as economic growth, unemployment, interest rate and inflation (Aver, 2008; Demirguc-Kunt & Detragiache, 1998). Recently, there are some studies, which considered both bank specific and macroeconomic factors (Chaibi & Ftiti, 2015; S. G. Maji & Hazarika, 2016; Sundar & Al Harthi, 2015).

The association between bank risk and profitability is an extensively investigated research topic in the extant literature. Theoretically an inverse association between profitability and bank risk is expected as higher risk reduces the interest spread and consequently leads to decline in bank profitability. Empirically, Liu and Wilson (2010) in case of Japanese banking sector, Tan (2015) for banks in China, Seelanatha (2010) in case of Sri Lankha and Samad (2008) for Bangladesh banking sector find negative association between credit risk and profitability. In case of India, Seenaiah, Rath, and Samantaraya (2015), Sinha and Sharma (2015) and S. G. Maji and Hazarika (2016) find evidence on the inverse association between bank risk and profitability. Thus, a large number of researchers advocate that credit risk is a crucial factor that affect the profitability or financial stability of banks.

The association between bank size and bank risk is a controversial issue in the banking literature. Large banks, in general, are more expertise in risk management than small banks and have better opportunities for risk diversification (McAllister & McManus, 1993). Empirically, Fungacova and Solanko (2008) find positive association between ratio of NPAs and bank size. In contrast, Altunbas, Carbo, Gardener, and Molyneux (2007) empirically find negative relationship between bank size and risk that may appears to explain the diversification effect. However, the findings of López-Espinosa, Rubia, Valderrama, and Antón (2013) indicate insignificant association between bank size and risk.

The association between bank capital and credit risk has emerged as core research topic after the implementation of Basel accord all over the world. The rationale for preserving adequate capital is that it is an indicator of sufficient financial resources at the banks disposal that provides cushion against failure (S. G. Maji & Hazarika, 2016). However, empirical literature provides mixed evidence relating to this association. Shrieves and Dahl (1992), (Aggarwal & Jacques, 2001), Athanasoglou (2011) and Kufo (2015) observe positive association between bank capital and risk. In contrary, Hua (2011), Das and Ghosh (2004), S. G. Maji and De (2015), S. G. Maji and Hazarika (2016) and S. G. Maji and Hazarika (2018) advocate inverse association between bank capital and risk. But Rime (2001) and Floquet and Biekpe (2008) fails to extricate any significant association between the two.

Among the external factors, economic condition (growth in GDP) is found to be a significant determinant of credit risk (R. Ahmad et al., 2008; Das & Ghosh, 2007; Chaibi & Ftiti, 2015; S. G. Maji &

Hazarika, 2016). The outcome of the studies reveals that during sound economic conditions the inflow of money is high which increases the repaying ability of borrowers and consequently reduces the credit risk. Among the other macroeconomic variable, Chaibi and Ftiti (2015) observe significant negative influence of inflation on credit risk in Germany, but the study fails to extricate significant influence of inflation in case of France.

Although, large number of researchers has tried to find out the determinants of bank credit risk, following Chandrasekhar and Ghosh (2018) the aim of this study is to find out the root of NPAs in Indian commercial banking sector that can help for proper policy implications.

DATA AND METHODOLOGY
The sample of the study consists of 40 listed Indian commercial banks (24 PSBs and 16 PrSBs). These banks hold more than 90% of the total assets of Scheduled Commercial Banks (SCBs) in India. The study period is 10 years from 2009 to 2018. The relevant secondary data are collected from the 'Capitaline Plus' corporate data base and various Financial Stability Reports of RBI.

In this study both gross NPAs and net NPAs are computed and analyzed. Gross NPAs is computed as:

$$Gross\ NPAs = \frac{Gross\ NPAs}{Gross\ Advances} \times 100 \tag{1}$$

On the other hand, Net NPAs is computed as:

$$Net\ NPAs = \frac{Net\ NPAs}{Net\ Advances} \times 100 \tag{2}$$

Finally, the study has also computed the new gross NPAs over the year. New gross NPA ratio is computed by:

$$\frac{1}{n}\sum_{i=1}^{n} = \frac{Addition of gross NPAs_{(i,t)} - Reduction of gross NPAs_{(i,t)}}{Gross Advances_{(i,t)}} \tag{3}$$

Where, i is bank, t is time and n is number of banks.

After computation of both gross NPAs and net NPAs for each bank over the periods, year wise average gross and net NPAs are computed using simple average formula. The computed results are analysed through appropriate fingers like box plot and line diagram.

RESULTS AND DISCUSSION
Movement of NPAs of Indian commercial banks
To know the movement of NPAs of Indian listed commercial banks during the study period box plot is used. It is a standardized pictorial representation of data distribution based on minimum, first quartile, median, third quartile and maximum. Further, the size of the box for each year is very useful for understanding the differences over the years. Figure 1 depicts the box plots of gross NPA ratio of all banks during the period 2009 to 2018. It is evident from the size of the boxes that there is an increasing trend of gross NPA ratio over the years. It has increased from 2.29% in March 2009 to a very high of 11.85% in March 2018. A look into the upper boundary of the boxes over the years depicts an upward concave curve. However, the spread (measured by the size of the box) of gross NPA ratio is found to be relatively less during 2009 to 2015, although increased slightly over the years. But a sharp increase is noticed from 2016 onwards. Indeed, the gross NPA ratio of listed commercial banks has increased from 3.95% in 2015 to 6.72% in 2016, i.e., increased by 70% over the previous year. One important reason for such increase in gross NPAs is due to increase in gross NPA ratio of large borrowers of scheduled commercial banks sharply from 72.8% in March 2015 to 86.4% in March 2016 (Figure 2).

As on March 2018, large borrowers which were provided 54.8% of gross advances accounted for 85.6% of gross NPAs of the SCBs. It is important to note that the share of gross NPAs of top 100 large borrowers in gross NPAs of large borrowers has sharply inclined from 0.8% in 2015 to 22.3% in 2016 (Reserve Bank India, 2016). This abnormal increase is primarily as a result of transparent recognition of restructured assets as NPAs. It is imperative to mention here that the increase in gross NPAs of large

commercial banks has remained almost stable during March 2017 and 2018. Thus, the results indicate that the defaults of large borrowers are the vital cause of mounting gross NPAs of Indian SCBs in recent times. It is also evident from the box plot (Figure 1) that the gross NPA ratio of some banks are very high as the difference between third quartile and the maximum value is very large during the last 3 years. Nevertheless, the median line inside the box depicts that the distribution of gross NPA ratio is not much skewed in most of the years. Similar results are observed in case of the net NPA ratio of Indian commercial banks during the study period as shown in Figure 3.
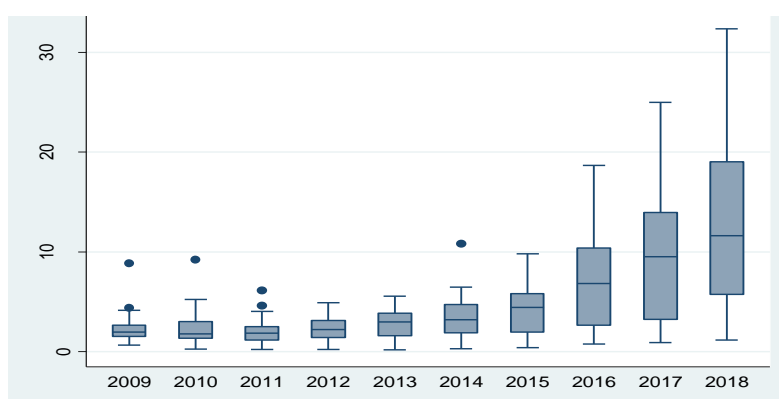

Figure 1. Box plots of gross NPA ratio of all banks
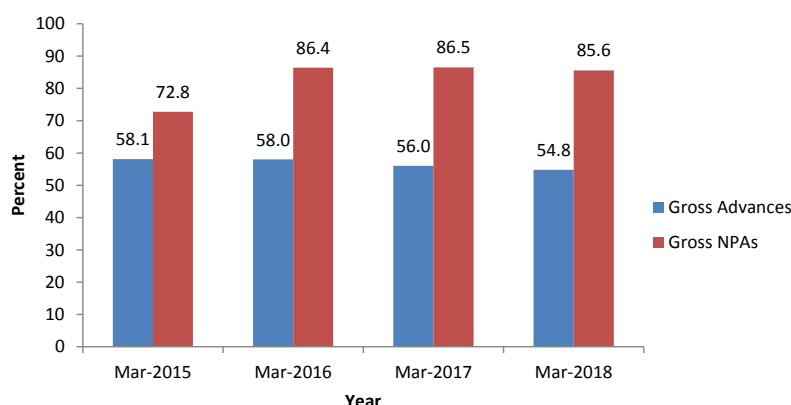

Figure 2. Share of large borrowers in SCBs loan portfolios. Source: (Reserve Bank India, 2016, 2018)
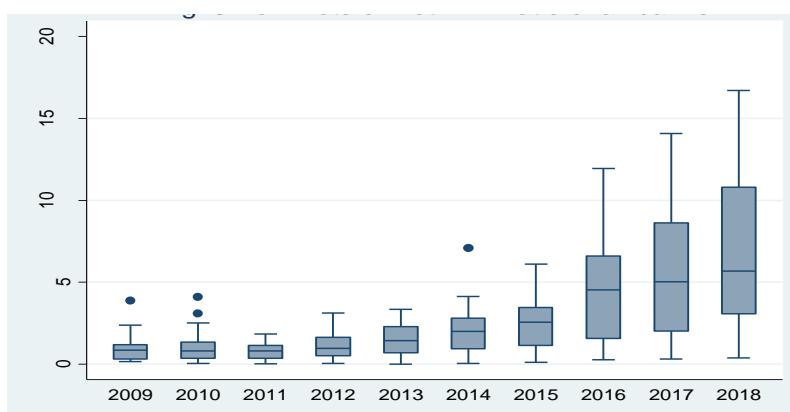

Figure 3. Box plots of net NPA ratio of all banks

NPAs of public and private sector banks

Figure 4 shows the box plots of gross NPA ratio of public and private sector banks. The size of the box as well as the maximum value is found to be greater in PrSBs as compared to that of in PSBs during 2009 to 2012. This implies that during this period the loan assets quality of PSBs was better than that of PrSBs. This may be due to the adoption of CDR scheme, which allowed banks to restructure large default loans. However, significant difference in gross NPA ratio between the two bank groups is observed since 2015, where the percentage of gross NPA is considerably greater in PSBs. For instance, at the end of March 2018 the gross NPA ratio of PSBs is found to be 18.87%, which is 3.85 times more than the NPA ratio of PrSBs. In the previous section, we find significant increase in gross NPAs of all commercial banks during 2016 to 2018. The Figure 4 demonstrates that the increase in the quantum of gross NPAs is mainly due to the higher quantum of NPAs of Indian public sector banks.

To gauge into deeper of the NPAs of PSBs and PrSBs, further analysis has been conducted after segregating the banks into four sub-groups: large PSBs, small PSBs, new PrSBs and old PrSBs. Large PSBs are defined as the top 33 percentile of banks based on average market capitalization during the study period, whereas small banks are the bottom 33 percentile of banks based on same criteria. The results are shown in table 1. The results show that the gross NPA ratio of large PSBs has increased from 1.783% in 2009 to very high of 17.842% in 2018. Likewise, the gross NPA ratio of small PSBs has inclined from 1.865% in 2009 to 19.733% in 2008. In line with earlier observations, the share of gross NPA ratio of both the bank groups has increased by about 100% in 2016 as compared to the previous year. Thus, the high NPAs in recent times for the PSBs is due to significant increase in NPAs of both large and small PSBs. On the other hand, NPA ratio of new PrSBs increased from 2.329% in 2009 to only 4.037% in 2018. The performance of old PrSBs in this respect is also quite satisfactory as compared to the performance of PSBs. Similar results are observed in case of net NPAs as shown in Figure 5. The results clearly indicate that while private players perform much better even after reclassification of assets and reverse the practice of treating all restructured assets as standard assets as per the instruction of RBI, the position of PSBs is very serious in respect of quality of assets. Indeed, initially NPA ratio of PSBs was less not due to the improvement of asset quality but because of the use of CDR scheme which allowed banks to restructure large loans subject to default. However, even after providing certain facilities like extended repayment period, reduced rate of interest etc., many of these borrowers could not repay the overdue timely and hence banks were forced to recognize such overdue as NPAs. Arguing in the similar vein, Chandrasekhar and Ghosh (2019) observed that the sharp spike in the NPAs of PSBs in recent times is due to high NPAs on non-priority sector lending. While the share of NPAs in priority sector declined from 50% in 1995 to 23.5% in 2017, the NPAs in non-priority sector gone up from 46.5% to 76.5% during the same period.
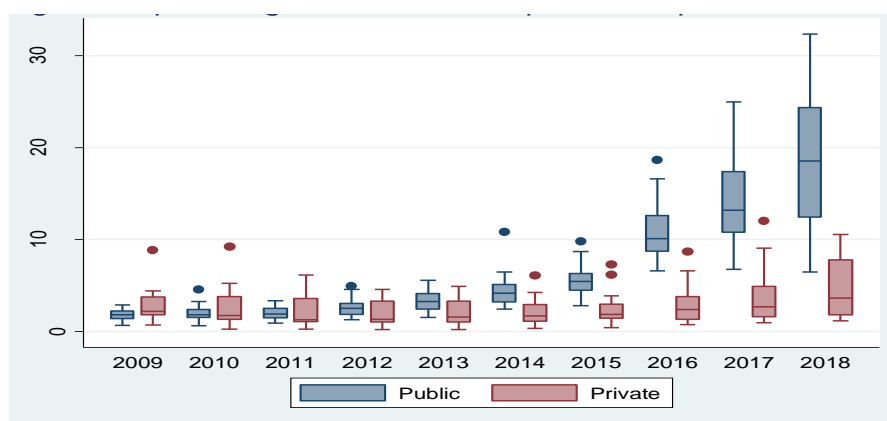

Figure 4. Box plots of gross NPA ratio of PSBs and PrSBs

Table 1: Gross NPA ratio (%) of different bank groups

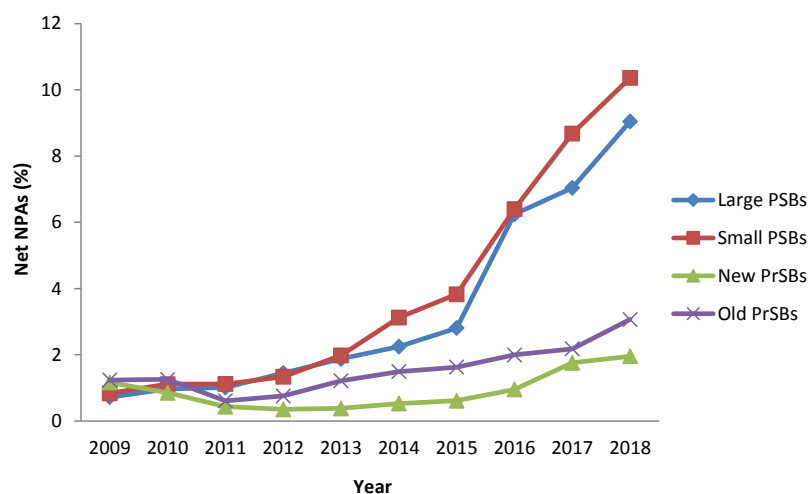| Year	Large PSBs	Small PSBs	New PrSBs	Old PrSBs
2009	1.783	1.865	2.329	3.185
2010	2.056	1.996	2.191	3.251
2011	2.064	2.153	1.687	2.541
2012	2.683	2.539	1.434	2.271
2013	3.374	3.219	1.382	2.583
2014	4.059	4.883	1.482	2.559
2015	5.081	5.992	1.566	3.172
2016	10.713	10.388	2.133	3.635
2017	12.989	14.461	3.489	4.094
2018	17.842	19.733	4.035	5.779
Average(2009-2018)	6.264	6.723	2.173	3.307

Figure 5. Movement of net NPAs

Trend of new gross NPA ratio

Figure 5 shows the movement of new gross NPA ratio of PSBs and PrSBs for the period March 2009 to March 2018. A look ino the figure reveals that the new NPA ratio of PSBs is greater than that of PrSBs over the years throughout the study period. It has increased from 0.24% in 2009 to 4.85% in 2018 in case of PSBs, while such increase is from 0.08% to 1.29% in case of PrSBs during the same period. Although it shows an increasing trend over the years for both the bank groups, initially up to March 2011 the difference is found to be less. Significant difference is observed since 2015-2016. The new NPA ratio of PSBs has increased from 1.23% in 2015 to 4.89% in 2018, i.e., increased by about 4 times within a year. In contrary, such increase is relatively less (about 1.78 times) in case of PrSBs. At the end of March 2018, the new NPA ratio of PSBs is about 3.78 times more than that of PrSBs. Thus, the trend of new NPA ratio also demonstrates that it is very high for PSBs as in comparison to PrSBs, specifically in recent times.

LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

The present study examines the NPAs of Indian commercial banks focusing on its trend (overall and sector wise) and points out the main reasons for the growth of NPAs. The study is limited to only listed commercial banks. Thus, future study can be conducted considering all banks including co-operative banks and foreign banks. Further, future study can also be conducted based on the NPAs on different sectorial distribution of loan assets to provide more information about the trend of NPAs over the years. Furthermore, empirical study on the determinants of NPAs of Indian banks considering bank specific, industry specific and macroeconomic factors may be undertaken.

CONCLUSION AND POLICY IMPLICATIONS

The present study is a modest attempt to examine the NPAs of Indian commercial banks from different dimensions. The findings of the study indicate that there is an increasing trend of both gross and net NPA ratio of Indian SCBs over the years during the study period. Sharp spike in the NPA ratio is observed since 2015. One important reason for significant increase in NPAs is the reclassification of assets as per the instructions of RBI and inclusion of restructured assets as NPAs. Further, the role of big corporate borrowers in this accumulation of NPAs is striking. As evident from the Economic Survey Report of 2015, India has witnessed a credit boom in terms of bank lending over last decade with the share of credit to GDP has increased from 35.5 percent in 2000 to 52 percent in 2015. The share of loans issued by SCBs to infrastructure and capital-intensive sector has increased immensely during this period to fulfill the need of corporate demand for large loans. When banks were unable to recover overdue form the large borrowers, banks provided facilities like extended repayment period, reduced rate of interest, partial conversion to equity, and additional credit. However, banks were unable to collect loan overdue amount from many of these borrowers and finally all these loans were recognized as NPAs. As a result, at the end of March 2016, while share of large borrowers was 58% of gross advances of SCBs portfolio, the quantum of gross NPA was more than 80%. In this respect, the study finds that the performance of PSBs (both large and small banks) was very serious in respect of bad loans as the percentage of gross NPA ratio was more than 17% at the end of March 2018. In contrary, new PrSBs and also to a large extend old PrSBs performed well in managing asset quality. Thus, the results indicate that the quantum of NPAs is an alarming factor for stability of SCBs in general and PSBs in particular. There is a need to introduce bold steps to manage the bad loan portfolio of Indian commercial banks. Recapitalization or restructuring loans may be the short term remedy to reduce the quantum of NPAs, but such plans may devastate the financial health of the banks and also the economy in the long run since banks are recapitalized with resources from the budget, which is the money of direct and indirect tax payers. Recently, the Government promulgated the Banking Regulation (Amendment) Ordinance, 2017 by introducing a new clause in the Banking Regulation Act, 1949 that empower RBI to take special action to resolve the bad debt problems. However, if this action also fails like the failure of selling private property of defaulter to private Assets Reconstruction Corporations (ARCs), other measures of resolution are needed.

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