International Journal of Banking, Risk and Insurance
8 (1) 2020, 1-14
http://publishingindia.com/ijbri/

Submitted: 04 December, 2019
Accepted: 30 December, 2019

Banking Industry and Non-Performing Assets: A Literature Review

Karampal Narwal*, Shweta Pathneja**

Abstract

The purpose of the present study is to evaluate existing studies on the ferocious issue of Non-performing assets in banking sector. The banks are facing NPA issue worldwide, yet the concern is more severe in developing countries. The main objective is to encapsulate the different perspectives available in the literature related to NPA. The paper segregates the available literature into different sections to get an in-depth analysis regarding the composition, determinants and the other related aspects of NPA. The study provides the research gaps that prevail in the area of NPA with a focus to unveil the future research which can add value to the literature in this context. The study reveals that despite a wide available literature, a comprehensive analysis on NPA may not only help to recognise the problem well but also pave the path towards proper handling it. The uniqueness of the paper lies in the fact that the major studies on the issue of NPA form the part of the study with the wider scope of unresearched areas as well.

Keywords: Non-Performing Assets, Determinants, Banking, Corruption, Governance

Introduction

NPA is not an event, in a sense, it does not only come and goes at a particular time but it generally prevails in the banking sector over time. So, no matter how gigantic is the literature on this subject available around the world, a continuous updation is the need of the hour. Over the years scholars studied different perspectives including the composition of NPA, factors affecting NPA which include bank-specific and economy factors at large and the effects of NPA on the profitability and liquidity of banks amongst others. The present study is attributed to these perspectives to observe the existence and effects of NPA as a major concern of banks in India and in the World. The different sections on the different perspectives reviewed by authors' forms the part of the study. The first section includes the studies which focused on the part of recognising non-performing assets and its constituents. The second section provides a review of the studies on the most debated aspect of NPA i.e. corruption, how corruption affects and add to the problem of NPA form this part of the study. Determinants of NPA are covered by the third section including the studies which measured the effects of Micro and Macro variables separately and jointly. Whether better governance led to better handling of NPA constitute the part of the fourth section with some other perspectives of NPA. The fifth section reviewed the studies which talked about the solution for NPA including diversification and securitization. Some research gaps are identified on the basis of reviewed studied in the sixth section with policy implications and future research directions

Review of Studies

The literature is packed with a number of studies covering the area of Non-performing assets. A need for segmentation of different perspectives is required, to get a view, on the depth of this major concern of present times. The present study attempts to bring those world-widely

* Professor, Business Management, Haryana School of Business, Guru Jambheshwar University of Science and Technology, Hisar, Haryana, India. Email: karampalhsb@gmail.com
** Assistant Professor, Govt. College Barwala, Hisar, Haryana, India. Email: shwetapathneja@gmail.com

conducted studies under one study, to find the intensity of the issue, in future reference of handling it in a proper manner. The following part of the study provides a detailed analysis of the researches on NPA.

Recognition and Composition of NPA in Banks

The first strand of literature majorly focused on the recognition and composition of NPA in banks. As recognition is the first step to look into the problem before solving it, these studies provide a synoptic view regarding the composition of NPA. Baskaran et al. (2016) compared the position of NPA in Public and Private sector banks and observed that Net Non-Performing Assets (NNPA) to net advance varies from 3.1 to 0.9 in Public sector and 2.4 to 0.4 in Private sector banks over the period 2004 to 2013. The study also stated that Private sector banks were managing NPA better as compared to Public sector banks. Jayakkodi and Rengarajan (2016) conducted a study on the effect of NPA on the return of Public and Private sector banks, which eventually were found to be negatively affected by these loans. The study stated that the problem in Public sector banks was due to political interference and private sector banks were better able to handle the NPA in a better way. Similar results were found in the study of Mishra (2013) in which the condition of NPA in the Public sector was found to be more wretched. Das and Dutta (2014) conducted a study using ANOVA to find whether there is any significant difference in the mean value of NPA during 2008-13 amongst banks and found no such difference in the mean values. Ibrahim and Thangavelu (2014) focused on the concept and constituents of NPA in Public, Private and Foreign banks. The study concluded that banks now had a better understanding of the NPA problem and the measures taken by Govt. and RBI had helped the banks to improve their performance on the NPA problem.

Sameer and Kamra (2013) assessed the state of NPA in three major banks from 1997-2010. The study observed that one of the main reasons behind the piling of NPA is weak legal environment and politically motivated policy framework. Rajeev and Mahesh (2010) observed higher NPA in priority sector during 2004-2009 as compared to Non-priority sector. Further, the study suggested that SHGs and JLGs could play a decisive role in managing NPA. NPA and its impact on the financial health of banks are also studied by Agnani (2010) and observed increased NPA could not be the only cause of less profitability in banks but a continuous increase can make the situation worse. A study on how NPA is classified and managed in Islamic banks of Malaysia with a comparison of conventional banks in UK and Japan was done by Mokhtar and Zakari (2009) who observed leniency in managing and classifying activities of Islamic banks as compared to conventional banks. Adhikary (2006) discussed the realities and challenges of bad loans in Bangladesh banking system. The inclination of banks towards less provision and lack of proper laws regarding the recovery of these loans was the major cause of NPA in banks. Credit screening, loan surveillance and loan review from time to time could be the helping measure to handle this problem in a better way. Laeven and Majnoni (2003) evidenced that loan loss provisioning could help the banks to face and diminish the pro-cyclical effects. Yet the study found that banks were not making these provisions in good situations and had to face more intricacy in bad times whenever there was a sudden increase in NPA. Further, different provisioning behavior was being observed in different countries. Altman and Saunders (1998) outlined the developments in the measurement of credit risk over 20 years by different scholars including the return analysis, portfolio risk with frontier analysis. The study offered a new approach to measure the credit risk in the form of Z score and claimed this method to analyze risk-return of credit lending as the future of measuring this risk.

Linkage Between Corruption and NPA

Another perspective of the presence of corruption in providing loans by banks is also studied by different authors. Bougatef (2016) studied the association between corruption and NPLs. The study also considered the other macroeconomic factors like unemployment, GDP, Economic growth and Inflation in the 22 emerging markets. The result revealed a positive association between corruption and NPLs. One more study was conducted by Bougatef (2015) for 69 Islamic banks on corruption's effect on non-performing loans, which was used as an indicator of soundness in banks. By using consumer perception index (CPI), the study found a positive relationship between the two as an alarming signal for banks and policymakers. Park (2012) evaluated the effect of corruption on bad loans and economic

growth over the period 2002-04 and found that corruption magnifies the problem of not only bad loans but also affect economic growth. The study stated corruption as one of the main reasons that allocate the loans from a normal project to a bad project. A primary data-based study was conducted by Farhan et al. (2012) to know the perception of bankers towards determinants of NPA in the banks of Pakistan. The results showed that in the opinion of managers who were involved in lending activities, exchange rate, energy crisis, unemployment and GDP were the main reasons behind non-performing loans. The energy crisis was one of the main economic condition which was adding more complications to the status of NPA during the study period. Weil (2011) conducted a study to know the effect of corruption on bank lending in Russia and discovered that due to corruption there was a reduction of bank loans to the household sector in contraction to the Government sector. In a solution to the corruption part in disbursing loans Barth et al. (2009) analyzed the impact of competition and information sharing to reduce the corruption in different countries. The authors observed strong evidence that both competition and information sharing amongst banks helped the banks to curtail the part of the corruption in providing loans to corporate. Further, the object courts and law enforcement were found to be the most effective tool to tackle the problem of corruption in lending loans.

Determinants of NPA

Another strand of literature focused on what determine and affect NPA the most. The literature on this aspect can be studied majorly in three parts, one the studies that measured the effect of a bank-specific variable, second which follow macro-economic variables as their major determinants and the third which evaluated the effect of both (micro and bank-specific) on non-performing loans.

Micro Variables and NPA: In the series of this analysis, Bawa et al. (2018) witnessed the effect of 31 financial ratios on NNPA of 46 public and Private sector banks of India. The determinants include solvency, capital adequacy, profitability and liquidity and their impact on Net Non-performing loans. The authors studied the functional as well as the corporate level business performance of banks. The loan growth aggressiveness led to increase in more bad loans. Further, restructuring of these loans tends to delay in measuring the quantum of these loans. Rachman et al. (2018) analyzed the position of Non-Performing Loans (NPL) and its determinants in banks of Indonesia. The problem of loan default was studied in 36 banks and fixed effect model of panel regression was used for analysis. The more profitable the banks the less was the problem of non-performing loans, yet the growth in credit tend to lower the level of NPL in the banks under study. The study suggested that banks should be financially healthy to tackle the NPA in a better way. Khan and Ahmad (2017) explored the critical factors responsible for the increase in bad loans in the banks of Pakistan. The factors which were used to conduct the study include size, ROA, EPS, CAR and Investment to Total Assets. The Period of the study was 2006-2016. The results of Panel regression showed that CAR, EPS, ROA and Breakup value of share were having a significant effect on the non-performing loans of banks in Pakistan. Dhar and Bakshi (2015) examined the impact of bank-specific variables on the non-performing loans in state-owned banks in India over the period of 2000-2005. Using regression analysis on the variables the study concluded that the banks should give proper attention to the factors like loans to the sensitive sector, net interest margin and capital adequacy ratio. Moreover, no association was observed in NPLs and priority sector lending, credit deposit ratio and unsecured loans amongst others.

Sheefeni (2015) assessed the bank-specific factor affecting non-performing loans of commercial banks in Namibia from 2001-2014. The results of Co-integration showed a negative relation between ROA and ROE with NPL and a positive relation between Loan to total assets and NPL with log of total assets**.** Misman et al. (2015) empirically tested the bank-specific variables and credit risk association in Islamic banks by using fixed effect model of regression. Financing quality and CAR were found to be significant in explaining the credit risk of banks from 2005 to 2012. Net Interest Margin was no more found to be significantly affecting the credit risk and the dummy variable of status showed that foreign banks were better able to handle the risk more appropriately. Swamy (2015) investigated the different determinants of bank's asset quality for the period 1997-2009 and observed that priority sector and rural credit were not the reasons of enhanced bad loans rather the performance of industry affect these loans. Further, the study stated that private sector banks were better able

to handle bad loans as compared to public sector banks. In a multi-country study between developed and emerging economies, Ahmad and Ariff (2007) assessed the bank-specific determinants of problem loans. Spread and regulatory capital was found to be important variables for bad loans while leverage was not so relevant in explaining these loans. Emerging countries were more influenced by these factors as compared to developed countries.

Macro-Economic Variables and NPA: A study on the determinants of banking stability was conducted by Ozili (2018) on 48 African countries. Political stability, corruption control, unemployment, government effectiveness were observed to be the factors which significantly affect the stability of African banks. Murshed and Saadat (2018) aimed to analyze the relation between Macro variables and NPA in South Asian countries including India, Pakistan and Bangladesh during 2000 to 2015. Control of Corruption, political risk and role of law were the major factors with other macroeconomic variables. The rule of law could help to control the bad loan problems as suggested by the study. Further, the corruption was found to be negatively associated with NPL in South Asian Countries. Isha et al. (2018) explored the qualitative and quantitative determinants of NPA in banks of Malaysia with one moderating variable credit risk management which strengthens the relationship of dependent and independent variables. The outcome of the study stated a negative relation between GDP and LLP. Marouf and Guellil (2017) conducted a study on the relationship of macroeconomic variable and their effect of credit risk in the Algerian banking system. Some of the variables were having a positive association with NPL including financial development and money supply, while GDP was found to negatively associated with bad loans. Some different results were found in the study on the relationship of bad loans and macro determinates in the banks of Sri Lanka by Kumarasinghe (2017) during 1998-2014 who observed a positive relationship between GDP and Non-performing loans which state, as the GDP increases there is an increase in NPA also. The results of Granger Causality revealed no cause and effect relationship of NPA with Export and Unemployment in the banks of Sri Lanka.

Kumar et al. (2017) explored the factors affecting private sector banks NPA during 2005-2015. The results showed a positive relation of NPA with GDP growth and unemployment while inflation was negatively associated with these loans. Adeola and Ikpesu (2016) investigated the position of NPA and the effect of macro variables on Nigerian banks. The study revealed that the banks were badly affected by NPA during the 2008 crisis and NPA rose to 37.3% from 6.3%. Further, the authors concluded that lending rate, money supply to GDP and unemployment rate were majorly affecting NPA during the study period of 2005-2014. The measure to improve the situation on NPA as suggested by the study was a fair and real lending rate so that the borrowers could repay the loans on time. Monokroussos et al. (2016) attempted to study the causes of sharp increase in bad loans of Greece during 2005-2015. The major contributor to the situation was sovereign debt followed by GDP and unemployment. The study further suggested a series of reforms to handle the situation in a better way. Rodrigues (2015) worked on the hypothesis that an upward trend in loan disbursement could be the cause of increasing NPA in the banks of Portugal. The study found the GDP and unemployment rate as the main causes of increasing NPA. Another perspective which came out from the study was that due to increase in NPA there is squeeze in the further lending by banks and this further enhanced the problem of NPA, as there was a decrease in further investment in business and other opportunities. Dubey and Binilkumar (2015) performed a study on the BRICS economies' NPA performance with the effect of Macroeconomic indicators over a ten years' period. Major factors of the study include annual growth of GDP, Gross capital formation to GDP, Industry value added to GDP, Bank capital to assets and lending interest rates. The fixed effect model used as analysis showed all coefficients having the negative association with NPLs except interest lending rates.

Touny and Shehab (2015) unearthed the problem of NPA in nine Arab countries. The study explored the effect of macroeconomic determinants including terms of trade i.e. ratio of the price of export and import, as these countries are very much dependent on international business. The result of the Panel data approach showed that more government spending helped these countries to reduce the level of NPA. Also, GDP and unemployment were found to be having a negative impact on NPA. The terms of trade were found to be having a negative association with NPA in petroleum countries. Ghosh and Roy (2014) examined the role of Macroeconomic variables towards non-performing loans of Indian banks. The decrease in

assets quality was due to the decline in GDP growth of the economy during the study period.

Further, the study also talked about the recovery measure used by banks in India and found that Corporate Debt Restructuring was used more as compared to other means of recovery. Erdinç and Abazi (2014) studied the determinants of 20 emerging countries of Europe from 2000-2011. Non-performing loans were found to be more influenced by GDP and inflation while management quality played a crucial role in default of loans. Further, a reduction in loan quality was observed due to high lending rates**.** Prasanna (2014) also performed a study on 31 Indian banks from 2000-2012 to assess the macroeconomic factor's relation with bad loans and found a positive relation of interest and inflation rate with NPA and a negative relation of GDP and a higher rate of saving with NPAs. A study on macroeconomic variables effect on Pakistan's banking NPA was explored by Ahmad and Bashir (2013) who acknowledged the negative association of GDP, interest rate, industrial production and exports with NPL. The study also suggested having a continuous review policy of interest rate to better manage the NPL. Jokipii and Monnin (2013) studied the relationship between banking stability and output growth in OCED countries using VAR. And confirmed a positive relationship between the two, yet no effect of inflation on banking stability was observed during the study period. An important finding of the study suggested that the time period (like crisis, post-crisis) when such studies were conducted had to impact on the stability of banks.

Richard (2011) collected the data through a questionnaire in Tanzania commercial banks to find the reason behind increasing NPA. The loan which was given for a specific reason was not used exactly for the same reason by borrowers was one of the causes that were adding to the NPA of banks. The study further suggested close monitoring could help to handle this problem in a much better way. Patnaik et al. (2011) conducted a primary data-based study to identify the reasons behind the default in payment of loans in the districts of Orissa. The factors which were found to be responsible for such default include industrial failures, wrong choice of project, crop failure and natural calamities. One other important reason for default was the willingness of the borrower to repay the loans. Further, political interference and ignorance of bank staff while choosing the borrower were also found to be the reasons of increasing NPAs. Festic et al. (2011) noticed that more capital formation helped to reduce the NPL in three EU States. Also, the increase in exports led to a decrease in systematic risk with economic overheating as an indicator of potential threat to the banks of these economies. Nkusu (2011) confirmed a negative association between macroeconomic variables and NPL in 27 advanced economies. The study also used panel VAR with cointegration analysis to know the presence of cointegration relationship. Ali and Daly (2010) constructed a model using Macroeconomic variables to find which country is more prone to macroeconomic shocks. The study concluded that the effect of the same variables was different for the default rate of both countries and the USA was more vulnerable to the macroeconomic variables. Bohachova (2008) addressed the issue of NPA in OECD and Non-OECD countries. More capital accumulation at the time of boom in the economy can provide a shield to the problem of NPA during the recession, as stated by the study. No confirmed results were obtained regarding the concentration of ownership and NPA in OECD countries. Increased currency rates tend to have a negative impact on these loans and more affluent countries were better able to manage NPA as compared to others.

Fofack (2005) looked into the main causes of NPA across Sub-Saharan Africa during 1990. Cause and effect approach of Granger Causality showed that inflation, real interest rate, GDP with trade deterioration were the main reason for impaired loans. The study stated that the soaring rate of these loans was mainly due to the lack of diversification amongst banks in African economies and a high non-payment of loans in the agriculture sector. Kalirai and Scheicher (2002) performed a stress test to measure credit risk in Austria. Some important macro factors which were found to be having an effect on credit risk fell in business confidence, bear stock market, fall in short rate and decline in industrial production.

Micro and Macro Variables and NPA: Kotiso (2018) aimed to analyze the factors affecting Non-performing loans of Ethiopian banks during 2005-2011. The secondary data was collected and used regarding Micro and Macro variables to conduct the study. The results of the fixed effect model ascertained that leverage, the inefficiency of management, loan growth and loan to deposit ratio were among the micro variables which were having significant contribution towards the bad

loans. GDP was insignificant to NPA, while inflation was significantly related to the same. Further, Micro variables were impacting more as compared to Macro variables to the NPA in the banks of Ethiopia. Muvingi et al. (2017) applied a panel data regression model to assess the impact of micro and macroeconomic variables on the NPLs of the Zimbabwean banking sector. The situation of NPA had become a problem for the banks in Zimbabwean after the dollarisation of the economy. GDP and inflation are two major factors amongst macro variables that affect non-performing loans. Further, amongst micro variables, size has significantly positive relation, while ROA has no significant impact on non-performing loans in the banks of Zimbabwean. One contradictory result which the study observed was in the context of lending rate, which was found to be negatively associated which states as the lending rates increase there is a decrease in NPA and vice-versa.

Kjosevski and Petkovski (2017) analyzed the linkage of NPL with macro and bank-specific variables in the Baltic States. The results of the study indicated a strong impact of GDP growth, inflation, domestic credit, ROA, ROE, growth of loans on NPL. Also, the study concluded a greater impact of macroeconomic variables as compared to other variables. Patra and Padhi (2016) examined the effect of macroeconomic and bank-specific variables taking NNPA as dependent variable on different groups of commercial banks in India. Monetary and fiscal norms do affect the NNPA of public sector banks while CAR and ROA were found to be the key variables amongst bank-specific variables. The behavior of foreign banks was found to be opposite regarding the shocks in macro environment. Rajha (2016) explored that loan growth in proportion to the total asset was the major bank-specific variable affecting NPL in the Jordanian banking sector. On the other hand, economic growth and inflation were found to be negatively associated with these loans. The study also stated that even large banks were not able to screen the borrowers properly before lending loans. Dimitrios (2016) used quarterly data to identify both types of determinants i.e. macro and bank-specific in Euro-area banks. The output gap, unemployment and tax were found to be more influential variables of NPL amongst others, while management skills and risk preference were the bank variables affecting problem loans. Ghosh (2015) found in their study on the US states that more liquidity problems, cost inefficiency amongst banks, the size of the banking industry tend to increase the level of NPA. The similar result as shown in the study of Curak et al. (2013) that more profitable banks were better able to manage the bad loans problem more efficiently were also observed in the study. As the US is better known for its housing projects schemes, the impact of housing price index was also observed on NPL with other factors like GDP, inflation and unemployment rate. Chaibi and Ftiti (2015) compared a market-based economy France with a bank based economy Germany to evaluate the bank-specific and macro determinants of bad loans. The authors noticed that France was more vulnerable to bank-specific variables as compared to Germany, while all macro determinants were equally affecting the two economies' NPA except for the inflation rate. By using panel data regression Amuakwa-Mensah and Boakye-Adjei (2015) found that bank-specific variables including NIM, bank size and Loan growth were more affecting the non-performing loans of small banks of Ghana, as compared to macroeconomic variables like GDP, inflation rate, exchange rate. Further, large banks were affected by both kinds of variables.

Bhattarai (2015) aimed to analyze the bank-specific and macroeconomic effect on Nepalese banks and the real effective exchange rate was negatively related to NPA, while GDP growth was not significantly affecting these loans. Amongst bank-specific factor ownership was positively associated with NPA, as govt. banks were found to be more under pressure of bad loans. Kumar et al. (2015) examined the determinants of NPL in Fiji banks. The bank-specific variables having a negative association with NPL were ROE, Size and SOL, while NIM was found to be positively associated with NPL. More the inefficiency of management more was the NPL was found in Fiji banks. The tightening measures to recover the loan during the recession which caused unemployment were the major macroeconomic factor contributing to a high level of bad loans. Satpathy et al. (2015) conducted a study on the Indian banks during 2005-2013 using the panel data model. It was found that economic slowdown adversely affected the loans of banks while Government deficit and the level of inflation was further adding to the problem of NPA. Operating efficiency and credit growth were observed to be the explaining bank-specific factors during the study period. The study also concluded that there was less impact of micro variables as compares to

others. The experience of 10 South Eastern European countries of Non-performing loans was studied by Curak et al. (2013) who applied the GMM model to evaluate the bank-specific and Macro-economic variables impact on bad loans. The result was almost the same in these countries too, as inflation rate, economic growth and high-interest rate were found to be crucial in explaining the NPL. The supervisors could manage and handle the situation before it became worse through solvency and past performance of the banks as suggested by the study. Messai and Jouini (2013) measured the effect of micro and macro variables of 85 banks in three countries (Italy, Greece and Spain). As the GDP of the countries increased, there was a decline in NPA while unemployment tends to increase the NPA over the study period of 2004-08. Further, an increase in interest rate by banks, especially of floating rate, added to hike of bad loans in these countries.

Garr (2013) conducted an in-depth analysis including bank-specific, industry-specific and macroeconomic determinants of credit risk in Ghana during 1990 to 2010 stated that management inefficiency was a major concern, while Treasury bill, inflation and discount rate did not have a significant influence on credit risk. A similar study was conducted by Espinoza and Prasad (2010) on GCC countries to ascertain the determinants of NPL and the same results obtained which stated an impact of GDP and global financial market condition do impact the bad loans. The results of VAR showed a short-lived effect on non-oil growth in the GCC which implied that cost could increase tremendously after NPL crosses the threshold limits. Boudriga et al. (2010) discussed the factors affecting NPL in the banks of the MENA region. Forty-six banks were taken into consideration and the results showed that foreign participation had helped the banks to reduce their bad loans. A different observation was found by the study as compared to other studies was that loan growth tends to decrease the level of NPA during the study period. Louzis et al. (2012) discretely examined the effect of a bank-specific and macro variable on different categories of loans including consumer, business and mortgage. The study showed that bad loans were more explained by macro variable yet the effect of these was least on mortgage loans during the study time period. Ghosh (2011) developed a financial fragility index which was taken as dependent variable and macro and bank-specific variables were taken as independent variables. More credit extension and branch expansion could lead to high risk in banks. Further, more concentrated ownership banks were found to be more stable. Augment in GDP and decline in real interest rate were found to be helpful in managing the stability better.

Zribi and Boujelbene (2011) examined the micro and macroeconomic variables effect on credit risk in Tunisia for 1995-2008. Increased credit risk was observed with an increase in public ownership and more regulations helped the bank to control credit risk more appropriately. Further, GDP, inflation, exchange and interest rate were also significantly and positively associated with credit risk. Khemraj and Pasha (2009) conducted a study on macro and bank-specific determinants of non-performing loans in the Guyanese banking sector. The loans that become bad were the ones which were given on high interest rate. While, economic growth tend to reduce NPA, as growth led to increase the paying capacity of loan takers. Another macro variable inflation was not significantly affecting the NPA of Guyanese banks. Further, the study suggested that international competitiveness should be assessed before giving loans to the export sector to reduce bad loans. Das and Ghosh (2007) applied the GMM approach to finding the macro and bank-specific variables affecting the non-performing loans in India. The authors noticed that GDP growth have a substantial impact on problem loans while the real interest rate did not have any significant effect on the same. Credit growth and competitive pressure were found to be the micro-economic factors contributing to the non-performance of loans.

Ranjan and Dhal (2003) conducted an empirical analysis to investigate the effect of terms of credit, bank size and macroeconomic variables on NPL in PSBs of India. Bank size measured in terms of size was negatively associated with NPAs while measured in terms of capital was positively related to NPAs. Change in terms of credit also led to an increase in NPA over time. An important outcome of the study suggested that a positive deviation of CDR from the industry average could have a favorable effect on NPAs. Salas and Saurina (2002) contributed towards the NPA literature by studying determinants (both micro and macro) in commercial and saving banks of Spanish country. The credit risk was more affected by micro variables during 1985-1997 as compared to macro variables with the size of banks helped to decrease NPA. The study suggested banks to be more geographically

diversified and mergers might also help to control the bad loans problems. Gonzalez-Hermosi et al. (1997) tested the determinants of bank's fragility including Macro conditions, bank-specific variables with contagion effects in Mexico during the financial crisis in 1994. A fragility index was constructed for the banking system which stated that the threshold limits of NPA provide a clear signal of increased fragility in the near future, while the macro conditions suggested the time of increased fragility. Berger and DeYoung (1997) addressed a different aspect of association between problem loan and cost efficiency and also their effect on capital adequacy. With the application of Granger Causality, they found more problem loans led to cost inefficiency and cost efficiency led to less problem loans. Further, less capitalized banks were found more in the trap of problem loans.

Other Studies Including the Governance Effects on NPA

The literature on NPA also covered some studies which evaluated different other perspectives on bad loans analysis, like Sengupta and Vardhan (2017) studied the situation and impact on NPA in the time of crisis. Two major crisis of 1990 and 2008 and their impact on non-performing loans was the main focus of the study. The role of Assets Reconstruction companies was found to be more important in the crisis of 1990. The overall impact of the crisis was not so much on bad loans but the impact of cyclical macroeconomic variables was found to be noteworthy. Sarkar and Nahar (2017) unearthed an important perspective of ownership structure and credit risk in the form of non-performing loans in 32 banks of Bangladesh. The study disclosed that more Government interference was adding significantly to the bad loans and the Government, the Management and Policymakers should take some strong actions to tackle this major concern of increasing NPA. Chavan and Gambacorta (2016) observed one-percentage-point association in loan growth and NPL in Public and Private sector banks of India. The study also stated that more capitalized banks were risk-averse during the study period. The sensitivity of NPL due to interest rate and overall environment of the economy was one of the other findings of the study. Dubey and Kumari (2016) examined the relation between NPA level and stock market performance of listed banks over 15 years time period. Gross NPA was not found to be having any impact on market capitalisation during the study period. Even after the crisis, no such impact was observed on private and nationalised banks in India. Kuranchie-Pong et al. (2016) studied the relationship of disclosure and credit risk in the banks of Ghana. The astonishing result showed that the banks disclosing more were facing more credit risk. Hence a positive association was observed between the two, which is completely contradictory to the theoretical perspective. The study also confirmed that there was more credit risk in the election year in the country, as the government borrow more money and many times not able to return it to banks.

Nyor and Mejabi (2013) explored the relationship between governance variables and NPL of Nigerian banks. Board size and its composition, audit committees and its composition were taken into consideration while assessing their impact on non-performing loans. The authors found no such impact of these variables on NPLS. Stefanelli and Cotugno (2012) empirically analyzed the effect of board monitoring on the quality of loans in Italian banks. The results revealed that due to the weak role of the board the recovery rate was low in the banks. A partial positive aspect which was observed that Audit committee proper monitoring could help in better provisioning of bad loans. Cotugno and Stefanelli (2011) tested the benefits which banks gained due to the opted recovery methods in the Italian banking sector during 2005-08. The analysis showed that the banks using relationship lending model were able to recover the bad loans.

Moreover, the banks who had more branches in municipalities as compared to provincial capitals recorded a lower default rate. In their study on USA and Australia, a detailed analysis on 500 banks across 50 countries was conducted by Shehzad et al. (2010) to find the impact of ownership on the riskiness of banks and capital adequacy. A positive relation of concentrated ownership with NPA and capital adequacy was observed during 2005-2007. Ownership concentration also resulted in better management of risk assets.

Laeven and Levine (2008) evaluated the impact of governance and regulations on the risk of banks. How much risk the bank will take would depend on the powers of shareholders in the banks. Further, the banking regulations also played a crucial role in the bank's decision in taking the risk. Quagliariello (2006) examined

the impact of cyclical fluctuations of the economy on a bank's risk in terms of NPL. The study found that the impact of recession had a long-lasting effect on these loans, as during this period, banks become more strict and cautious which further, add to the problem of bad loans. Banks had to make more provisions during this period as a cushion to handle the situation. Konishi and Yasuda (2004) explored the determinants of risk in Japan commercial banks. A nonlinear relationship was observed between the stability of shareholders and banks risk. The study also observed that there was no significant impact of hiring retired officials on the board of the banks with the risk, as there was no reduction in risk due to this. The decrease in branches increased the risk of banks. Hu et al. (2004) studied the ownership effect on the non-performing loans in 40 Taiwan banks. The random model of regression showed that as the share of government holding increased there was an increase in NPA as well. Further, a negative relation between size and NPA was observed with a finding that banks established after deregulation were better able to handle the problem of bad loans. Information about borrowers can play a vital role in handling NPA and this aspect is explored by McNulty et al. (2001) with a hypothesis that small banks particularly are more informed and cautious while giving loans in the banks of Florida, but found no such advantage for these banks in handling loan quality. Clair (1992) evidenced a decline in the quality of a loan in Texas banks due to growth in the loan. The banks that were not able to strike a balance between the risk and loan growth also faced closure over time.

Diversification and Securitization and NPA (Working Towards Solutions)

The effect of more diversified activities can nullify the effect of NPA on profitability, and this aspect is also being studied in the literature, to maintain the profitability intact. Ahamad (2017) investigated the quality of the asset, non-interest income and bank profitability of Indian banks for the period 2008-2014 and found a robust association between non-interest income and profitability which state that banks moving towards modern sources of income are able to get more profits. Further, the foreign private sector banks earned more risk-adjusted profits as compared to public sector banks over the study period. In an analogous study by Meslier et al. (2014**)** the authors observed that a move to non-traditional income sources enhanced the profits of the banks in eleven emerging economies over the period 2000-2007. D'Souza (2017) talked about a solution of NPA in the form of securitization of assets. A relationship between NPA and securitization was tested by the authors with the help of OLS, who found no significant relationship between the two. The capacity of banks providing loans increased with the expansion of the economy and the banks tend to give more loans and ignore the risk associated with it. How loan growth affects the quality of loans in the form of NPA is an area which also received scholar's attention in the literature. Banerjee and Velamuri (2015) aimed to explore the balance between profitability and stability amongst different ownership banks in India and observed negative relation between the two. Further, the study found that higher wage bill lowered the NNPA of banks and suggested to attract the best talent to handle the NPA problem aptly. Sanya and Wolfe (2011) conducted a study on 11 emerging economies with 226 listed banks and found that banks with moderate risk were being more benefitted with diversification activities. By using the GMM method the study evidenced a shift of insolvency risk and improved performance because of non-traditional activities. Stiroh and Rumble (2006) evaluated the linkage between diversification and risk-adjusted-performance of financial holding companies of the U.S. The study concluded that the benefits of these activities were counterbalanced by the exposure to non-interest activities. Moreover, the study found that non-interest income was associated with a decrease in risk-adjusted profits of firms. Cebenoyan and Strahan (2004) found that the banks which were using the loan sale market as one of the risk management tools were in need of less capital as compared to other banks. This also helped the bank to invest in low yield but highly liquid assets which ultimately led to gain from higher risk and higher return assets. DeYoung and Roland (2001) who constructed a framework for 472 U.S. banks to analyze the effect of product mix during 1988 to 1995 found that banks were partially able to handle the risk better due to change in this mix but also faced increased volatility in revenue. Demsetz and Strahan (1997) suggested with their study that better diversification did not lead to decrease in the risk of banks because of the reason of the benefits of diversification being offset by less capital ratio maintained by banks. Further, size and diversification were positively associated with each other.

Research Gaps, Policy Implications vis-à-vis Future Research Directions

The banks are one of the major sources of finance to different sectors which provide lubricant to the engine of the economy. The public sector is one of the major parts of the banking sector on which the pressure to give away the loans is more and consequently, and this segment becomes a victim of NPA, so, a detailed analysis is required to evaluate what actually are the causes that led to failure in repaying the loans to this sector. Further, a gap is observed regarding the willful default with part of corruption. An increase in the willful default of repayment of loans is observed that led to analyze the weakness of credit appraisal which is not studied previously. The requirement of a legal environment to tackle the issue of NPA is required. Although, RBI and Government of India has taken major steps in this regard by establishing NCLT, IBC and Lok Aadalt, yet the need to measure the effectiveness of these institutions is the need of the hour. So, the success of these measures can also add value to the existing literature.

Understanding the depth of a concept is the initial requirement before working towards it, the present study provides that plinth in context to NPA. A comprehensive approach is followed in the study which started with a basic understanding of NPA, to the footsteps of determinants, corruption and governance with a way out including diversification, securitization and others. NPA is not a problem of the banking industry, but a collective concern which eventually impacts every segment of a country, so a continual vigilance is required to handle it properly. A hefty no. of studies covered different perspectives of NPA, yet left some scope to further enhance the literature on the aspect. The present study reveals that only a few studies cover the emerging economies in context to NPA, also, governance impact is further required to be more analyzed to get rid of this problem to an extent. Further, a comparative picture of NPA in different economies and their way out to handle it, can also form the part of future studies.

References

Adhikary, B. K. (2006). Non-performing loans in the banking sector of Bangladesh: Realities and Challenges. Retrieved from https://en.apu.ac.jp/rcaps/uploads/fckeditor/publications/journal/RJAPS_V21_Adhikary.pdf on 8th Jan, 2019.

Adeola, O., & Ikpesu, F. (2016). Macroeconomic determinants of non-performing loans in Nigeria: An empirical analysis. *Proceedings of the International Conference for Bankers and Academics,* Dhaka. Retrieved from https://www.aabss.org.au/system/files/published/001485-published-icba-2016-dhaka.pdf. on 10th Jan, 2019.

Agnani, J. (2010). NPAs in banks: A syndrome probing remedy. *International Journal of Research in Commerce & Management*, *1*(5), 62-73.

Ahamad, M. M. (2017). Asset quality, non-interest income, and bank profitability: Evidence from Indian banks. *Economic Modeling*, *63,* 1-14.

Ahmad, H., & Ariff, M. (2007). Multi-country study of bank credit risk determinants. *The International Journal of Banking and Finance, 5*(1), 135-152.

Ahmad, F., & Bashir, T. (2013). Explanatory power of macroeconomic variables as determinants of non-performing loans: Evidence from Pakistan. *World Applied Sciences Journal*, *22*(2), 243-255.

Ali, A., & Daly, K. (2010). Macroeconomic determinants of credit risk: Recent evidence from a cross country study. *International Review of Financial Analysis*, *19*(3), 165-171.

Altman, E., & Saunders, A. (1998). Credit risk measurement: Developments over the last 20 years. *Journal of Banking and Finance*, *21*(11-12), 1721-1742.

Amuakwa-Mensah, F., & Boakye-Adjei, M. (2015). Determinants of non-performing loans in Ghana banking industry. *International Journal Computational Economics and Econometrics, 5*(1), 35-54.

Banerjee, S., & Velamuri, M. (2015). The conundrum of profitability versus soundness for banks by ownership type: Evidence from the Indian banking sector. *Review of Financial Economics, 26,* 12-24.

Barth, J. R., Lin, C., Lin, P., & Song, F. M. (2009). Corruption in bank lending to firms: Cross-country micro evidence on the beneficial role of competition and information sharing. *Journal of Financial Economics, 91,* 361-388.

Bawa, J. K., Goyal, V., Mitra, S., & Basu, S. (2018). An analysis of NPAs of Indian banks: Using a comprehensive framework of 31 financial ratios. *IIMB Management Review.* doi:https://doi.org/10.1016/j.iimb.2018.08.004

Berger, A., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking and Finance*, *21,* 849-870.

Bhaskaran, R., Bhalla, L., Sarin, V., Kaur, S., Rahman, A., Singh, G., Bhattacharya, A., Jha, A. K., & Verma, P. (2016). Non-performing assets of public and private sector banks in India - A comparative study. *International Journal of Services and Operations Management, 25*(2), 155-172.

Bhattarai, S. (2015). Determinants of non-performing loan in Nepalese commercial banks. *Economic Journal of Development Issues, 19-20*(1-2), 22-38.

Bohachova, O. (2008). The impact of macroeconomic factors on risks in banking sector: An empirical assessment. Working Paper No. 44. Assessed from https://www.econstor.eu/bitstream/10419/36633/1/584116233.PDF on 12th Jan, 2019.

Boudriga, A., Tunis, U., & Taktak, N. B. (2010). Bank Specific, business and institutional environment determinants of banks nonperforming loans: Evidence from MENA Countries. Retrieved from https://www.researchgate.net/publication/254411009_Bank_Specific_Business_and_Institutional_Environment_Determinants_of_Banks_Nonperforming_Loans_Evidence_from_MENA_Countries/download on 12th Jan, 2019.

Bougatef, K. (2016). How corruption affects loan portfolio quality in emerging markets? *Journal of Financial Crime*, *23*(4), 1-14.

Bougatef, K. (2015). The impact of corruption on the soundness of Islamic banks. *Borsa Istanbul Review*, *15*(4), 283-295.

Chaibi H., & Ftiti Z. (2015). Credit risk determinants: Evidence from a cross-country study. *Research in International Business and Finance*, *33,* 1-16.

Chavan, P., & Gambacorta, L. (2016). Bank lending and loan quality: The case of India. BIS Working Paper No. 595. Retrieved from https://www.bis.org/publ/work595.pdf on 7th Jan, 2019.

Cebenoyan, A. S., & Strahan, P. E. (2004). Risk management, capital structure and lending at banks. *Journal of Banking & Finance, 28*(1), 19-43.

Clair, R. T. (1992). Loan growth and loan quality: Some preliminary evidence from Texas banks. Retrieved from https://www.dallasfed.org/~/media/documents/research/er/1992/er9203b.pdf on 7th Jan, 2019.

Cotugno, M., & Stefanelli, V. (2011). Bank size, functional distance and loss given default rate of bank loans. *International Journal of Financial Research*, *2*(1), 31-44.

Curak, M., Pepur, S., & Poposki, K. (2013). Determinants of non-performing loans - Evidence from South-eastern European banking systems. *Journal of Banks and Bank Systems*, *8*(1), 45-53.

Das, S., & Dutta, A. (2014). A study on NPA in public sector banks in India. *IOSR Journal of Business and Management*, *16*(11), 75-83.

Das, A., & Ghosh, S. (2007). Determinants of credit risk in Indian state-owned banks: An empirical investigation. *Economic Issues*, *12*(2), 48-66.

Dhar, S., & Bakshi, A. (2015). Determinants of loan losses of Indian banks: A panel study. *Journal of Asia Business Studies*, *9*(1), 1-24.

Demsetz, R. S., & Strahan, P. E. (1997). Diversification, size, and risk at bank holding companies. *Journal of Money, Credit and Banking, 29*(3), 300-313.

D'Souza, A. (2017). Rising non-performing assets in scheduled commercial banks of India: Is securitisation a solution? *Nitte Management Review*, *11*(1), 42-48.

DeYoung, R., & Roland, K. P. (2001). Product mix and earnings volatility at commercial banks: Evidence from a degree of total leverage model. *Journal of Financial Intermediation*, *10,* 54-84.

Dimitrios, A., Helen, L., & Mike, T. (2016). Determinants of non-performing loans: Evidence from Euro-area countries. *Finance Research Letters*, *18,* 116-119.

Dubey, D. D., & Binilkumar, A. S. (2015). A look at business environment and non performing loans factors in BRICS economies. *International Review of Research in Emerging Markets and the Global Economy (IRREM), 1*(1), 234-253.

Dubey, D., & Kumari, P. (2016). Impact of non-performing assets on stock market performance of listed bank stocks in India: An empirical assessment of how the two stocks-NPA and share are related. *IOSR Journal of Economics and Finance (IOSR-JEF)*. Retrieved from http://www.iosrjournals.org/iosr-jef/papers/SIFICO/Version-1/3.%2016-22.pdf on 15th Jan, 2019.

Espinoza, R., & Prasad, A. (2010). Nonperforming loans in the GCC banking systems and their macroeconomic effects. IMF Working Paper 10/224. Retrieved from https://www.imf.org/external/pubs/ft/wp/2010/wp10224.pdf on 28th Jan., 2018.

Erdinç, D., & Abazi, E. (2014). The determinants of NPLs in emerging Europe. *Journal of Economics and Political Economy*, *1*(2), 112-125.

Farhan, M., Sattar, A., Chaudhry, A. H., & Khalil, F. (2012). Economic determinants of non-performing loans: Perception of Pakistani bankers. *European Journal of Business and Management*, *4*(19), 87-99.

Festic, M., Kavkler, A., & Repina, S. (2011). The macroeconomic sources of systemic risk in the banking sectors of five new EU member states. *Journal of Banking and Finance*, *35*(2), 310-322.

Fofack, H. (2005). Non-performing loans in sub-Saharan Africa: Causal analysis and macroeconomic implications. World Bank Policy Research Working Paper No. 3769, November. Retrieved from http://documents.worldbank.org/curated/en/446961468104639856/pdf/wps3769.pdf on 5th Jan, 2019.

Garr, D. K. (2013). Determinants of credit risk in the banking industry of Ghana. *Developing Country Studies, 3*(11), 64-77.

Ghosh Roy, S. (2014). Determinants of non-performing assets in India: Panel regression. *Eurasian Journal of Economics and Finance, 2*(3), 69-78.

Gonzalez-Hermosi, B., Pazarbaiog, C., & Billings, R. (1997). Determinants of banking system fragility: A case study of Mexico. *IMF Staff Papers, 44*(3), 295-314.

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.

Ghosh, S. (2011). A simple index of banking fragility: Application to Indian data. *The Journal of Risk Finance*, *12*(2), 112-120.

Isa, M. Y., Choong, Y. V., Fie, D. Y., & Abdul Rashid, M. Z. (2018). Determinants of loan loss provisions of commercial banks in Malaysia. *Journal of Financial Reporting and Accounting*, *16*(1), 24-48.

Hu, J. L., Li, Y., & Chiu, Y. H. (2004). Ownership and nonperforming loans: Evidence from Taiwan's banks. *The Developing Economies, 42*(3), 405-420.

Ibrahim, M. S., & Thangavelu, R. (2014). A study on the composition of non-performing assets (NPAs) of scheduled commercial banks in India. *Journal of Finance and Bank Management*, *2*(1), 31-48.

Jayakkodi, D., & Rengarajan, P. (2016). Impact of non-performing assets on return of assets in public and private sector banks in India. *International Journal of Applied Research, 2*(9), 696-702.

Jokipii, T., & Monnin, P. (2013). The impact of banking sector stability on the real economy. *Journal of International Money and Finance*, *32,* 1-16.

Kalirai, H., & Scheicher, M. (2002). Macroeconomic stress testing: Preliminary evidence for Austria. Retrieved from Austrian National Bank Financial Stability Report, May No. 3.

Khan, I., & Ahmad, A. (2017). Assessing banks internal factors as determinants of non-performing loans: Evidence from commercial banks of Pakistan. Retrieved from http://www.qurtuba.edu.pk/jms/default_files/JMS/11_1/JMS_January_June2017_109-125.pdf on 15th Jan, 2019.

Khemraj, T., & Pasha, S. (2009). The determinants of non-performing loans: An econometric case study of Guyana. MPRA Paper. Retrieved from https://mpra.ub.uni-muenchen.de/53128/1/ on 8th Jan, 2019.

Kjosevski, J., & Petkovski, M. (2017). Non-performing loans in Baltic states: Determinants and macroeconomic effects. *Baltic Journal of Economics*, *17*(1), 25-44.

Konishi, M., & Yasuda, Y. (2004). Factors affecting bank risk taking: Evidence from Japan. *Journal of Banking & Finance*, *28,* 215-232.

Kotiso, M. S. (2018). Factors affecting default risk of commercial banks: Evidence from Ethiopian banking industry. *Research Journal of Finance and Accounting*, *9*(1), 1-10.

Kumar, S. G., Jayanthi, M., & Prasanth, A. (2017). A study on the impact of institutional-specific and macroeconomic indicators on the non-performing assets of new private sector banks in India. *International Journal of Latest Technology in Engineering, Management and Applied Science, 6*(7), 125-132.

Kumar, R. R., Stauvermann, P. S., Patel, A., & Prasad, S. S. (2015). Determinants of non-performing loans in banking sector in small developing island states: A study of Fiji. *Accounting Research Journal, 31*(2), 192-213.

Kumarasinghe, P. J. (2017). Determinants of non-performing loans: Evidence from Sri Lanka. *International Journal of Management Excellence, 9*(2), 1113-1121.

Kuranchie-Pong, L., Bokpin, G., & Charles Anodh, B. (2016). Empirical evidence on disclosure and risk-taking of banks in Ghana. *Journal of Financial Regulation and Compliance, 24*(2), 1-15.

Laeven, L., & Majnoni, G. (2003). Loan loss provisioning and economic slowdowns: Too much, too late? *Journal of Financial Intermediation*, *12,* 178-197.

Laeven, L., & Levine, R. (2008). Bank governance, regulation and risk taking. *Journal of Financial Economics*, *93*(2), 259-275.

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.

Marouf, F. J., & Guellil, Z. (2017). The macroeconomic determinants of credit risk: The algerian banking system. Assessed from http://www.hippocampus.si/ISBN/978-961-7023-71-8/215.pdf on 11th Jan. 2019.

McNulty, J. E., Akhigbe, A. O., & Verbrugge, J. A. (2001). Small bank loan quality in a deregulated environment: The information advantage hypothesis. *Journal of Economics and Business, 53*(2-3), 325-339.

Meslier, C., Tacneng, R., & Tarazi, A. (2014). Is bank income diversification beneficial? Evidence from emerging economies. *Journal of International Financial Markets, Institutions and Money, 31,* 97-126.

Messai, A. S., & Jouini, F. (2013). Micro and macro determinants of non-performing loans. *International Journal of Economics and Financial Issues, 3*(4), 852-860.

Mishra, A. K. (2013). Trends of non-performing assets (NPA) in public sector banks in India during 1993–2012. *International Journal of Research in Commerce & Management*, *4*(11), 111-114.

Misman, F. N., Bhatti, I., Lou, W., Samsudin, S., & Abd Rahman, N. H. (2015). Islamic banks credit risk: A panel study. *Procedia Economics and Finance, 31,* 75-82.

Mokhtar, M., & Zakaria, Z. (2009). Classification and management of non-performing loans of Islamic banks and conventional banks: A comparative study. *Jurnal Teknologi*., *51,* 31-56.

Monokroussos, P., Thomakos, D. D., & Alexopoulos, T. A. (2016). Explaining non-performing loans in Greece: A comparative study on the effects of recession and banking practices. Hellenic Observatory, LSE. Retrieved from http://eprints.lse.ac.uk/67496/1/GreeSE%20No.101.pdf on 5th Jan, 2019.

Murshed, M., & Saadat, Y. (2018). An empirical investigation of non-performing loans and Governance: A South Asian perspective. *World Review of Business Research*, *8*(1), 188-206.

Muvingi, J., Sauka, K., Chisunga, D., & Chirume, C. (2017). Modelling the sensitivity of Zimbabwean commercial banks' non-performing loans to shocks in macro-economic variables and micro-economic variables. *International Journal of Economics Behavior and Organization, 5*(4), 92-99.

Nkusu, M. (2011). Nonperforming loans and macrofinancial vulnerabilities in advanced economies. IMF Working Paper 11/161. Retrieved from https://www.imf.org/external/pubs/ft/wp/2011/wp11161.pdf on 6th Jan, 2019.

Nyor, T., & Mejabi, S. K. (2013). Impact of Corporate governance on non-performing loans of Nigerian deposit money banks. *Journal of Business and Management, 2*(3), 12-21.

Ozili, P. K. (2018). Banking stability determinants in Africa. *International Journal of Managerial Finance*, *14*(4), 462-483.

Patnaik, B., Satpathy, I., & Mohapatra, A. (2011). NPA's side effect and curative mantra. *International Journal of Research in Commerce and Management, 2*(7), 77-80.

Park, J. (2012). Corruption, soundness of the banking sector, and economic growth: A cross-country study. *Journal of International Money and Finance*, *31,* 907-929.

Patra, B., & Padhi, P. (2016). Determinants of nonperforming assets-bank-specific and macroeconomic factors: A panel data analysis of different group of commercial banks operating in India. *Theoretical and Applied Economics*, *23*(4), 215-236.

Prasanna, P. K. (2014). *Determinants of non-performing loans in Indian banking sector.* Presented at 3rd International Conference on Management, Behavioural Science and Economic Issues in Singapore. Retrieved from http://psrcentre.org/images/extraimages/27%20214306.pdf on 28th Dec, 2018.

Quagliariello, M. (2006). Banks' riskiness over the business cycle: A panel analysis on Italian intermediaries. Bank of Italy Economic Research Paper No. 599. Retrieved from https://ssrn.com/abstract=935021

Rachman, R. A., Kadarusman, Y. B., Anggriono, K., & Setiadi, R. (2018). Bank-specific factors affecting non-performing loans in developing countries:

Case study of Indonesia. *Journal of Asian Finance, Economics and Business, 5*(2), 35-42.

Rajeev, M., & Mahesh, H. P. (2010). Banking sector reforms and NPA: A study of Indian commercial banks. Working Paper 252. Retrieved from http://www.isec.ac.in/WP%20252%20%20Meenakshi%20Rajeev%20and%20H%20P%20Mahesh.pdf on 1st Jan. 2019.

Rajha, K. S. (2016). Determinants of non-performing loans: Evidence from the Jordanian banking sector. *Journal of Finance and Bank Management, 4*(1), 125-136.

Ranjan, R., & Dhal, S. C. (2003). Non-performing loans and terms of credit of public sector banks in India: An empirical assessment. *Reserve Bank of India Occasional Papers*, *24*(3), 81-121.

Richard, E. (2011). Factors that cause non-performing loans in commercial banks in tanzania and strategies to resolve them. *Journal of Management Policy and Practice*, *12*(7), 50-58.

Rodrigues, P. M. M. (2015). Macro determinants of non-performing loans in Portugal. Retrieved from https://run.unl.pt/bitstream/10362/15076/1/Branco_2015.pdf on 10th Jan, 2019.

Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research*, *22*(3), 203-224.

Samir, & Kamra, D. (2013). A comparative analysis of non- performing assets (NPAs) of selected commercial banks in India. *Opinion: International Journal of Management, 3*(1), 68-80.

Sanya, S., & Wolfe, S. J. (2011). Can banks in emerging economies benefit from revenue diversification? *Financial Services Research Journal*, *40,* 79-101.

Sarkar, N., & Nahar, S. (2017). The impact of ownership structure on bank credit risk: Evidence from Bangladesh. *Eurasian Journal of Business and Economics, 10*(19), 19-36.

Satpathy, A., Behera, A., Ranjan, S., & Kumar, S. (2015). Macroeconomic factors affecting the NPAs in the Indian banking system: An empirical assessment. *IUP Journal of Bank Management*, *14*(1), 57-74.

Sheefeni, P. J. (2015). Evaluating the impact of bank specific determinants of non-performing loans in Namibia. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB)*, *4*(2), 1525-1541.

Shehzad, C. T., De Haan, J., & Scholtens, B. (2010). The impact of bank ownership concentration on impaired loans and capital adequacy. *Journal of Banking & Finance*, *34,* 399-408.

Sengupta, R., & Vardhan, H. (2017). Non-performing assets in Indian banks: This time it is different. Working Paper 2017-2019. Retrieved from http://www.igidr.ac.in/pdf/publication/WP-2017-019.pdf on 12th Jan, 2019.

Stefanelli, V., & Cotugno, M. (2012). An empirical analysis on board monitoring role and loan portfolio quality measurement in Banks. *Academy of Banking Studies Journal*, *11,* 1-29.

Stiroh, K. J., & Rumble, A. (2006). The dark side of diversification: The case of US financial holding companies. *Journal of Banking & Finance*, *30,* 2131-2161.

Swamy, V. (2015). Modelling bank asset quality and profitability: An empirical assessment. *Economics,* Discussion Paper No. 2015-27.

Touny, M. A., & Shehab, M. A. (2015). Macroeconomic determinants of non-performing loans: An empirical study of some Arab countries. *American Journal of Economics and Business Administration, 7*(1), 11-22.

Weill, L. (2011). How corruption affects bank lending in Russia. *Economic Systems*, *35,* 230-243.

Zribi, N., & Boujelbene, Y. (2011). The factors influencing bank credit risk: The case of Tunisia. *Journal of Accounting and Taxation*, *3*(4), 70-78.