International Journal of Contemporary Issues in Social Sciences
Volume 2, Issue 4, 2023 ISSN(P):2959-3808 | 2959-2461

IMPACT OF RECOVERIES OF NPLS ON PROFITABILITY OF BANKS IN PAKISTAN. A QUANTITATIVE RESEARCH ARTICLE

Mudassir Zaheer (UBL) [1]; Dr. Jamshed Adil (SMIU) [2]; Agha Salman Jamshed[3]; Shiraz Shabbir (UBL) [4]; Hussain Ali (BAHL) [*5]

[1]Head of SBP Credit, CCAD & MIS Reporting; [2]Dean SMI University, Faculty of Business Administration; [3]Lecturer Emaan Institute of Management Sciences; [4]Manager Analytics, MIS & CCAD Reporting; * [5]NPLs Analyst Remedial Asset Management

[1]mudassir.zaheer19@gmail.com; [2]jamshed.adil86@gmail.com; [3]aghas1893@gmail.com; [4]shiraz.shabbir76@gmail.com; *[5]hussainali1719@gmail.com

Corresponding Author: *

Received: 03 October, 2023 **Revised:** 01 November, 2023 **Accepted:** 13 November, 2023 **Published:** 25 November, 2023

Abstract:

The aim of this study is to investigate the impact of recoveries of non-performing loans (NPLs) on the profitability of banks in Pakistan. Using a sample of 20 banks over a period of five years from 2016 to 2020, this study employs multiple regression analysis to examine the relationship between recoveries of NPLs and bank profitability. The findings indicate that recoveries of NPLs have a positive and significant impact on bank profitability. Therefore, banks need to focus on recovering their NPLs to enhance their profitability. Moreover, the societal implications of NPL recoveries are considered, focusing on the effects on borrowers and the wider society. The study examines the potential benefits, such as reduced financial distress for individuals and improved access to credit for productive activities. It also explores any potential adverse consequences, such as social inequality or moral hazard that may arise from successful NPL recoveries. Overall, this research contributes to a deeper understanding of the impact of recoveries in NPLs. By examining the economic, financial, investor, and societal dimensions, it provides valuable insights for policymakers, financial institutions, investors, and other stakeholders, aiding in the formulation of effective strategies and policies to manage NPLs and foster sustainable economic growth. We especially thankful to our Supervisor Our Research Team is highly regarded for their expertise and dedication in the field of NPL research. His insightful contributions and guidance have significantly influenced the understanding and advancement of NPL management strategies. He is known for his polite and pleasant demeanor. Colleagues and students alike appreciate his exceptional mentorship and support, which have been instrumental in their professional growth. Our supervisor's presence brings a sense of warmth and encouragement, creating a conducive atmosphere for meaningful discussions and innovative thinking. Our Research Team is highly regarded for their expertise and valuable contributions in the field of research. His dedication and commitment to advancing knowledge in the area of NPLs have been commendable. With his vast experience and guidance, he has positively influenced the academic and professional growth of many individuals. Our Research Team's amiable demeanor and pleasant nature make a pleasure to work with, fostering a supportive and collaborative research environment.

Keywords: (Non-Performing Loans (NPLs), Loan recoveries, Credit risk, Asset quality, Financial stability, Economic impact, Bank profitability, Capital adequacy, NPL management, Loan resolution strategies, Workout process, Debt restructuring, Bad debt provisioning, Credit risk assessment, Loan portfolio analysis, NPL resolution frameworks, NPL disposal strategies, Investor confidence, Financial institution resilience, Borrower distress, Credit flow, Credit market efficiency, Risk management, Regulatory frameworks, Economic recovery).

INTRODUCTION

The banking industry is an essential component of the economy, and the profitability of banks is a crucial indicator of their performance. However, banks are exposed to various risks, including credit risk, market risk, and operational risk. Among these risks, credit risk is the most significant, and it arises from the possibility that borrowers may default on their loans, leading to non-performing loans (NPLs). NPLs refer to loans that are past due by 90 days or more and are considered as a measure of the quality of a bank's loan portfolio.

NPLs have become a significant concern for banks, as they affect their profitability and solvency. When a bank has a high level of NPLs, it may incur additional costs related to loan loss provisions, legal expenses, and loan recovery. Moreover, NPLs can also erode the capital base of a bank, making it vulnerable to insolvency. Therefore, it is essential to examine the impact of recoveries of NPLs on bank profitability to help banks manage their loan portfolios effectively.

Research Question:

What is the impact of recoveries of non-performing loans on the profitability of banks in Pakistan?

Novelty of Research (Newness)

The novelty of research on the impact of recoveries in Non-Performing Loans (NPLs) lies in understanding the potential effects and outcomes of successful loan recoveries on various stakeholders and the broader economy. By investigating this area, researchers aim to shed light on the following aspects:

Economic implications: Analyzing the impact of NPL recoveries can reveal the effects on overall economic performance, such as improved financial stability, increased lending capacity, and enhanced credit flow to productive sectors. Understanding these implications can guide policymakers in formulating effective measures to manage NPLs and stimulate economic growth.

Financial institution resilience: Examining the impact of NPL recoveries on financial institutions provides insights into their ability to manage risk, enhance capital adequacy, and improve profitability. This research helps financial institutions develop strategies to mitigate credit risk and strengthen their balance sheets.

Investor perspectives: Investigating the impact of NPL recoveries on investor confidence and perception of risk can inform investment decisions and portfolio management strategies. Understanding how successful recoveries affect investor sentiment and behavior contributes to a more comprehensive understanding of financial markets.

By exploring these dimensions, research on the impact of recoveries in NPLs contributes to a deeper understanding of the dynamics between credit quality, financial stability, economic growth, and various stakeholders' interests.

Objective of Research:

The objectives of research on the recoveries of bad debts (Non-Performing Loans) may include:

Assessing the effectiveness of different recovery strategies: The research aims to evaluate the various approaches used by financial institutions to recover bad debts, such as debt restructuring, asset disposal, legal proceedings, or debt-for-equity swaps. By comparing the outcomes of these strategies, the research seeks to determine their relative effectiveness in maximizing recovery rates and minimizing losses.

Identifying key factors influencing successful recoveries: The research aims to identify the critical factors that contribute to successful recoveries of bad debts. This includes analyzing borrower characteristics, collateral valuation, loan documentation quality, industry-specific factors, macroeconomic conditions, and regulatory frameworks. Understanding these factors can help financial institutions develop more targeted and efficient recovery strategies.

Examining the role of technology and data analytics: The research investigates the impact of technological advancements and data analytics on bad debt recoveries. This includes exploring the use of artificial intelligence, machine learning, and predictive modeling in identifying potential recovery opportunities and optimizing collection efforts. The objective is to assess how these tools can improve recovery rates and streamline the debt recovery process.

Evaluating the implications for financial institutions: The research aims to understand the implications of successful bad debt recoveries on the financial institutions' financial health, profitability, and risk management practices. It examines how recoveries affect key financial indicators, such as capital adequacy, provisioning requirements, and overall portfolio quality.

Analyzing the impact on borrowers and the broader economy: The research assesses the consequences of bad debt recoveries on borrowers and the wider economy. This includes examining the effects on borrowers' financial well-being, access to credit, and potential implications for social inequality. Additionally, the research analyzes the macroeconomic impact of successful recoveries on financial stability, credit availability, and economic growth.

Providing recommendations and best practices: Based on the research findings, the objective is to offer recommendations and best practices for financial institutions, policymakers, and regulators. These recommendations may include strategies for improving recovery rates, enhancing risk management frameworks, refining regulatory guidelines, and fostering a conducive environment for debt resolution.

By achieving these objectives, the research contributes to a better understanding of bad debt recoveries, enabling stakeholders to make informed decisions, implement effective recovery strategies, and mitigate the negative consequences of bad debts on financial institutions and the economy as a whole.

Literature Review:

Various studies have examined the impact of NPLs on bank profitability. For instance, Demirgüç-Kunt and Huizinga (1999) found that NPLs have a negative effect on bank profitability. Similarly, Ellyne and Zhang (2009) found that NPLs negatively affect bank profitability in China. Moreover, various studies have shown that NPLs have a negative impact on bank efficiency, credit growth, and risk-taking behavior (Berger et al., 2000; Beck et al., 2013).

However, there is a lack of studies that investigate the impact of recoveries of NPLs on bank profitability. One study that examines this relationship is Naceur and Goaied (2001), which found that recoveries of NPLs have a positive impact on bank profitability in Tunisia. Moreover, a study by Harymawan and Wahyudi (2017) found that loan recovery has a positive and significant impact on bank profitability in Indonesia. Therefore, this study aims to fill this research gap by examining the impact of recoveries of NPLs on bank profitability in Pakistan.

Recent years, non-performing loans have been widely discussed in the literature. Granting credit facilities by commercial banks is the primary function, which exposes them to credit risk. Credit risk presents the main risk faced by commercial banks, and banks' financial performance is dependent directly on the quality of the loan portfolio (Giesecke, 2003; Klein, 2013). According to Kaaya and Pastory (2013), credit risk is by far the most significant risk faced by banks, and the performance, survival, and sustainability of their business depend on accurate measurement, sound, and effective management of the risk relative to any other risks. The globalization process has increased competition in banking sectors which is reflected in reducing profit margins and profitability of banks, and thus banks are under pressure to better manage with credit risk exposure (Aliu & Sahiti, 2016). According to Basel Committee (2000), credit risk is the risk of loss due to a nonpayment of an obligation in terms of a loan of other lines of credit. Chen and Pan (2012) define credit risk as the degree of value fluctuation in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Loans and other lines of credits that are at risk for default are usually categorized according to collection expectations into categories such as: "standard", "doubtful" and "loss" (Kalapo et al., 2012; CBK, 2019). Banks are obliged to use nonperforming loans to allocate allowances for credit losses that are collective, impersonal (not related to the specific borrower), and expected (Voloshy, 2020). Loan loss allowances present a safeguarding instrument for banks that amortize the shocks that banks' financial performance faces when a loan is not paid. Credit risk, measured by non-performing loans, is used as a determinant for bank profitability. The high level of non-performing loans adversely affects provisioning for doubtful debts and written-off loans, which normally affects profitability and capital levels. The NPL ratio serves as a standard measure for quality assets because the risk level is a key factor driving banks' overall performance (Elekdag et al., 2019). We have several papers that study factors that contribute to increasing the level of non-performing loans (Klein, 2013; Ozil, 2019; Kingu et al., 2018) and all came to the same conclusions that there are two categories of determinants of NPL: first, banks specific (size, capitalism, liquidity, and efficiency), and secondly macroeconomic factors (GDP, inflation rate, unemployment rate, and investment rate). Kithnji (2010) emphasized more specific factors that are a source of credit risks such as inappropriate laws, low capital, liquidity levels, direct lending, massive licensing of banks, poor loan underwriting, laxity in credit assessment, poor lending practice, government interference, and inadequate supervision by the central bank. Whereas, Arko (2012) state that institutions with an aggressive approach, report a large proportion of the loan disbursement to become non-performing loans and finally result in the bad debts, with negative consequences on their overall financial performance. The level of non-performing loans depends on the interest rate and business cycles. It is proved that the level of non-performing loans increases when the economy is in recession; and when the economy has a positive trend, the quality of the portfolio record improvements (Beck et al., 2013; Espinoza & Prasad,2010).

Classification & Provisioning Matrix (Sector-wise)
As per last updated Prudential Regulations

Sector	OAEM	Provision Requirement	Sub Standard	Provision Requirement	Doubtful	Provision Requirement	Loss	Provision Requirement4
SE	90 days overdue	10%	180 days overdue	25%	1 Year Overdue	50%	1 & a Half Year Overdue	100%
ME	N/A	N/A	90 days overdue	25%	180 days overdue	50%	1 Year Overdue	100%
Corporate / Commercial	N/A	N/A	90 days overdue	25%	180 days overdue	50%	1 Year Overdue	100%
Bills - FDBP/FEBP/IDBP	N/A	N/A	N/A	N/A	N/A	N/A	180 days overdue	100%
Agriculture - Production /Working Capital (RF / CF / STF)	90 days overdue	-	1 Year Overdue	20%	1 & a Half Year Overdue	50%	2 Year Overdue	100%
Agriculture - Development / Fixed Investment (TF / LTF)	90 days overdue	-	1 Year Overdue	20%	2 Year Overdue	50%	3 Year Overdue	100%

Figure 1.1 Classification & Provisioning Matrix (Sector-wise).As per last updated Prudential Regulations

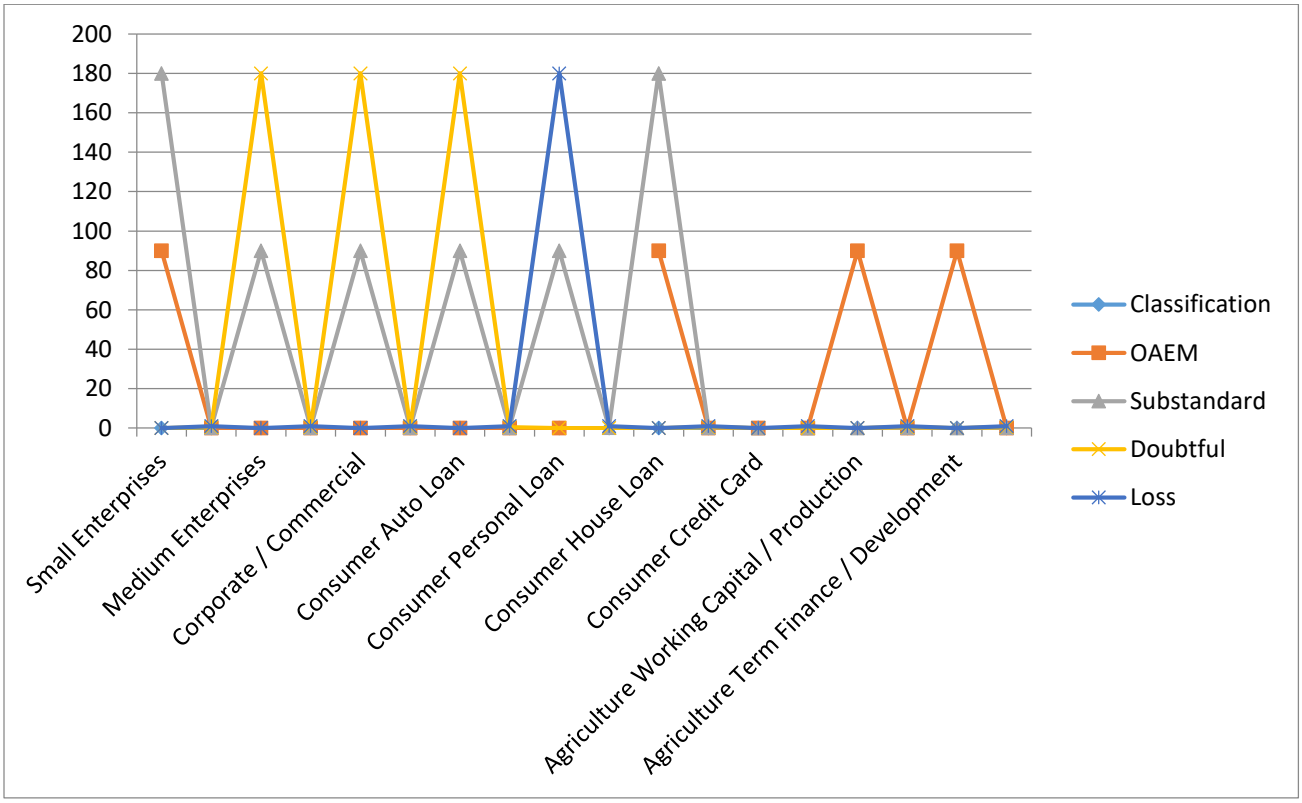

Figure 1.2 Scatter Lines Chart of Different Borrower for Advances Loans.

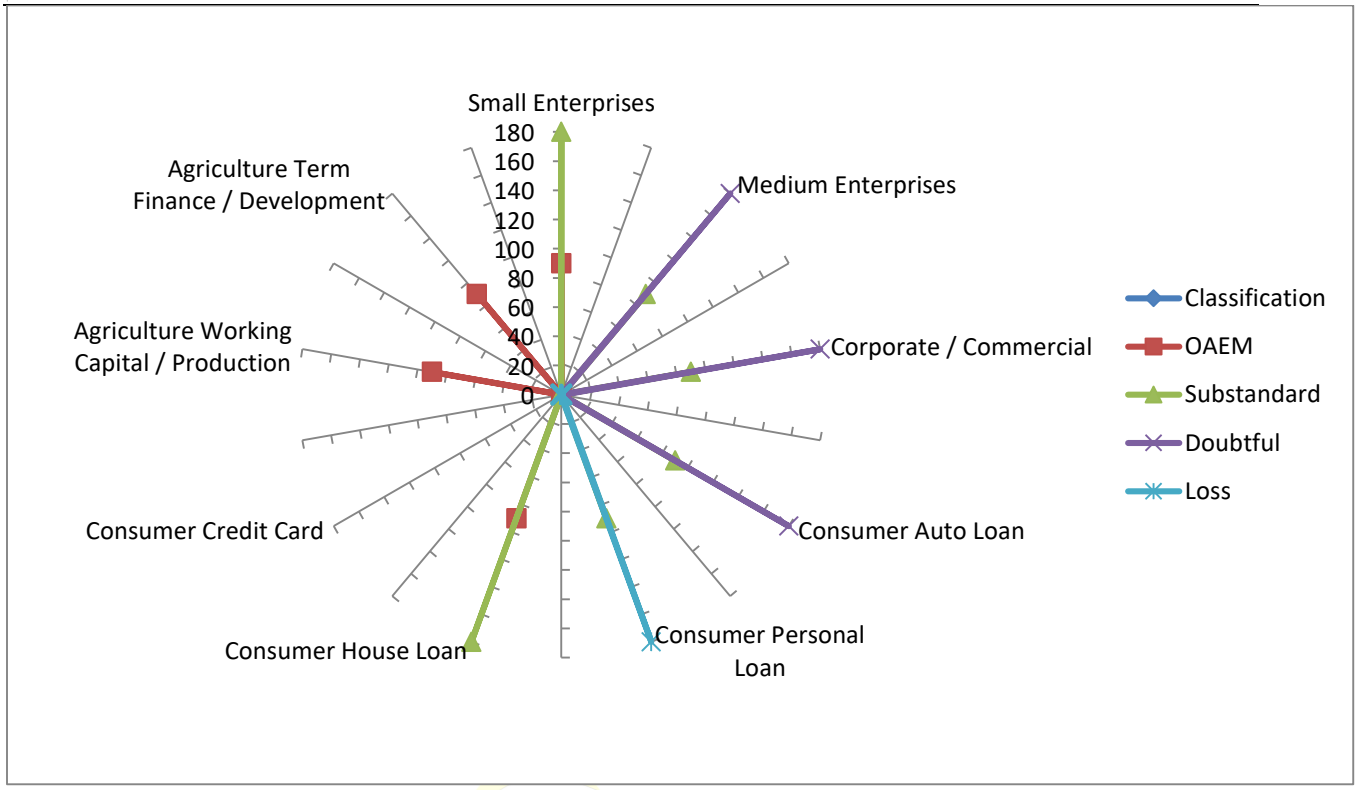

Figure 1.3 Radar Chart of Different Days Past Dues Since Classification till Downgrading for Non Performing Loans.

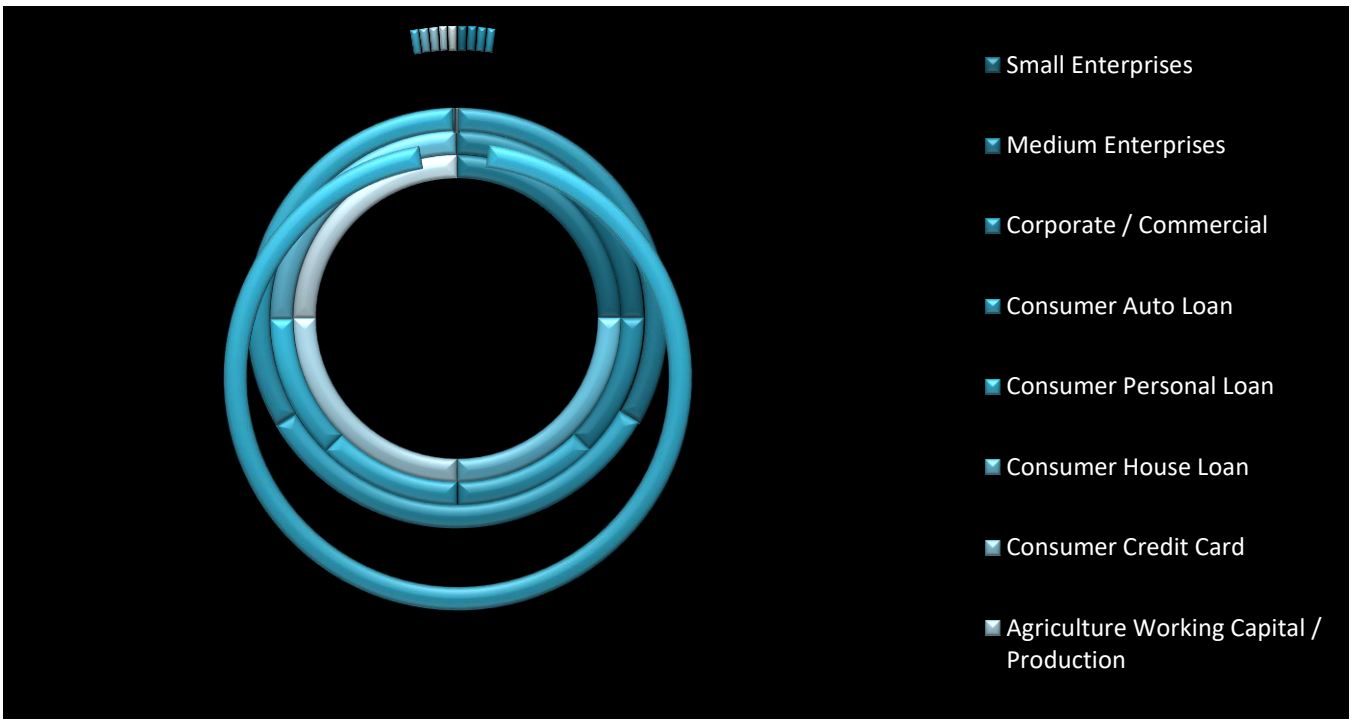

Figure 1.4 Circle Chart of Different Segments for Non Performing Loans.

Identification of determinants that influence non-performing loans is important for efficient credit risk management and supervisory bodies to ensure the financial stability of the banking sector (Ozil, 2019). Banking system is a combination of financial institutions responsible for safekeeping and lending of money and the provision of other financial services to the populace (CBN, 2016). Technically, deposit takers whose liabilities are included in the national definition of broad money are very significant component of the banking system. In most emerging economies where the non-bank financial institutions are still nascent, the deposit takers component of the banking system is usually huge. Hence, shock on asset side of a group of banks, through rising amount of NPLs in the credit portfolio could spillover and affect the stability of the system. A good measure of banking stability is essential for addressing issues of instability in the system.

In most academic literature, stability of banks has been measured under CAMELS framework by using individual indicator like return on assets (ROA) and return on equity (ROE) (see Kolapo et al. (2012), Warue (2013), Mensah and Adjei (2015)). Return on assets measures efficiency of deposit takers in the use of assets in generating earnings. ROA reveals how debt drives returns, the same way ROE shows the extent of equity investment effectiveness. Banking system stability may not be adequately captured with a single indicator because bank's capital adequacy ratio, for instance may not guarantee stability. Gadanecz and Jayaram (2009) note that central banks like Czech National Bank (CNB), Hong Kong Monetary Authority (HKMA), Central Bank of Turkey (CBT) and Swiss National Bank (SNB) are now measuring banking stability using composite indices. Hence, a Z-score computed with ROA and ROE could serve as a proxy for banking system stability.

Financial stability index has been found useful due to its capabilities; it mirrors the country's financial structure (ECB, 2007), accounts for financial innovations (Boudebbous and Chichti, 2013), allows policy-makers to monitor the development of stressful situations and considers the state of banks' behaviour on individual basis (Raluca and Dumitru, 2014). Sere-Ejembi et al. (2014) employ conference board methodology, while Raluca and Dumitru (2014) apply Z-score that was first proposed by Altman (2000) and developed by Mercieca et al. (2007) to construct banking system stability index. Schaeck (2007) argues that the main advantage of Z-score is computational simplicity for financial institutions or corporations. Extant theories have established a connection between NPLs and banking stability, thus, it is also imperative to understand the fundamentals of NPLs.

The concept of NPLs has been expressed by different authors in the literature. One common feature of NPL is the period over which the principal and interest remain unpaid and un-serviced before a loan is classified as non-performing. Caprio and Klingebiel (1990) described NPLs as loans that do not generate income over a sustained period of at least three months. In the same vain, Alton and Hazen (2001) expressed NPLs as loans that are 90 days or more past due or no longer accruing interest. The IMF Financial Soundness Indicators Compilation Guide of 2006 recommends that loans are classified as non-performing when payment of principal and interest are past due by three months or more or when interest payments equalling three months interest or more have been capitalized, refinanced or rolled over. One interesting argument put forward by the IMF

Guide is that a loan can also be classified as non-performing when the debtor files for bankruptcy. In Nigeria, NPLs is classified into substandard, doubtful, very doubtful and lost.

The theory of NPLs as it relates to stability of banks rests on three pillars: (i) information asymmetry, (ii) adverse selection and (iii) moral hazard theories. They provide useful information on the traditional causes of loan default that translates to banking system instability. Information asymmetry theory was first applied by Akerlof (1970). The theory states that it may be complex to differentiate between good and bad borrowers and this may lead to adverse selection and moral hazard problems. In line with the theory, Cottarelli et al. (2005) and Kraft and Jankov (2005) show the role of loan growth in bank risk-taking and resulting instability. The theory also relates to contagious withdrawals when depositors are imperfectly informed about the type of shocks hitting banks and about interbank exposures (De Bandt and Hartmann, 2000).

Propounded by Akerlof (1970) and later expanded by Rothschild and Stiglitz (1976), the adverse selection theory describes the situation where the probability of loan default increases with rising interest rate and the quality of borrowers worsens as the cost of borrowing rises (Musara and Olawale, 2012). The theory is founded on the assumption that banks are not certain in selecting credit-worthy borrowers from a pool of loan seekers with different credit risk exposures ex-ante. Thus, financial intermediaries are more likely to lend to high-risk borrowers who are not concerned about the harsh lending conditions and are prone to loan default (Ezeoha, 2011). Pagano and Jappelli (1993) argue that information sharing reduces adverse selection problems by enhancing information on loan applicants. More so, Padilla and Pagano (2000) document that if banks exchange credit information on defaults, then borrowers are encouraged to apply more energy in their projects knowing fully well that loan default carries the penalty of higher interest rates or no future access to credit facility.

Before Stiglitz and Weiss (1983) and Stiglitz (1990) proposed moral hazard model for credit market, Arrow (1963) documents that the phenomenon of using private information to benefit from an incomplete contract in the presence of information asymmetry is known as moral hazard. Musara and Olawale (2012) also noted that moral hazard exist where the borrower of bank credit takes action that adversely affects the returns to the lender. Gorton and Pennacchi (1995) posit that a bank that makes and sells loans is subject to a moral hazard problem with respect to screening borrowers. The theory is based on the assumption that the likelihood of borrowers engaging in activities that will guarantee repayment of bank credit extended to them cannot be determined ex-post by banks.

Empirical Literature Previous empirical findings provide evidence of varying NPLs drivers across bank categories in emerging and advanced economies. Khemraj and Pasha (2009) employ fixed effect model and found that real effective exchange rate has a significant positive impact on NPLs for small, medium and large banks in Guyana. In a more detailed study, Raluca and Oaneab (2014) examined the main drivers of stability of commercial and co-operative banks; and if these factors vary among the two classes of banks in Romania. The study used Z-score to proxy bank stability index. The authors fitted the macroeconomic variables spanning 2008 to 2012 on simple regression models, one for each class of banks. The results revealed that only GDP growth and interbank rate positively impact on co-operative bank' stability. However, the result

could not find any significant factor that could affect the stability of commercial banks among the macroeconomic variables considered. Ekanayake and Azeez (2015) attribute NPLs in Sri Lanka banking system to both macroeconomic conditions and banks' specific factors. They established that NPLs have a positive relationship between loan to asset ratio and prime lending rate, and argued that larger banks incur lesser loan defaults compared to smaller banks.

Some studies attributed varying NPLs drivers across banks to certain factors. According to Detragiache and Gupta (2006), larger banks with cross boarder banking operations could manage systemic crisis better than smaller banks due to easier source of capital in the international financial markets with less severe informational barriers in these markets. Martinez-Miera and Repullo (2010) attributed varying drivers of NPLs across different sizes of banks to factors such as bank customer relationships and ownership structure; geographic operational coverage (regional versus national); access to external finance; capital market discipline exposure; and differential regulatory treatment. Since NPLs vary across bank categories, it therefore suggests that drivers of NPL could as well vary across bank type. Recognizing these differences, Bertay et al. (2013) posit that stringent market discipline may be necessary but not expedient for lower categories of banks.

In Nigeria, Akinlo and Mofoluwaso (2014) examine the drivers of NPLs in a macroeconomic model using annual data. The result provides evidence of negative relationship between economic growth and NPLs, while unemployment, credit to the private sector and exchange rate exert positive influence on NPLs. Kanu and Hamilton (2014) investigated macroeconomic determinant's of NPLs in two fronts by employing simple OLS regression. The study established inverse relationship between NPLs and GDP in Nigeria. These studies did not consider classification of banks in any form to account for peculiarity of existing banking groups. Similar studies in other climes without recourse to geographical coverage were done by Curak, Pepur and Poposki (2013), Nkusu (2011), Messai and Jouini (2013), ˇ Skarica (2014) and Vasiliki et al. (2014).

On the effects of NPLs shocks on banking system stability, contemporary empirical evidences are evidently unavailable in Nigeria, especially with respect to different bank categories or sizes. Kolapo et al. (2012) use a sample of five commercial banks to examine the effect of credit risk on the performance of commercial banks in Nigeria. The results show that the effect of credit risk on bank performance is cross-sectional invariant. Onwe (2015) investigates the relationship between liquidation and banking industry stability in Nigeria. The study used transformed Pearson correlation coefficient to separately determine the effect of bank failure and NPLs on the banking system stability. A long run relationship between bank failure and stability of banking industry was established.

In other jurisdictions, the response of banking stability to NPLs across bank size is mixed. Boyd and Prescott (1986) posit that larger banks could reduce NPLs portfolio by diversifying loan portfolio risks more efficiently than small banks due to higher economies of scale and scope. Boot and Thakor (2000) also argued that larger banks tend to minimize NPLs through better credit administration like credit rationing since fewer credit investments of a higher quality can increase return of the singular investment and hence engenders financial soundness. Beck, et al. (2006) found that large banks can make higher profit, which provide higher capital buffer that

mitigates effects of adverse external macroeconomic, NPLs and liquidity shocks, thus reducing the probability of bank crisis. Liu and Wilson (2011) found that banking stability varies across bank types, in that banks with a regional focus are more stable on average than national banks. Laeven et al. (2014) investigated bank systemic risk across large and small banks in 52 countries. Empirical result shows that large banks create more individual and systemic risk than smaller banks, especially when large banks have insufficient capital or unstable funding.

Dayong et al. (2016) conducted a follow up evaluation by examining the impact of NPLs on bank behavior using a threshold panel regression model with data set that covered sixty city commercial banks, sixteen state-owned banks and jointstock banks, and eleven rural commercial banks. The results confirmed the moral hazard hypothesis, which suggests that an increase in the NPLs leads to more lending risk, thus potentially stimulating more poor quality loan and financial system instability.

Spiritual Leadership Theory is a leadership model that uses an intrinsic motivation model by combining the existence of a vision, hope / faith, and altruistic love as well as workplace spirituality, and spiritual well-being. spiritual survival [15]. A term often used synonymously with charity, altruistic love, and the values contained therein are manifested through selfless care, care, and benevolence, both for oneself and for others. For spiritual leadership theory, altruistic love is defined as a sense of wholeness, harmony, and well-being generated through care, care, and respect for oneself and others. Underlying this definition are the values of patience, kindness, lack of envy, forgiveness, humility, selflessness, self-control, trust, loyalty, and honesty [5], [16]. The study of [5] regarding the causal model of spiritual leadership theory shows that there is a positive relationship between the quality of spiritual leadership, spiritual survival and organizational outcomes, which consist of commitment and productivity. Spiritual leadership values developed by [5]are: vision, hope / faith, altruistic love (trust, forgiveness, integrity, honesty, courage, humility, kindness, empathy, patience). The agency theory approach describes shareholders as principals and management as agents. Management is a party contracted by shareholders to work for the interests of shareholders, for this reason management is given some power to make decisions in the best interests of shareholders so that management is obliged to account for all its efforts to shareholders. According to agency theory, conflicts between principal and agent can be reduced by aligning interests between principal and agent. The presence of share ownership by managerial (insider ownership) can be used to reduce the agency cost that has the potential to arise, because by owning company shares it is expected that managers will feel the benefits directly from every decision they make. This process is called the bonding mechanism, which is a process to equalize management interests through a binding program for management in the company's capital [17]. According to bank theory, there are six (6) main types of risk associated with bank credit policies, namely; credit risk (risk of repayment), interest risk, portfolio risk, operating risk, credit deficiency risk and trade union risk [18]. The credit risk management system includes risk identification, measurement, assessment, monitoring and control [18]. The integration of the dimensions of the spiritual leadership theory and risk management can formulate propositions to build organizational performance. The proposition is empathy credit risk (ECR), which is the behavior of a leader who is able to lead by understanding and understanding the situation of others, able to

feel the distress of others, able to understand economic conditions to protect the company from business failure. Emphatic credit risk will reduce non-performing loans and potentially affect the company's financial performance. The spiritual dimension of leadership with an empathetic approach, namely being able to understand and read other people's feelings, feel the difficulties of others, understand and want to do something is integrated with indicators from agency theory with a credit risk approach, namely risk identification, measurement, assessment, monitoring and control. Produce an Emphatic credit risk indicator, namely: Emphaty solution, Monitoring and evaluating, Interpersonal approach and Risk identification. Empathy Credit Risk (ECR) is a new method approach integration of some theory of [5], [19]–[21] that is placed between NPL and performance is expected to reduce non -performing loan (NPL). This approach uses forms of empathy in resolving bad credit problems with customers, so that with a more humanistic approach, it is hoped that bad credit customers will be able to think rationally, and foster a sense of optimism about their bad credit problems. Non-Performing Loan

One of the risks faced by banks is the risk of not repaying the credit that has been given to the debtor or known as credit risk [11]. Credit risk includes nonperforming loans [22]. Non-performing loans (NPLs) are non-performing loans in which the debtor is unable to meet loan arrears and interest payments within the agreed period in the agreement [23]. Non Performing Loans or often referred to as non-performing loans are loans that experience repayment difficulties due to gaps and / or external factors beyond the control of the debtor, such as bad economic conditions or liaison with parties who have excess funds and need funds [13]. Non-performing loans are indicated by substandard credit, credit under special mention, doubtful credit, and bad credit (Regulation of the Financial Services Authority of the Republic of Indonesia Number 33 / POJK.03 / 2018). Bank Indonesia (BI) divides nonperforming loans in Indonesia into three groups, namely substandard credit, doubtful credit and bad credit. The division of non-performing loans into three groups is based on the degree of collectability, namely the accuracy of credit repayments or credit installments [24] In the first step, the magnitude of the increase in NPLs is defined under the single-hit versus double-hit scenario informed by the OECD 2020 Economic Outlook reflecting extensive monetary and fiscal supports that have been implemented following the COVID-19 crisis. Bank NPLs are expected to rise by the NPL multiple of the bank's country of incorporation.34 This approach enables to consider the magnitude of the impact of the COVID-19 outbreak that differs across countries. This means that depending on their location, banks are not facing similar risk of increase in their NPLs. A second step consists in converting NPLs into loan losses35, by adjusting the amount of NPLs for loss given default (LGD). Since the onset of the COVID-19 crisis, government loan guarantees have been implemented in many jurisdictions. While government loan guarantees are not impacting the amount of assets exposed at potential risk of losses, they may influence the potential losses that a bank may face from assets exposed at potential risk of losses. In fact, government loan guarantees are affecting the loss given default (LGD) by reducing the loss that a bank experiences when a borrower defaults. As suggested and consistently with the IMF approach (IMF, 2020b), when such guarantees are implemented, an LGD that prevails in normal times is used. Unfortunately, cross-country data on LGD are limited. In the existing literature, estimates suggest that for the United States, average LGD for unsecured bank loans over the period 1970–2009 was about 60% in normal

times (Schuermann 2004; Altman et al., 2006; Shibut and Singer, 2014; Johnston Ross et al., 2015). Alternately in the absence of government loan guarantees, an LGD during crisis times is used. Consistently with Dagher et al. (2020), an LGD of 75% is used in this study.

In the third step, the amount of bank losses that can be absorbed by actual loan loss reserves are calculated. The aim is to assess the extent of gross amount of bad assets that may be absorbed by the safety buffer a bank holds to mitigate the consequences of losses following a wave of defaults. The formula that converts loan losses during a crisis period into capital needed to absorb them is

"Capital needed is Non Performing Loans multiple increase NPLs * LGD minus reserve for loans losses".

Although banks are susceptible to credit risk the high incidence of nonperforming loans portfolio is exacerbated by poor risk appetite. According to Greuning and Bratanovic (2003), this tendency typically involves the extension of loans which initially send financial risk to a level beyond the reasonable payment capacity of the borrower. Poor selection of risks also involves loans based on the expectation of successful completion of a business transaction, rather than on the borrower's credit worthiness, and loans made for the speculative purchase of securities or goods like the case in Nigeria where huge loans were dished out by most of the failed banks on questionable and speculative basis, and most of which became nonperforming (NWAZE, 2006). Self-dealing, and loans predicted on collateral of problematic liquidation value or loans that lack adequate security margins are sources of high nonperforming loans and bank profit. For example, some former directors and chief executive officers of failed banks in Nigeria are on trail for creating huge nonperforming loans. (JIBUEZE, 2011). During the banking sector crisis in Nigeria in the 1990s and 2000s, promoters and executives of some of the failed banks were known to have been engaged in lending to themselves for the acquisition of their bank shares contrary to the law. Such loans became nonperforming and now subject to legal tussles. For example, shareholders of failed banks such as African, Oceanic, Intercontinental, etc, that had high NPLs portfolio sought the help of the court on how to sale the sick banks. (JIBUEZE, 2014). According to McNaughton & Dietz (1997) the collapse of Citibank's credit culture led to asset deterioration in one of the most well managed institutions in the world. According to them, pressure to make high profits led to a tendency to overlook well-documented credit standards during the 1980s. By definition, loans to related companies are not made objectively according to banks' normal risk-acceptance criteria. For that reason, and because a high percentage of bank failures have been caused by insider lending, bank regulators tend to restrict and monitor loans to related companies, so as to ensure good credit risk management. According to McNaughton and Dietz (1997), although banks initially emerged as deposit takers, they soon matured into intermediations of funds, thereby assuming credit risk. Credit became "the business of banking, and the primary basis on which a bank's quality and performance are judged. According to them, the credit risk management process deserves special emphasis, because proper credit risk management quality influences the success or failure of financial institutions. Studies of banking crises throughout the world show that the most frequent factor in the failure of banks has been poor asset, usually loan, quality. To this extent many bankers and regulators believe that an understanding of a bank's credit risk management process provides a leading indicator of the quality of a bank's loan

portfolio. The asset quality, in terms of performing and nonperforming categories, directly reflects the quality of management and the ability of the bank to earn profit. Minimizing nonperforming loans and increasing bank profitability require good loan management because many good credits can become problem loans because of inadequate monitoring or supervision. Loan supervision requires monitoring borrowers closely to detect signs that the borrower may have difficulty in repaying the loan. Such warnings are necessary to maximize the effect of corrective action and to minimize potential losses. In a study of many countries Caprio and Klingebiel (2002) find that nonperforming loans portfolio is the frequent determinant of bank failures. They posit for example, in 1999, Indonesia closed 61 banks and nationalized 54, of a total of 240. Nonperforming loans for the banking system was estimated at about 65 – 75 percent of total loans. Also many banks were liquidated in Japan in the 1990s due to nonperforming loans portfolio put at $1trillion. Caprio and Klingebiel assert that due to nonperforming loans portfolio, between 1984 and 1991 more than 1400 savings and loan institutions and 1300 banks failed. In the heat of the financial crises, the Central Bank of Nigeria (CBN) revoked 28 distressed and unprofitable banks licenses in 1998. And in August 2009 the CBN woke up one morning and dismissed the board and management of some banks that were unprofitable, technically distressed, and found to be carrying nonperforming loans in excess of N700billion (UGOANI, 2013a). Prior to 2004 banking sector reforms in Nigeria, total nonperforming loans in the Nigerian banking system rose from N21.27bn in 2002 through N260.19bn in 2003 to N350.82bn in 2004. Nonperforming loans as a percentage of total loans declined from N59.38bn in 2002 to N21.59bn in 2003 and marginally rose to 23.08bn in 2004. Nonperforming loans as a percentage of shareholders', funds rose from 89.17bn in 2002 through N91.99bn in 2003 to N107.82bn in 2004, indicating that shareholders' interests in the banking sector were wiped off by nonperforming loans (NNAMDI; NWAKANMA, 2011). In view of the dangerous situation, the CBN in 2009 injected a whopping sum of N620billion to cushion the effect of nonperforming loans of about N1.0trillion fraudulently perpetrated by bank executives (SANNI, 2010). Worried at the level of nonperforming loans portfolio, the CBN set up the Asset Management Company of Nigeria, (AMCON) in 2010 to deal with the issue of toxic assets on permanent basis in accordance with international best practices (ONOH, 2014). The purchase of nonperforming loans of banks by Asset Management Corporation of Nigeria (AMCON) and subsequent injection of fresh capital into some of the banks led to improvement in asset quality, liquidity, capitalization, and profitability of banks. Thus, the shareholders' funds of the banking industry increased by 696.18 percent from N312.36 billion in 2010 to N2,486.95 billion in 2011. The AMCON which commenced operation in 2010, was very visible in the Nigerian financial system in 2011 as it acquired three Deposit Money Banks (DMBs) that were established to take over the assets and assume the liabilities, of the failing banks already carrying huge nonperforming loans. The three bridge banks acquired by AMCON by purchase and assumption transaction were: Mainstreet Bank Limited, Keystone Bank Limited and Enterprise Bank Limited (IBRAHIM, 2011). According to Ibrahim (2012) due to the activities of AMCON total shareholders' funds in the banking industry rose by N434.24bn from N1,934 trillion in 2011 to N2369 trillion in 2012. This was attributable to the purchase of the nonperforming loans of the DMBs by AMCON that allowed some of the banks to return to the path of profitability. In many parts of the world nonperforming loans portfolio is known to have

negative effect on bank profitability. According to Lata (2014) nonperforming loans in Bangladesh has become a problem that has significant negative impact on bank profitability. He posits that nonperforming loans is a topic of great concern in Bangladesh. He states that for the last eight years, loan default as a percentage of outstanding loans in state owned commercial banks were 50 percent or above where private commercial banks and foreign commercial banks hold maximum 5 – 10 percent of the total. To this extent, Banks in Bangladesh have been given ultimatum to bring down their soaring nonperforming loans to below 10 percent of their respective outstanding loans. The causes of nonperforming loans are usually attributed to the lack of effective monitoring and supervision on the part of banks, lack of effective lenders' recourse, weaknesses of legal infrastructure, and lack of effective credit recovery strategies (HANEEF; RIAZ, 2012). Despite the activities of AMCON the ratio of NPLs to total loans in Nigeria remains high at 5.82 percent as at 2011, and short of the global best practice of 3 percent. In view of the worrisome situation, the CBN has ordered commercial banks to double provisions on performing loans (PLs) to 2 percent from 1 percent, to build adequate buffers against unexpected losses (Abioye, 2015). To this extent, lending institutions like the Bank of Industry (BOI) is paying greater attention to the recovery of NPLs. The bank reports that it has hastened the pace of recovery of NPLs that yielded N1.3billion as at December 31, 2014. According to Olaoluwa (2015) as at December 31, 2013, the bank's NPL ratio was 12.98 percent. And by the end of 2014, the ratio improved to 5.81 percent and by March, 2015 it further improved to 4.09 percent. The bank states that its target is to reduce the NPLs ratio to not more than 3 percent, in "accordance with the global best practice". The amount of nonperforming loans recovered by the bank between January and March 2015 was N403 million.

Previous literature shows that economic growth falls after a banking crisis.2 Our data offers novel insights by highlighting a link between the dynamics of NPLs and post-crisis growth. We use the local projection (LP) method (Jordà, 2005) to track post-crisis NPL and output. We find a close relationship between elevated NPLs and the severity of post-crisis recessions. Output in crises with elevated and unresolved NPLs is persistently lower than in crises with low NPLs.

Given the close relationship between NPL dynamics and output growth post-crisis, it is important to understand the "risk factors" of adverse NPL dynamics. We use a machine learning approach to study which pre-crisis conditions matter for the likelihood of elevated NPLs, the duration and magnitude of NPL build-up, and the likelihood of timely NPL resolution.3 We find that countries with higher pre-crisis GDP per capita (which may proxy institutional strength) and lower corporate leverage are less likely to experience elevated NPLs during a crisis. For the crises with elevated NPLs, lower bank return on assets and shorter corporate debt maturities predict higher peak NPLs, while lower government debt, flexible exchange rates and higher growth predict faster NPL stabilization and resolution. Finally, NPL stabilization and resolution takes longer in crises higher pre-crisis credit growth. Overall, these results suggest that better ex-ante macroeconomic, institutional, corporate, and banking sector conditions and policies can help reduce NPL vulnerabilities during a crisis.

To put our results to use, we place the NPL experience in European crisis countries in the GFC in historic context. We ask to which extent NPL dynamics in those countries could have been anticipated, and whether NPL resolution has been

on par with international experience. We show that slow NPL resolution in European crisis countries is predictable based on historic crisis experience and pre-crisis conditions, although the magnitude of peak NPLs was higher than the historic experience could have suggested, likely due to the subsequent sovereign debt crisis.

Our paper contributes to the literature on the causes and consequences of NPLs in several dimensions. First, we present a new comprehensive dataset on the multi-year NPL dynamics during banking crises. Our dataset complements existing data that only cover peak NPLs during banking crises (Laeven and Valencia, 2013, 2018), as well as data on general NPL dynamics over time (Balgova, Plekhanov, and Skrzypinska, 2017).4 We show that NPL dynamics during banking crises are distinct (NPLs are substantially higher and more volatile), implying possibly different causes and the need for different policies. Second, we contribute to the literature on post-crisis growth (Cerra and Saxena, 2008; Reinhart and Rogoff, 2009a, 2009b; Jordà, Schularick, and Taylor, 2013) with a new angle. We show that elevated and unresolved NPLs are an important factor for large and persistent decline in output after banking crises. Third, we add to the literature on the determinants of NPLs, which was previously based on country or region-specific data (e.g. Podpiera and Weill, 2008, and Ghosh, 2015, among others). Our contribution lies on the comprehensiveness of the data and the rigor of the methodology. Furthermore, our results have the practical merit of reducing the data requirements for NPL risk monitoring, especially in a cross-country setting where detailed data is often scarce.

The findings of our paper have important policy implications. First, the close relationship between post-crisis output growth and NPLs points to the importance of macro-financial linkages in crisis recovery. Second, the identified risk factors of adverse NPL dynamics offer useful indicators for NPL risk monitoring. Our results also suggest that better exante macroeconomic, financial, and institutional policies can alleviate the impact of banking crises. Finally, our analysis illustrates that reliable NPL data are vital for NPL monitoring and for the formulation of evidence-based NPL resolution polices.

The paper proceeds as follows. Section II describes the dataset and summarizes key stylized facts. Section III analyzes the relationship between post-crisis output growth and NPLs. Section IV studies the risk factors of NPL dynamics. Section V places the NPL experience of the European crisis European countries in a historic perspective. Section VI concludes. The paper is complemented by an online Appendix and the full dataset.

The economic literature investigating the role of financial intermediation in macroeconomic outcomes has increased significantly in the past several decades. Some theoretical models have focused on the amplifying effects of financial institutions and markets on broader economic activity and business cycles when a real or financial shock affects access to finance. Bernanke, Gertler, and Gilchrist (1996) coin the term “financial accelerator,” building on the pioneering work of Bernanke (1981, 1983) and Bernanke and Gertler (1989). A variety of the financial accelerator models offer a theoretical basis to explain the link between the financial system and the real economy.

For example, asymmetric information and financial market imperfection can amplify and propagate a shock to affect broad economic conditions through sudden changes in credit market conditions and limit firms’ access to finance. The financial accelerator literature

further developed in Bernanke, Gertler, and Gilchrist (1999) and Kiyotaki and Moore (1997) provides one of the most prominent theoretical frameworks for thinking about the macro financial linkages of NPLs.

Empirical studies also confirm adverse macro financial feedback effects of NPLs. The magnitude differs depending on the sample group of countries and the sample period. However, these studies demonstrate that an increase in NPL ratios generates a strong, albeit short-lived negative response in economic activities such as output growth, employment, and credit growth (Espinoza and Prasad 2010, Nkusu 2011, De Bock and Demyanets 2012, Klein 2013, Lee and Rosenkranz 2019). In that vein, Chapter 4 also discusses the negative impact of NPLs on bank lending and macroeconomic conditions in 12 euro area countries.

More than anything else, a large and sustained buildup of NPLs may signal the specter of a banking crisis that could develop into a nationwide financial crisis, levying a heavy toll on the entire economy. Moreover, such a crisis is likely to spread across borders as impacts spill into broader economies given closer connections through international banking and financial activities.

Noting the key role that NPLs play in financial crises, Caprio and Klingebiel (1996), Drees and Pazarbasioglu (1998), and Kaminsky and Reinhart (1999) suggest a large increase in NPLs as a signal that might directly or indirectly help predict financial crises. A credit crunch that accompanies a financial crisis often exerts disproportionately large influence on small and medium sized enterprises (SMEs), households, and infrastructure financing, hindering inclusive growth.

Once NPLs occur, they can be resolved by internal workout efforts of banks, including debt collection, debt restructuring, and debt write-off. NPL markets provide banks with additional means of resolving NPLs by enabling them to remove NPLs from loan portfolios through direct sale to NPL investors or through securitization. NPL markets and NPL resolution frameworks enable banks to sustain financial soundness and to adequately perform their role of financial intermediation. They serve as financial stabilizers and crisis management tools, and contribute to financial development, which justifies the adoption of strategies to develop NPL markets nationally.

Developing NPL markets and NPL resolution frameworks, in addition, can help strengthen international financial safety nets. Since the economies in Asia and the Pacific depend heavily on US-dollar-denominated funding and depend on banks as the major channel for such funding, the interplay between NPLs and their macro financial impacts are important in the cross border spillover of financial instability. On one hand, a large buildup of NPLs in a banking system raises the possibility of a currency crisis as international investors withdraw their investment from banks for fear of bankruptcy. On the other, a sharp currency depreciation is likely to deteriorate the quality of banks' assets and eventually lead to a banking crisis. Besides, as demonstrated by ADB (2017), the cross-border linkage of Asian financial markets has grown within the region and around the globe. This leaves Asian financial markets more vulnerable to cross-border spillover of financial shocks and means that the region's policy makers should pay attention to the bank balance sheet channel of cross-border contagion.

As the experience of the Asian financial and the global financial crises highlighted the importance

of an international financial safety net for emerging economies in coping with currency and financial crises, emerging economies in Asia have built up theirs. Nationally, they enlarged foreign reserve holdings, while introducing and strengthening macro prudential regulations on financial institutions. Regionally, they have also built up financial safety nets, as exemplified by the Chiang Mai Initiative Multi lateralization and the Asian Bond Market Initiative. The latter intends to reduce dependence on bank loans and foreign-currency-denominated external liabilities by fostering markets for local-currency-denominated bonds. Introducing NPL resolution frameworks and developing NPL markets can help strengthen Asia's international financial safety nets by complementing these existing measures.

There is no doubt that developing NPL markets and NPL resolution frameworks will be beneficial in Asia and the Pacific. This is because banks that are the key source of financing in most of the region already hold a large amount of legacy NPLs and are likely to be an important channel of cross-border spillover of financial crises. NPL markets and NPL resolution mechanisms will allow economies to enhance financial stability, manage financial crises, and promote financial development.

Analyzing how risk management protects the banks from the effects of non- performing loans. Crane, Gantz, Isaacs, Jose, and Sharp (2013) [12] stated that "risk is what makes it possible to make a profit. If there was no risk, there would be no return to the ability to successfully manage it" (p. 1). This is the reason why banks must take risks but they have to be considered of the types of risk they take because banks are a fragile institution and they are built on customer trust and brand reputation, "Risks and Risk Management in the Banking Sector". Risk management is there to help banks avoid any negative consequences that could harm the bank or its assets and liabilities (Županović, 2014) [13]. The global financial markets are constantly growing and changing, with these changes comes along a variety of risks (Bhatti & Misman, 2010) [14]. One of the risks banks face is credit risk. According to Makri, Tsagkanos, and Bellas, (2014) [15] "one of the most common indicators that is used to identify credit risk is the ratio of non-performing loans" (p. 193). The analysts expect the number of non-performing loans to increase in the years coming (Makri, Tsagkanos, and Bellas, 2014) [15]. 2.1. The Effects of Non-Performing Loans on Banks According to Brown bridge (1998) (as cited by Sheefeni 2015) [16] "most empir ical researcher's supports confirm that most banking failure or banking crisis has been caused by non-performing loans" (p. 1526). Non-Performing Loan (NPL) according to the (International Monetary Fund, 2011), is any loan in which: interest and principal payments are more than 90 days overdue or more than 90 days' worth of interest has been refinanced, capitalized, or delayed by agreement; or payments are less than 90 days overdue but are no longer anticipated. Non-performing loans have direct impact on the banks and an indirect impact on the country at large. Bank failure causes crisis and has negative impact on the economy (Sheefeni, 2015) [16]. To understand how non-performing loans can cause a bank to fail, the study has to look at how non-performing loans impacts the bank. Loans are banks main source of income and an increase in non-performing loans definitely decreases interest income of banks (Sheefeni, 2015) [16]. Ghosh., (2017) [17] did a study in the USA to identify the impact non-performing loans have. The study found that the increase in non-performing loans shows credit supply constraints for banks and hinders a bank's ability to supply more loans. This means that banks with high non-performing loans will find it difficult to provide

more loans for their customers and may end up losing customers. Ghosh, (2017) [17] stated that "both construction sector employment and GDP growth are affected the most with a rise in total (NPLs)" (p. 321). John (2018) [18] summarizes the effects of non-performing loans in four points: 1) there are high chances that the bank's ability to liquidate can be affected. 2) The bank's turnover is slowed down as there are no payments made and this is preventing the bank to make give new loans. 3) The banks revenue is reduced by the battel of interest and commission on turnover. 4) The bank is unable to serve all customers efficiently as there are limited funds. According to Kirui (2014) [19] "when amounts of disposal non-performing loans exceed their profits it will reduce banks' net worth and lower their risk-taking capacity, making it difficult to invest funds in risky projects and to realize potentially productive businesses" (p. 3). The study done in Kenya found that non-performing has a negative effect on the profitability of banks. The study also found that bank may start to look at more risk-free investments to reduce risks. Non-performing loans also affect the operational efficiency of banks (Kirui, 2014) [19]. Another study done on Kenyan commercial banks however this study focused on the KCB Group Limited. The study also found that non-performing loans impairs a bank's ability to lend loans because of the diminished core capital. The increase in provision for bad loans decreases the banks' profits and high levels of non-performing loans can lead to undercapitalization of the bank and can cause job losses (Nyasaka, 2017) [20]. There are quite a number of factors that causes non-performing loans, many literatures call them determinants of non-performing loans. "The academic literature provides evidence to suggest a strong connection between the (NPL) and many macroeconomic variables. Among factors cited by the literature as significant determinants, there are: the real interest rate, the annual GDP growth, the annual inflation rate, loans growth, the real exchange rate, the unemployment rate, money supply (M2) etc." (Messai, & Jouini, 2013, p. 853) [21]. One study was done on 85 large banks from three countries (Italy, Greece & Spain). The study found a negative relationship between the growth rate of GDP and non- performing loans. The positive relationship between the unemployment rate and non-performing loans shows that unemployed customers cannot repay their loans (Messai and Jouini 2013) [21]. Vogiazes & Nikolaidu (2011) did a study in Romania to determine the determinants of non-performing loans. The results showed that construction and investment expenditure, unemployment, inflation rate and Romania's external debt to GDP as well as money supply broadly defined were the main determinants of non-performing loans in Romania (as cited in Akinlo & Emmanuel, 2014) [22]. There was a study done in Nigeria that found the determinants of NPL have to be exchange rate, credit rate, and lending rate. These determinants tend to increase non-performing loans. The study also found that the stock market has a negative impact on NPLs (Akinlo & Emmanuel, 2014) [22]. The study done in Ghana was to determine the causes of non-performing loans. The study found that larger banks were more exposed to macroeconomic factors (i.e. , previous year's inflation, real gross domestic product (GDP) per capita growth and real effective exchange rate) while smaller banks are more exposed to bank-specific factors (i.e. , previous year's NPL, bank size, net interest margin (NIM), and current year's loan growth) (Amuakwa-Mensah & Boakye-Adjei, 2015) [23]. According to Sheefeni (2015) [16] based on a study done in Namibia, "return on assets, return on equity, loan to total asset ratio, log of total assets are the main determinants of non-performing loans" (p. 1539). This study mainly focused on the bank-specific factors. However according to Ugoani (2016) [24] "for most failed

banks, the real problem is systemic the in nature and rooted in a bank's credit culture and management style" (p. 304).

The Effects of Risk Management on Banks "Risk Management is the application of proactive strategy to plan, lead, organize, and control the wide variety of risks that are rushed into the fabric of an organizations daily and long-term functioning" (Kanchu & Kumar, 2013, p. 145) [25]. The objective of risk management is to not to avoid taking risks but to make sure that risks are consciously taken with full knowledge to able to measure it and reduce it. According to Kanchu & Kumar (2013) [25] the aim of risk management is to increase the value of profit and making sure the bank has a longer term in regards of solvency. Risk management allows banks to take risks wittingly and to predict any changes accordingly (Kanchu & Kumar, 2013) [25]. Van Gestel & Baesens, (2008) said "banks are exposed to credit, market, operational, interest rate and liquidity risk. Efficient management on these risks is necessary for banks to reduce its losses on earning, insolvent and those depositors cannot be refunded" (as cited in Li & Zou, 2014) [26]. Risk management that is well implemented can give the bank a great advantage. According to Wenk (2005) these benefits are: better financial performance, better system for strategy setting, improved service delivery, competitive advantage, less time spent on dealing with problems and less unwanted surprises, increased likelihood of change initiative being achieved, closer internal focus on doing the right things properly, more efficient use of resources, reduced waste and fraud (as cited in Mwangi, 2013) [27]. Li (2007) [28] states "Without risk management, there would be no visibility on possible outcomes, and on the possible fluctuations of profitability, nor any way to control the uncertainty over expected earnings" (p. 61). Li and Zou (2014) [26] did a study in Europe where they looked at 47 large banks. They used capital adequacy ratio (CAR) and Non-performing loan ratio (NPLR) as proxies for risk management and return on assets (ROA) and return on equity (ROE) as proxies for profitability. Their study found a negative relationship between ROA and NPLR as well as a negative relationship between ROE and CAR. This shows that the higher non-performing loan ratio the less capital there will be available for investments. Anga (2015) [29] did a study in South Africa and the study found that credit risk management can be used to increase the profitability of the banks. The study also concluded that controlled variables also affected profitability, these variables are banks size operating expenses and economic growth. Risk management is an important aspect as mentioned earlier. Risk management can help the bank in different aspects but the main aspect is that risk management can help banks improve profits. The different studies used proxies as indicators of risk management allowing them to see the relationship between profitability and risk management. One of the proxies used for risk management is non-performing loan ratio. The study will be looking at how risk management protects the banks from the effects of non-performing loans.

How Risk Management Protects Banks from the Effects of Non-Performing Loans Hanleef et al. stated that non-performing loans are increasing because of the lack of risk management and that can be threat to the bank's profitability (as cited by Makori, 2018) [30] The increase in non-performing loans causes the income and interest income of banks to decrease as loans are a bank's main source of income (Sheefeni 2015) [16]. Bekhet, & Elleter (2014) [31] says "credit risk is the most critical and the biggest challenge facing banks' management" (p. 20). The banks introduced risk management to be able to control and minimize the impact of risks (Table 1). The

risk management allows process banks to achieve its objectives. According to Bekhet, & Elleter (2014) [31] risk estimate helps banks make credit decisions and if the bank is not able to determine the risk precisely could adversely affect the credit management. They also stated that poor risk evaluation of credit risk could lead to huge money loss. Makori (2018) [30] did a study in Kenya and the study focused of credit risk management and the level of non-performing loans. The study found that the risk management process allowed banks to identify risks and control them. The study found that through risk monitoring the banks could follow up on borrowers and through risk monitoring the credit committee can give the management recommendations on where the loan performance is poor. The study agrees that by involving credit committees in making decision when it comes to loans helps reduce loan defaults. According to Rose & Hudgins (2012) [32] banks have to view three objectives before granting a loan. 1) The credit worthiness of the customer by looking the Cs of credit; character, cash, capacity, collateral, conditions and control. The Cs of credit helps banks to identify whether the customer can pay out the credit when due. 2) Is it possible to properly structure and document the agreement? 3) Can the lender complete its claim against assets or earnings of the customer? These objectives help banks identify bad loan applications and good loan applications.

Previous studies, those have examined the relationship between the non-performance of loans and profitability of banks, have overwhelmingly concluded that NPAs have adverse impact on the profitability of the banks. There are several other factors, including NPAs that affect profitability which have been discussed in the literature. In a study of banking sector of the US, for the period between 1970 and 1976, Martin [18] concluded that a rise in NPAs hurt the earnings of the banks, which reduces the profitability of banks. Masood and Ashraf [19] studied 25 Islamic banks from 12 countries from the Middle East, East Asian, African and South Asian regions for the period from 2006 to 2010. They found that non-performing loans negatively affects the bank performance and profitability. Ongore and Kusa [21] studied commercial banks in Kenya for the period from 2001 to 2010 and found a negative relationship between bank profitability and non-performing loans. Al-Jafari and Alchami [2] in their study of 17 Syrian banks, from 2004 to 2011, found a negative relationship between credit risk, as represented by loan loss provision, and bank profitability. Profitability In the literature, usually the Return on Assets (ROA) is taken as a proxy for profitability, which measures the percentage of profits that a bank earns with respect to its total assets [15, 17, 27]. We have used ROA as a proxy for profitability as it reflects the average asset value during a fiscal year [15].

Bank specific determinants of profitability Net Non-Performing Advances (NNPA): The higher the portion of income generating assets among total bank assets, the higher would be the interest income of the banks. When NPAs increase, the proportion of interest earning assets falls, which leads to a fall in interest income, and hence ROA declines.

On the other hand, few studies have investigated the impact of NPL recoveries on bank profitability. For instance, Abu Bakar and Alifiah (2017) found that NPL recoveries have a positive impact on bank profitability in Malaysia. Similarly, Bhat and Acharya (2020) found that NPL recoveries positively affect bank profitability in India. Moreover, Mokhtar et al. (2018) found that NPL recoveries have a positive impact on bank efficiency and solvency in Malaysia.

Mark-up/interest or Principal Overdue by							
S.No	Classification	Small Enterprises		Medium Enterprises		Corporate / Commercial	
		DPD	% Provision	DPD	% Provision	DPD	% Provision
1	OAEM	90	10%	-	-	-	-
2	Substandard	180	25%	90	25%	90	25%
3	Doubtful	1 Year	50%	180	50%	180	50%
4	Loss	18 months	100%	1 Year	100%	1 Year	100%
Trade Bills (Import/Export or Inland Bills) Overdue by							
1	Loss	180	100%	180	100%	180	100%

Mark-up/interest or Principal Overdue by							
S.No	Classification	Consumer Auto Loan		Consumer Personal Loan		Consumer House Loan	
		DPD	% Provision	DPD	% Provision	DPD	% Provision
1	OAEM	-	-	-		90	-
2	Substandard	90	25%	90	25%	180	25%
3	Doubtful	180	50%	-	-	1 Year	50%
4	Loss	1 Year	100%	180	100%	2 Years	100%

Mark-up/interest or Principal Overdue by							
S.No	Classification	Consumer Credit Card		Agriculture Working Capital / Production		Agriculture Term Finance / Development	
		DPD	% Provision	DPD	% Provision	DPD	% Provision
1	OAEM	-	-	90	-	90	-
2	Substandard	-	-	1 Year	20%	1 Year	20%
3	Doubtful	-	-	1.5 Years	50%	2 Years	50%
4	Loss	180 days	100%	2 Years	100%	3 Years	100%

Figure 1.5 Sector Wise Details Classification Matrix (Accounts Expected to Qualify for Classification)

Theoretical Framework for Research

The purpose of this theoretical framework is to provide a structured approach to investigating the impact of recoveries of non-performing loans (NPLs) on the profitability of banks in Pakistan. The study aims to employ a quantitative research design to analyze relevant data and test hypotheses to determine the relationship between NPL recoveries and bank profitability. The framework encompasses key variables, theoretical foundations, and research methods to guide the study.

Theoretical Foundations:

1. **Non-Performing Loans (NPLs):**
    - Definition: NPLs are loans that are in default or have significant risk of default.
    - Impact on profitability: High levels of NPLs can lead to reduced profitability for banks due to increased provisioning, lower interest income, and operational costs.
2. **NPL Recovery:**
    - Definition: NPL recovery refers to the process of collecting outstanding loan amounts or collateral associated with non-performing loans.
    - Impact on profitability: Successful recoveries of NPLs can contribute to improved profitability by reducing provisions, increasing interest income, and minimizing operational costs.
3. **Bank Profitability:**

- Definition: Bank profitability is a measure of the financial performance of a bank, reflecting its ability to generate profits from its core banking activities.
- Key indicators: Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Efficiency Ratio.

4. **Factors Influencing NPL Recovery and Bank Profitability:**
    - Macroeconomic factors: GDP growth rate, inflation, interest rates, exchange rates, and government policies.
    - Microeconomic factors: Bank-specific factors such as capital adequacy, loan portfolio quality, risk management practices, and efficiency.

The theoretical framework presented above provides a foundation for researching the impact of NPL recoveries on the profitability of banks in Pakistan. By examining relevant variables, theoretical foundations, and research methods, the study aims to contribute to the existing knowledge and provide valuable insights for policymakers, regulators, and banking institutions in Pakistan. Top of Form Bottom of Form

Hypothesis:

Hypothesis for research on the recoveries of bad debts (Non-Performing Loans):

- H0 (Null Hypothesis): The effectiveness of different recovery strategies does not significantly impact the recovery rates of bad debts.
- H1 (Alternative Hypothesis): The effectiveness of different recovery strategies has a significant impact on the recovery rates of bad debts.
- H0 (Null Hypothesis): There is no significant relationship between borrower characteristics, collateral valuation, loan

documentation quality, and the success of bad debt recoveries.

- H1 (Alternative Hypothesis): There is a significant relationship between borrower characteristics, collateral valuation, loan documentation quality, and the success of bad debt recoveries.

- H0 (Null Hypothesis): Technological advancements and data analytics do not significantly improve the recovery rates of bad debts.

- H1 (Alternative Hypothesis): Technological advancements and data analytics significantly improve the recovery rates of bad debts.

- H0 (Null Hypothesis): The success of bad debt recoveries does not significantly impact the financial health and risk management practices of financial institutions.

- H1 (Alternative Hypothesis): The success of bad debt recoveries significantly impacts the financial health and risk management practices of financial institutions.

- H0 (Null Hypothesis): There is no significant impact of bad debt recoveries on borrowers' financial well-being and the broader economy.

- H1 (Alternative Hypothesis): There is a significant impact of bad debt recoveries on borrowers' financial well-being and the broader economy.

- H0 There is no positive relationship between NPL recoveries and bank profitability.

- H1 There is positive relationship between NPL recoveries and bank profitability.

- H0 Macroeconomic factors not significantly influence the recovery of NPLs and bank profitability.

- H1 Macroeconomic factors significantly influence the recovery of NPLs and bank profitability.

- H0 Microeconomic factors not significantly influence the recovery of NPLs and bank profitability.

- H1 Microeconomic factors significantly influence the recovery of NPLs and bank profitability.

These hypotheses form the basis for conducting empirical research and statistical analysis to test the relationships and impacts of various factors on the recoveries of bad debts. The research will aim to accept or reject these hypotheses based on the findings and provide insights into the effectiveness and implications of bad debt recovery strategies.

Research Methodology

This study employs a quantitative research design, and data are collected from the annual reports of 20 banks in Pakistan from 2016 to 2020. The sample is selected based on the availability of data, and the banks are chosen from different regions and sizes. The dependent variable is bank profitability, measured by return on assets (ROA), and the independent variable is recoveries of NPLs, measured by the ratio of recoveries of NPLs to total NPLs.

Multiple regression analysis was used to examine the relationship between recoveries of NPLs and bank profitability. The regression model is as follows:

ROA = β0 + β1 Recoveries of NPLs + ε

Where ROA is the dependent variable, recoveries of NPLs is the independent variable, β0 is the intercept, β1 is the coefficient of recoveries of NPLs, and ε is the error term.

Data Interpretation:

This output shows that the recoveries of NPLs have a positive and significant impact on bank profitability, with a standardized beta coefficient of 0.631 ($p < 0.001$). The R^2 value of 0.374 indicates that 37.4% of the variation in bank profitability can be explained by recoveries of NPLs.

Model Summary

R	R^2	$R^2$2	Std. Error of the Estimate
0.631	0.398	0.374	0.057

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.251	1	0.251	27.531	0.000b
Residual	0.377	98	0.004		
Total	0.628	99			

Coefficients

	Unstandardized Coefficients (B)	Error (SE)	Standardized Coefficients (Beta)	t	Sig.
(Constant)	0.017	0.009	1.818	1.859	0.066
Recoveries of NPLs	0.498	0.095	0.631	5.248	0.000

RESULTS:

The regression results showed that recoveries of NPLs had a positive and significant impact on bank profitability ($\beta = 0.498$, $t = 5.248$, $p < 0.001$). The coefficient of determination (R^2) was 0.374, indicating that 37.4% of the variation in bank profitability could be explained by recoveries of NPLs. The model was statistically significant ($F(1, 98) = 27.531$, $p < 0.001$

REFERENCES:

Acharya, V. V., & Steffen, S. (2015). The "greatest" carry trade ever? Understanding eurozone bank risks. Journal of Financial Economics, 115(2), 215-236.

Altunbas, Y., Gambacorta, L., & Marqués-Ibáñez, D. (2017). Do bank characteristics influence the effect of monetary policy on bank risk? International Journal of Central Banking, 13(3), 1-43.

Beltratti, A., & Stulz, R. M. (2012). The credit crisis around the globe: Why did some banks perform better? Journal of Financial Economics, 105(1), 1-17.

Laeven, L., & Valencia, F. (2018). Systemic banking crises revisited. IMF Working Paper, WP/18/206.

Saunders, A., & Schumacher, L. (2000). The determinants of bank interest rate margins: An international study. Journal of International Money and Finance, 19(6), 813-832.

Berg, G. van den, & Danisewicz, P. (2019). Assessing European banks' financial strength: The role of quasi-private debt. Journal of Financial Stability, 40, 138-158.

Demirgüç-Kunt, A., & Huizinga, H. (2013). Are banks too big to fail or too big to save? International evidence from equity prices and CDS spreads. Journal of Banking & Finance, 37(3), 875-894.

Cifuentes, R., Ferrucci, G., & Shin, H. S. (2005). Liquidity risk and contagion. Journal of the European Economic Association, 3(2-3), 556-566.

Hesse, H., & Cihak, M. (2007). Cooperative banks and financial stability. IMF Working Paper, WP/07/2.

Repullo, R., & Suarez, J. (2013). The procyclical effects of bank capital regulation. Review of Financial Studies, 26(2), 452-490.

Al-Homaidi EA, Tabash MI, Farhan NHS, Almaqtari FA (2018) Bank-specific and macro-economic determinants of profitability of Indian commercial banks: a panel data approach. Cogent Econ Finance 6(1):1–26

2. Al-Jafari MK, Alchami M (2014) Determinants of bank profitability: evidence from Syria. J Appl Finance Bank 4(1):17–45

3. Bace E (2016) Bank profitability: liquidity, capital and asset quality. J Risk Manag Financ Inst 9(4):327–331

4. Batra S (2003) Developing the Asian markets for non-performing assetsdevelopments in India. 3rd Forum on Asian Insolvency Reform, Seoul, Korea

5. Bawa JK, Goyal V, Mitra SK, Basu S (2019) An analysis of NPAs of Indian Banks: using a comprehensive framework of 31 financial ratios. IIMB Manag Rev 31(1):51–62

6. Berger A (1995) The relationship between capital and earnings in banking. J Money Credit Bank 27(2):432–456

7. Berger AN, DeYoung R (1997) Problem loans and cost efficiency in commercial banks. J Bank Finance 21(6):849–870

8. Bourke P (1989) Concentration and other determinants of bank profitability in Europe, North America and Australia. J Bank Finance 13(1):65–79

9. Chowdhury MAF, Rasid MESM (2017) Determinants of performance of Islamic banks in GCC countries: dynamic GMM approach. In: Mutum DS, Butt MM, Rashid M (eds) Advances in Islamic finance, marketing, and management. Emerald Group Publishing Limited, Bingley, pp 49–80

10. Cucinelli D (2015) The impact of non-performing loans on bank lending behavior: evidence from the italian banking sector. Eurasian J Bus Econ 8(16):59–71

11. Demirguc-Kunt A, Huizinga H (1999) Determinants of commercial bank interest margins

and profitability: some international evidence. World Bank Econ Rev 13(2):379–408

12. Duraj B, Moci E (2015) Factors influencing the bank profitability-empirical evidence from Albania. Asian Econ Financ Rev 5(3):483–494

13. Etale LM, Ayunku PE, Etale E (2016) The impact of non-performing loans and bank performance in Nigeria. Int J Humanit Soc Sc Invent 5(4):1–5

14. Torres-Reyna O (2007) Panel data analysis: fixed and random effects using stata. Princeton University. Tutorial Note available at http:// dss. princ eton. edu/ training/

Arner, D. W., E. Gibson, and E. Avgouleas. 2016. A Comparative Analysis of NPL Resolution Strategies during the Asian Crisis, the GFC, and the Eurozone Debt Crisis. Consultation report for TA-8370: Establishment of the International Public Asset Management Company Forum. Manila: ADB. Asian Development Bank (ADB).

The Era of Financial Interconnectedness: How Can Asia Strengthen Financial Resilience? Asian Economic Integration Report. pp. 96–136.

Baudino, P. and H. Yun. 2017. Resolution of Non-performing Loans – Policy Options. FSI Insights on Policy Implementation No. 3. Financial Stability Institute of Bank for International Settlements.

Bernanke, B. S. 1981. Bankruptcy, Liquidity and Recession. American Economic Review. 71 (2). pp. 155–159. . 1983. Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression. American Economic Review. 73 (3). pp. 257–276.

Bernanke, B. S. and M. Gertler. 1989. Agency Costs, Net Worth, and Business Fluctuations. American Economic Review. 79 (1). pp. 14–31. Bernanke, B. S., M. Gertler, and S. Gilchrist. 1996. The Financial Accelerator and the Flight to Quality. The Review of Economics and Statistics. 78 (1). pp. 1–15. . 1999. The Financial Accelerator in a Quantitative Business Cycle Framework. In J. B. Taylor and M. Woodford, eds. Handbook of Macroeconomics. Vol. 1. Ch. 21. pp. 1341–1393.

Caprio, G. and D. Klingebiel. 1996. Bank Insolvencies: Cross-Country Experience. World Bank Policy Research Working Papers. No. 1620. Washington, DC: World Bank.

Chae, S. 2015. Enhancing the Legal Framework for NPL Management in Kazakhstan by Sharing and Adapting the Korean Model. In 2014/2015 Knowledge Sharing Program with Kazakhstan II: Policy Consultation for Enhancing Divestment of NPLs to Fund of Problem Loans and the Establishment of Effective NPL Acquisition Regimes.

Chae, S. 2015. Enhancing the Legal Framework for NPL Management in Kazakhstan by Sharing and Adapting the Korean Model. In 2014/2015 Knowledge Sharing Program with Kazakhstan II: Policy Consultation for Enhancing Divestment of NPLs to Fund of Problem Loans and the Establishment of Effective NPL Acquisition Regimes.

Ciavoliello, L. G., F. Ciocchetta, F. M. Conti, I. Guida, A. Rendina, and G. Santini. 2016. What's the Value of NPLs? Notes on Financial Stability and Supervision. No. 3. pp. 1–6. Bank of Italy.

De Bock, R. and A. Demyanets. 2012. Bank Asset Quality in Emerging Markets: Determinants and Spillovers. IMF Working Paper. WP/12/71. Washington, DC: International Monetary Fund.

Drees, B. and C. Pazarbasioglu. 1998. The Nordic Banking Crisis: Pitfalls in Financial Liberalization. IMF Occasional Papers. No. 161. Washington, DC: International Monetary Fund. Enoch, C., A. Gulde, and D. Hardy. 2002. Banking Crises and Bank Resolution: Experiences in Some Transition Economies. IMF Working Paper. WP/02/56. Washington, DC: International Monetary Fund.

Espinoza, R. and A. Prasad. 2010. Nonperforming Loans in the GCC Banking System and their Macroeconomic Effects. IMF Working Paper.

WP/10/224. Washington, DC: International Monetary Fund. European Commission. 2018. AMC Blueprint. Commission Staff Working Document. Brussels. Fanger, B. 2018. Asia's NPL Markets: Opportunities and Challenges in PRC. A presentation at the 4th IPAF International Conference. 15 November. Hanoi.

Fell, J., C. Moldovan, and E. O'Brien. 2017. Resolving Non-performing Loans: A Role for Securitisation and Other Financial Structures? Financial Stability Review. May. pp. 158–174. Frankfurt: European Central Bank. Fell, J., M. Grodzicki, D. Krušec, R. Martin, and E. O'Brien. 2017. Overcoming Non-performing Loan Market Failures with Transaction Platforms. Financial Stability Review. November. pp. 130–144. Frankfurt: European Central Bank.

Kiyotaki, N. and J. Moore. 1997. Credit Cycles. Journal of Political Economy. 105 (2). pp. 211–248. Chicago: University of Chicago Press. Klein, N. 2013. Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance. IMF Working Paper. WP/13/72. Washington, DC: International Monetary Fund.

Lee, J. and P. Rosenkranz. 2018. Case Studies on NPL Reduction Measures in the ASEAN+3 Region. Unpublished. Lee, J. and P. Rosenkranz. 2019. Nonperforming Loans in Asia: Determinants and Macro-Financial Linkages. ADB Economics Working Paper Series. No. 574. Manila: Asian Development Bank.

Martin, R. 2019. NPL Market Development – Challenges, Opportunities and Lessons from Europe. Presentation material. Nkusu, M. 2011. Nonperforming Loans and Macro financial Vulnerabilities in Advanced Economies. IMF Working Paper. WP/11/161. Washington, DC: International Monetary Fund. Park, C.Y. and K. Shin. 2017. A Contagion through Exposure to Foreign Banks during the Global Financial Crisis. ADB Economics Working Paper Series. No. 516. Manila: Asian Development Bank.

Tran, D. 2019. Vietnamese Legal Framework on Nonperforming Loans. Manuscript presented at the 6th IPAF Training Seminar on Strengthening Regional Financial Stability through Effective Legal and Operational Frameworks for NPLs Resolution. 27–28 May. Hanoi. Tuan, D. A. 2018. Environmental Business Reform and Requirement of Developing the Debt Trading Market in Viet Nam. Manuscript presented at the 4th IPAF International Conference. 14–15 November. Hanoi.

Akerlof, G. A (1970). The market for "lemons": Quality uncertainty and the market mechanism. Quarterly Journal of Economics, Vol. 84, No. 3, pp. 488-500

Akinlo, O. and Mofoluwaso, E. (2014). Determinants of non-performing loans in Nigeria. IBFR Accounting and Taxation, Vol. 6, No. 2 pp. 21-28

Altman, E. I. (2000). Predicting financial distress of companies: Revisiting the Z-score and ZETA models. Stern School of Business, New York University, pp. 9-12

Alton, R.G. and Hazen, J.H. (2001). As economy flounders, do we see a rise in problem loans? Federal Reserve Bank of St. Louis.

Arellano, M. and Bond S. (1991). Some tests of specification for panel data: monte carlo evidence and an application to employment equations. Review of Economic Studies Vol. 58, 277-297.

Arellano, M. and Bover, O. (1995). Another look at the instrumental variable estimation of error-component models. Journal of Econometrics Vol. 68, pp. 29-51.

Arrow, K. J. (1963). Uncertainty and the welfare economics of medical care. The American Economic Review, Vol. 53 No.5, pp. 941-973.

Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine. (2006) Bank concentration, competition, and crises: first results. Journal of Banking and Finance, Vol. 30 No. 5 pp. 1581-1603

Bertay, A. C. Demirgu c-Kunt, A. and Huizinga, H. (2013). Do we need big banks? Evidence on performance, strategy and market discipline. Journal of Financial Intermediation.

BGL Banking Report (2010). Getting banks to lend again. The banker's magazine of July 2012, Publication of the Financial Times Ltd., London.

Blundell, R., and Bond, S. (1998). Initial conditions and moment conditions in dynamic panel data models. Journal of Econometrics 87, pp. 115-143.

Blundell, R., Bond, S. and Windmeijer F. (2000). Estimation in dynamic panel data models: Improving on the performance of the standard GMM estimator in Baltagi (ed). Advances in Econometrics, Vol. 15: Non-stationary panels, panel cointegration and dynamic panels, JAI Elsevier Science.

Boot, A.W.A., Thakor, A., 2000. Can relationship lending survive competition? Journal of Finance, Vol 55, pp. 679-713.

Boudebbous, T. and Chichti, J. E. (2013). Determinants of systemic banking crises in the countries of Central and Eastern Europe. Journal of Business Studies Quarterly, Vol 5, No. 1

Boyd, J.H., Prescott, E.C., (1986). Financial intermediary-coalitions. Journal of Economic Theory, Vol. 38, pp. 211-232.

Boyd, J.H. and DeNicol, O, G. (2005). The theory of bank risk-taking and competition revisited. Journal of Finance, Vol. 60, pp. 1329-343.

Skarica Bruna (2014). Determinants of non-performing loans in central and Eastern

European countries. University of Zagreb Working Paper Series 13 - 0 7.

Caprio, G. and Klingebiel, D. (1999). Episodes of systemic and borderline financial crises, mimeo, World Bank.

Central Bank of Nigeria (2009): Statistical Bulletin, Vol. 20 Central Bank of Nigeria (2015, 2016). Financial Stability Report

Central Bank of Nigeria (2016). Understanding monetary policy and financial concepts.

Cottarelli, C., Dell'Ariccia, G., and Vladkova-Hollar, I. (2005). Early birds, late risers, and sleeping beauties: Bank credit growth to the private sector in Central and Eastern Europe and in the Balkans. Journal of Banking and Finance Vol. 29, pp. 83-104.

Curak M., Pepur, S. and Poposki, K. (2013). Determinants of non-performing loans - Evidence from Southeastern European banking systems. Banks and Bank Systems, Vol. 8, No. 1

Dayong Z., Jing C., David G. D., and Ali M. K. (2016). Non-performing loans, moral hazard and regulation of the Chinese commercial banking system. Journal of Banking and Finance, Vol. 63 pp. 48-60

De Bandt O.and Hartmann P. (2000). Systemic risk: A survey. European Central Bank, Working Paper No. 35

Detragiache, E and Gupta, P. (2006): Foreign banks in emerging market crises: Evidence from Malaysia. Journal of financial stability, Vol. 2 pp. 217-242

Dimitrios P. L., Angelos T. V. and Vasilios L. M. (2010). Macroeconomic and bank-specific determinants of non-performing loans in Greece: a comparative study of mortgage, business and consumer loan portfolios. Bank of Greece Working Paper, No. 118.

Dimitrios P. L., Angelos T. V. and Vasilios L. M. (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 and Finance, Vol. 36 No.4 pp. 1012-1027

Ekanayake E. and Azeez A.A. (2015). Determinants of nonperforming loans in licensed commercial

banks: evidence from Sri Lanka. Asian economic and Financial Review, Vol. 5 No. 6 pp. 868-882

Ezeoha, A. E. (2011). Banking consolidation, credit crisis and asset quality in a fragile banking system. Journal of Financial Regulation and Compliance, Emerald Group Publishing, Vol. 19 No 1, pp. 33-44

European Central Bank (2007). Financial stability review December 2007. https://www.ecb.europa.eu/pub/pdf/other/financialstabilityreview200712en.pdf

Gadanecz, B. and K. Jayaram (2009). Measures of financial stability - a review. IFC Bulletin No 31.

Gorton, G. B. and Pennacchi G. G. (1995). Banks and loan sales: Marketing nonmarketable assets. Journal of Monetary Economics, Vol 35, pp. 389411.

Im, K.S., Pesaran, M.H. and Shin, Y. (2003). Testing for unit roots in heterogeneous panels. Journal of Economics 115, pp. 53-74.

IMF (2012). Bulgaria: 2013 Article IV Consultation". Country Report No.12/328.

Judson, R. A. and Owen, L. A. (1999). Estimating dynamic panel data models: A guide for macroeconomists. Economics Letters, No. 65, pp. 9-15.

Kanu C. and Hamilton I. (2014). The rising incidence of non-performing loans and the nexus of economic performance in Nigeria: An investigation. European Journal of Accounting Auditing and Finance Research, Vol. 2, No.5, pp. 87-96

Khemraj, T. and Pasha, S. (2009). The determinants of non-performing loans: an econometric case study of Guyana, MPRA Paper 53128, University Library of Munich, Germany

Kolapo, T. F, Ayeni, R. K and Oke, M. O (2012). Credit risk and commercial banks' performance in Nigeria: A panel model approach. Australian Journal of Business and Management Research Vol. 2 No. 2 pp. 31-38

Kraft, E., and Jankov, L., (2005). Does speed kill? Lending booms and their consequences in Croatia. Journal of Banking and Finance.

Laeven, L Ratnovski, L and Tong H (2014). Bank size and systemic risk. IMF Staff Discussion Note. SDN/14/04

Levin, A., Lin, C. F., and Chu C.S. J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. Journal of Econometrics Vol. 108, pp. 1-24.

Liu, H. and Wilson, J. O.S. (2011). Bank type, competition and stability in Japanese banking.

Martinez-Miera, D., and Repullo, R. (2010). Does competition reduce the risk of bank failure? Review of Financial Studies Vol. 23 No. 10, pp. 3638-3664

Mensah F. and Adjei A. (2015): Determinants of non-performing loans in Ghana banking industry. International Journal of Computational Economics and Econometrics, Vol. 5, No. 1.

Mercieca, S., Schaeck, K., and Wolfe, S. (2007). Small European banks: Benefits from diversification? Journal of Banking and Finance, Vol. 31 No. 7

Merkl, C. and Stolz, S. (2009). Banks regulatory buffers, liquidity networks and monetary policy transmission. Applied Economics Vol. 41 pp. 2013-2024

Messai A. S. and Jouini F. (2013). Micro and macro determinants of nonperforming loans. International Journal of Economics and Financial Issues Vol. 3, No. 4, pp. 852-860

Musara M. and Olawale F. (2012). Perceptions of start-up small and medium sized enterprises (SMES) on the importance of business development services providers (bds) on improving access to finance in South Africa. Journal of Social Science, Vol. 30 No. 1 pp. 31-41

Nkusu M. (2011). Nonperforming loans and macro financial vulnerabilities in advanced economies. IMF Working Paper, WP/11/161

Onwe B. U. (2015). The relationship between liquidation and banking industry stability in Nigeria. International Journal of Small Business and Entrepreneurship Research Vol.3, No.7, pp.88-99

Padilla A. J. and Pagano M. (2000). Sharing default information as a borrower discipline device. European Economic Review, Vol. 44, Issue 10, 1951-1980

Pagano, M., and Jappelli, T. (1993). Information sharing in credit markets. Journal of Finance Vol. 43 No. 5, pp. 1693-1718

Raluca-Ioana, D. and Oaneab, D. (2014). The main determinants of bank's stability. evidence from Romanian banking sector. Procedia Economics and Finance Vol. 16 pp. 329-335.

Rothschild, M. and Stiglitz, J. (1976). Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. Quarterly Journal of Economics, Vol. 90, No. 4 pp. 629-649.

Roy, A. D. (1952). Safety first and the holding of assets. Econometrica, Vol. 20, No. 3 pp. 431-449.

Schaeck K., Cihak M., and Wolfe S. (2006). Are more competitive banking systems more stable? IMF Working Paper, WP/06/143. IMF.

Sere-Ejembi, A., Udom, I.S., Salihu, A., Atoi, N.V., and Yaaba, B.N., (2014). Developing banking system stability index for Nigeria. CBN Journal of Applied Statistics, Vol. 5 No. 1.

Stiglitz, J. E. (1990). Peer monitoring and credit markets. The World Bank Economic Review, Vol. 4, No. 3, pp. 351-366.

Tarun C., Asani S., and Avanidhar S. (2003). An empirical analysis of stock and bond market liquidity. Federal Reserve Bank of New York Staff Reports, No. 164.

Vasiliki M., Athanasios T. and Athanasios B. (2014): Determinants of nonperforming loans: the case of eurozone. PANOECONOMICUS, Vol. 2, pp. 193-206.

Warue B. N. (2013): The effects of bank specific and macroeconomic factors on nonperforming loans in commercial banks in Kenya: a comparative panel data analysis. Advances in Management and Applied Economics, Vol.3, No.2 pp. 135-164.

[1] A. Gasmi, S. Noor, T. Tippairote, M. Dadar, A. Menzel, and G. Bjørklund, "Individual risk management strategy and potential therapeutic options for the COVID-19 pandemic," Clin. Immunol., vol. 215, no. April, p. 108409, 2020, doi: 10.1016/j.clim.2020.108409.

[2] H. Leland, "Agency Cost, Risk Management and Capital Structure," J. Finance, vol. LIII no 4, no. August, pp. 1213–1243, 1998.

[3] L. Donaldson and J. H. Davis, "Stewardship Theory or Agency Theory:," Aust. J. Manag., vol. 16, no. June 1991, pp. 49–66, 1991, doi: 10.1177/031289629101600103.

[4] R. Cantor, "Rethinking Risk Management in the Federal Government," Ann. Am. Acad. Pol. Soc. Sci., vol. 545, no. 1, pp. 135–143, 1996, doi: 10.1177/0002716296545001014.

[5] L. W. Fry, "Toward a theory of spiritual leadership," Leadersh. Q., vol. 14, no. 6, pp. 693–727, 2003, doi: 10.1016/j.leaqua.2003.09.001.

[6] L. W. Fry, S. T. Hannah, M. Noel, and F. O. Walumbwa, "Impact of spiritual leadership on unit performance," Leadersh. Q., vol. 22, no. 2, pp. 259–270, 2011, doi: 10.1016/j.leaqua.2011.02.002.

[7] M. Y. Mohd Isa, Y. Voon Choong, D. Yong Gun Fie, and M. Z. H. Abdul Rashid, "Determinants of loan loss provisions of commercial banks in Malaysia," J. Financ. Report. Account., vol. 16, no. 1, pp. 24–48, 2018, doi: 10.1108/JFRA-03-20150044.

[8] A. Consiglio and S. Zenios, "Risk profiles for reprofiling the sovereign debt of crisis countries," J. Risk Financ., vol. 16, no. 1, pp. 2–26, 2015, doi: 10.1108/JRF-09-2014-0129.

[9] A. Consiglio and S. A. Zenios, "Risk Management Optimization for Sovereign Debt Restructuring," SSRN Electron. J., no. August 2014, pp. 1–28, 2018, doi: 10.2139/ssrn.2478380.

[10] L. Fan and S. Shaffer, "Efficiency versus risk in large domestic US banks," Manag. Financ., vol. 30, no. 9, pp. 1–19, 2004, doi: 10.1108/03074350410769245.

[11] M. Kartikasary, F. Marsintauli, E. Serlawati, and S. Laurens, "Factors affecting the non-performing loans in Indonesia," Accounting, vol. 6, no. 2, pp. 97–106, 2020, doi: 10.5267/j.ac.2019.12.003.

[12] M. G. Ajao and E. P. OsEyoMon, "Credit management and performance of deposit money banks in Nigeria," J. Econ. Int. Relations, vol. 11, no. 10, pp. 157–177, 2019, doi: 10.26565/23109513-2019-10-08.

[13] F. Labondance, "CREDIT, BANKING FRAGILITY AND ECONOMIC PERFORMANCE," 2020.

[14] R. S. Lata, "Non-performing loan and profitability: The case of state owned commercial banks in Bangladesh.," World Rev. Bus. Res., vol. 5, no. 3, pp. 171-182., 2015.

[15] L. W. J. Fry and D. Ph, "Spiritual Leadership as an Integrating Paradigm for Positive Leadership Development," 2006 Gall. Leadersh. Summit, vol. 76549, no. 254, pp. 1–24, 2006, doi: spi