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"ANALYSING THE DYNAMICS OF NON-PERFORMING LOANS: NEW TOOLS AND TRADITIONAL APPROACHES"

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INTRODUCTION

Stable banking is essential for both sustainable economic development and financial stability as well as for the overall welfare of a nation. Under this complex framework, banks all over have great challenges in managing non-performing loans (NPLs). NPLs, loans in near or default stage, are among the most often occurring and significant risks to financial institutions and the bigger economy. High NPLs can degrade banks' balance sheets, undermine their profitability, and affect their capability to supply new credit, therefore restricting overall economic growth. Moreover contributing to systemic risk are NPLs, which accentuate flaws in times of economic crisis and could initiate more widespread financial crises.

Therefore, knowledge of the dynamics of NPLs is essential for financial authorities, legislators, and bankers as only a thorough awareness of these dynamics can lead to development of efficient management and mitigating solutions. The present work attempts to investigate throughout time the trends, causes, and consequences of NPLs. Focusing especially on recent innovations that try to avoid, control, and minimize the impact of problem loans, it investigates the efficiency of conventional approaches and novel instruments that banks and regulatory authorities have used to resolve NPLs. Examining NPLs in the framework of both American and European banking sectors helps this study to show how reactions and trends in NPLs have been shaped by world events such the COVID-19 epidemic and the 2008 financial crisis. Given the progressively integrated structure of global financial systems, this comparative approach provides interesting study of how NPL dynamics vary under various economic situations and regulatory regimes.

The aim of this work is to analyze the dynamics of non-performing loans using descriptive analysis of NPL indicators together with qualitative literature. Analyzing several periods of economic instability and crises, the study investigates how specific events and financial environment enable NPLs to develop. The research question is the following: "How have non-performing loan levels differed between the U.S. and EU banking sectors across major economic periods, such as the pre-crisis, crisis, and post-crisis recovery phases? ". Examining how NPLs affect bank stability, economic growth, and financial sector resilience also helps one to compare novel tools aimed to address this continuous issue with traditional approaches. By identifying significant aspects and trends connected with NPLs, this study offers a good basis for understanding their bigger economic effect and for proposing feasible measures to lower their frequency. Analyzing the basic concepts, theories, and terminology related to non-performing loans allows the first chapter to provide a theoretical framework. It explores the value of NPLs in the financial industry and addresses the several reasons and consequences of these problem loans on banks and economies. It also looks at how the global financial crisis relates to NPLs and shows how some economic situations worsen their frequency. The chapter also describes preventative actions meant to lower the generation of NPLs and therefore enable knowledge of their influence on the banking industry. The second part looks at the trends and dynamics of NPLs inside American banks during the past two decades. Separated into several economic eras—pre-crisis years (2002–2007), global financial crisis (2008–2010), recovery period (2011–2019), COVID-19 pandemic and beyond (2020–2023)—it provides a historical overview of NPL trends. This chapter studies the wider economic consequences of NPLs, especially on banking sector stability and economic growth in the United States, and evaluates how these developments have changed the degrees of NPLs.

Turning now to NPL trends in the banking sector between 2002 and 2023, the European Union takes front stage in Chapter 3. This chapter covers significant events affecting NPL dynamics in the EU including the early 2000s, the financial crisis of 2008, and the COVID-19 outbreak. It provides the most current NPL figures from 2022 to 2023 combined with an analysis of how these events might influence NPL levels and banking sector stability. By contrasting the experience of the EU with that of the U.S., this chapter offers insights on the ways in which different economic contexts and legislative acts influence the consequences of NPL dynamics.

Combining the findings of the preceding chapters, the concluding section outlines the knowledge of the components affecting NPLs and their implications for banks and the whole economy. It also provides recommendations for managing and lowering NPLs depending on both traditional approaches and contemporary instruments, thereby providing directions for further research and policy choices. Emphasizing the significance of effective NPL management policies for maintaining financial stability and resilience, especially at a moment of worldwide economic uncertainty, this thesis finishes.

CHAPTER 1. NON-PERFORMING LOANS IN THE BANKING SYSTEM: CONCEPTS, THEORIES, CAUSES, AND EFFECTS

Banks want all of the loans they offer paid back on schedule and without problems. Still, this isn't always feasible. Loans might turn troublesome for reasons related to companies, the surroundings, or banks themselves. Based on the whole trend in the banking industry, the ratio of non-performing loans—which shows the proportion of non-performing loans to total loans—is usually regarded as reasonable up to 5%. A growing risk inside the bank is indicated by a change in this ratio; so, banks are advised to use different strategies to minimize this risk. It is observed that banks can lower credit risks and thus their possible losses by means of prompt measures.

In this regard, banks can do pre-analyses, choose the correct person to handle the troublesome loan, keep ties with clients, turn collateral into cash, or decide not to act about the loan. These other options can assist lower the Non-performance loan count. Non-performing loans are significant as they represent the performance level of banks and banks must keep running operations to keep their market positions and create profit for their owners. Moreover, banks have legal obligation to disclose the non-performing loan to total loan ratio, which reflects credit risk degree and the quality of delinquent loans. While a larger ratio denotes a bigger risk of loss should the bank fail to recover the loan amounts, a lower percentage shows that the risk from unpaid loans is minimal.

Growing non-performing loans lower general profitability and call for the creation of reserves. Furthermore, a large percentage of bank loans raises the same degree of chance of banks suffering financial crisis consequences (Singh, 2021). The value of non-performance loans for the banking industry and national economies will be covered in this part of the research. First, we shall review the definitions of this idea in the literature and investigate important ideas clarifying non-performance loans.

1.1. Concept of Non-performing loans

Since loans are a basic tool that enables banks to run, ensuring loan repayment is just as important for banks as providing them. Granting a loan calls for careful planning taking several factors into account including market circumstances, loan terms, collateral, debtor payment behavior, and cash flow. Should these elements be insufficiently taken into account, problems with repayment might result, hence generating the issue of "Non-performance loans." The literature now pays great focus on this problem. The literature has several definitions of non-performing loans; as there is no one consistent definition, the categorization of non-performing loans may differ nationally in terms of breadth and substance (Bhattarai, 2014). While some definitions concentrate on quantitative indicators like the number of overdue days, others rely on qualitative standards such the financial situation of the clients and management's opinion regarding future payments (Clichici & Colesnicova, 2014).

The International Monetary Fund (IMF) (2006) offers the most often used definition: loans with late payments—both principle and interest—for 90 days or longer. Restructured loans, loans with postponed payments under agreements with the customer, and interest payments that have not been paid for at least 90 days and have been added to the principle are deemed Non-performance loans according the Financial Soundness Indicators Compilation Guide. More generally, Non-performance loans are those for which the principle and interest have not been paid for a designated period, in breach of credit agreement terms and conditions. Non-performing loans, according to another definition, are the total loaned amount for which the debtor has failed at least 90 days of projected payments (Saba et al., 2012). A loan classified as problematic must satisfy specific criteria including not generating income, the full repayment of principal and interest is no longer expected, principal or interest payments delayed by 90 days or more, or the due date has passed and full payment has not been made.

Consistent with these definitions, non-performing loans are sometimes characterized as circumstances when banks do not get intended interest or installment payments, therefore halting the loan from producing income or delivering performance for the bank (Anik et al., 2019). Non-performing loans are ones whose failure to yield consistent returns results from either internal or outside events. As such, they are considered as a bad result and a cost for the lending bank, therefore impairing its whole performance. One of the most important considerations taken into account by investors and regulatory authorities in the decision-making process is the volume of non-performing loans, which also reflects the degree of bank management effectiveness.

Moreover, the literature refers to other phrases instead of the idea of non-performance loans. Among these are "non-performing loans," "delinquent loans," "loans under monitoring," "loans in administrative follow-up," "receivables to be collected," "assets to be liquidated," and "credit risk". Fofack (2005) for instance uses the phrases "receivables under monitoring" and "doubtful loans" interchangeably, whereas Berger and De Young (1997) describe receivables under monitoring as "Non-performance loans." Kirui (2014) defines non-performing loans as "non-performance assets," meaning loans for which interest or principal payments have not been made within a predefined timeframe. Loans are seen by banks as assets as the repayment of interest and principle generates a cash flow. Interest payments help banks make profit as well. Usually, banks consider these loans as troublesome when they cannot guarantee these returns. Should payments be late for a little period, the loan is labelled as "overdue"; should payments be greatly delayed—typically for ninety days—the loan is labelled as "under monitoring." High percentages of assets under monitoring indicate possible issues as compared to other lenders.

1.1.1. Classification of Non-performing loans

Maintaining profitability depends on banks, who gather savings from deposit holders and lend them as loans to individuals or businesses looking for capital, ensuring that this intermediary role is performed properly and quickly. By use of loans, channeling these savings into the appropriate sectors enhances the asset quality and resource efficiency of banks. Therefore, banks also depend critically on the loan portfolio as loans entail intrinsic risk of non-repayment, which determines asset quality. Ensuring that loans are focused on relevant industries depends on accurate assessment of loan applicants and reduction of possible hazards. Ignoring the fundamental ideas and rules that have to be followed in the distribution of credit would inevitably lead to loan non-performance and eventual loan default.

Definitions of non-performing loans—loans in which the borrower has stopped making principle and interest payments—varies nation-wide. A loan that causes problems in one nation could not be so in another. Still, occasionally opinions may line up. In this respect, one might use the IMF's 2006 definition of "loans with overdue principal and interest payments of 90 days or more as considered Non-performance loans". Conversely, in its draft report "Implementation of Technical Standards," the European Banking Authority (EBA) divides Non-performance loans into two categories: loans not yet overdue but with a risk of default (loans overdue by 1-30 days, 31-60 days, and 61-90 days); loans overdue by more than 90 days with a low likelihood of repayment. Policy guidelines and international regulations mandate that banks routinely assess their asset portfolios at least every three months. By grouping loans and advances into many categories, this technique allows banks to evaluate the state of their loan portfolios (Andoh, 2020).

The Bank of International Settlements (BIS) has separated Non-performance loans into Standard, Special Mention, Substandard, Doubtful, and Loss while there are no common international criteria for classification. Although the categories are split into related phases, there are some defining variances in the traits. Standard loan categories, according to the BIS, are described here above. Non-performing loans comprise loans falling into the last three categories; this classification can change further based on the degree of loan difficulties in collection (Saba et al., 2012).

1.2. Theories of Non-performing loans

There are several hypotheses in the literature to define and explain non-performing loans. It is vital to understand how particular ideas relate to non-performing loans since the theories underlying them have major consequences for the evaluation of non-performing loans. This part so summarizes the main hypotheses. Among these theories are those of agency theory, moral hazard theory, debt deflation theory, and financial instability theory.

Agency theory seeks to understand the link between the management of an organization and its owners, who are the shareholders. Acting as an agent, the management is seen as a contractual representative assigned to safeguard the interests of the shareholders and hence boost shareholder value. Consequently, it is expected that management would improve the financial situation of the company and act in the best interests of the owners. The idea also implies, though, that managers, functioning as agents, can act in ways that serve their personal interests at the expense of the owners, therefore compromising the financial situation of the company. Shareholders may employ many strategies to guarantee that management behaves in line with the interests of the company and thereby avoid this. These strategies might include using financial incentives to inspire management or applying pressure via a threat of a hostile takeover to guarantee managers carry out their duties (Kiruı, 2014).

Apart from the disagreement among shareholders and management, the agency issue can also exist between lenders and shareholders. Instead of deploying their resources for other ventures, both lenders and shareholders give them to the bank (or company), and they anticipate returns on their sacrifices as a prerequisite of conducting business. Still, management's choices could not equally meet all sides' expectations. For example, borrowing at high interest rates might help lenders, but the accompanying higher interest costs could lower net earnings, therefore depriving shareholders from their fair compensation. Lenders and investors thus have a conflict of interest.

Andoh (2020) contends that agency theory—which holds that conflicts of interest between banks, agents (managers, sales representatives), and principals (borrowers) cause different issues—may help to explain the predominance of non-performing loans. Ngungu and Abdul (2020) define agency theory as a dilemma when an agent acts against the best interest of the principle and hence rejects their interests. They contend that managers might not always act in ways in line with the interests of shareholders, therefore neglecting to give the maximizing of shareholder value first priority. According to the hypothesis, managers might occasionally participate in activities best suited for their personal benefit. Managerial decisions can thereby influence the quality of a bank's assets, including its non-performing loans.

Likewise, Kwashie et al. (2022) contend that conflicts of interest between management and bank owners might cause agency costs should banks be obliged to pay intermediary fees. The idea also notes that conflicts of interest might develop between borrowers and bank owners. It implies that the credit risk between commercial banks and borrowers may rise when investors are engaged in financing decisions. Risky financial projects can benefit banks greatly if successful; if they fail, the ensuing credit risk might cause financial losses totally absorbed by the banks, therefore influencing their financial performance.

Adverse selection is the issue creditors have in financial markets when trying to separate low-risk from high-risk ventures during fund allocation. Stated differently, it is difficult for investors to identify which borrowers, prior to loan agreements, have better creditworthiness. In the banking industry especially, adverse selection is quite widespread and important. While the banks experience losses in lending, deposit holders suffer from the adverse selection issue during money utilization. In this regard, especially in times when the banking industry finds greater challenges, depositors should be extra careful about which institutions they commit their funds to. These times disclose more risks and cause banks' capacity to generate money to drop significantly. Furthermore without control, banks experiencing liquidity issues might turn to other strategies to draw money. Often battling with quality problems, these banks might take low-limit deposits, provide exorbitant interest rates, or allocate some of the gathered money to overseas branches or institutions, thereby consenting to pay outrageous rates. This circumstance results in negative selection issues and large information expenses for fund holders as these organizations are not anticipated to make efficient use of the current resources. Information asymmetry—where lenders underevaluate the borrower prior to loan agreement signing—can also lead to adverse selection. Conversely, moral hazard is the result of one party abusing the powers bestowed upon the contract to harm the other party. It also goes under the name of the abuse of rights against good faith. All things considered, the issue of "asymmetric information" results from one party lacking enough knowledge to make the appropriate judgments regarding the other party or from one party holding more knowledge than the other. Asymmetric information reveals that investors can encounter unwelcome problems such adverse selection and moral hazard.

Reducing the danger of asymmetric information is therefore suggested to be crucial for minimizing non-performing loans as banks have a great chance of being exposed to moral hazard and adverse selection while lending to borrowers. Strong credit evaluation policies, efficient internal control systems, diversification, and initiatives to raise asset quality on balance sheets can all help to accomplish this (Kiruı, 2014). According to Kwashie et al. (2022), ideas used in finance and risk management to explain circumstances whereby one party in a transaction is at a disadvantage include moral hazard and adverse selection. They underline that asymmetric information makes it challenging for parties evaluating the degree of risk in a possible contract. Although they only disclose facts that may help them throughout the loan application procedure, borrowers usually have more accurate knowledge of their capacity to pay back the debt. Moral hazard and adverse selection so might cause borrowers to default on their loans, hence greatly raising credit risk and affecting bank financial performance.

Debt deflation theory emphasizes on how debt influences real estate, products, and services prices. This theory holds that declining prices in an economy are a result of the overall unpaid debt load there is. Irving Fisher's 1933 thesis contends that because of the actual rise in debt levels brought on by deflation, borrowers are more likely to default on their financial commitments during recession and depression. Fisher said that declining market prices for commodities lower demand for goods, therefore raising the debt load on consumers who find it difficult to locate purchasers.

Therefore, the hypothesis is predicated on the premise that deflation raises the actual debt load on borrowers, therefore lowering their capacity to pay back loans (Andoh, 2020). Appietu (2020) pointed out that the deflation theory suggests that financial institutions with too much debt might be compelled to sell their debt, which would cause a drop in deposits and challenges in asset sales. The declining value of deposits leads prices to drop, thereby maybe leading in large losses in the net worth of companies. Consequently, bankruptcies might rise, and because of lower employment and trade in impacted financial institutions, output may be curtailed, which would force operations at a loss.

These cycles could cause more problems like declining value of money and reduced interest rates. The debt ratio between creditors and borrowers can be changed by both internal (micro and macro variables) as well as external elements, therefore maybe causing loan defaults given to consumers. Economist Hyman Philip Minsky put out the Financial Instability Theory. Minsky maintained that since borrowers and financiers often act irresponsibly during times of economic growth, financial crises are natural in capitalism. This too high economic optimism causes financial bubbles that finally pop. Under this framework, capitalism is said to have a propensity to turn times of financial stability into volatility.

More precisely, as asset prices increase, lenders and borrowers become too optimistic and ready to accept more risks during economic boom times. In an effort to broaden their portfolios, banks sometimes reduce the necessary deposit requirements. Credit terms and conditions are easing, which drives more lending and rising asset values, hence strengthening confidence. Conversely, banks could long-term engage in speculative lending or even employ unsustainable practices like "Ponzi financing." Under this situation, instead of hedging their loans (via secured lending), financiers lend with the hope that asset prices will keep rising, therefore simplifying debt payments.

This asset bubble and speculative borrowing cannot, however, keep on endlessly. Eventually, borrowers and financiers understand that their cash flow will not be enough to cover their loan commitments after asset values cease growing (Andoh, 2020). Hyman Minsky's financial instability theory holds, all things considered, that financial crises are common under capitalism as times of economic success inspire borrowers and lenders to grow ever more daring. This too high optimism finally causes bankruptcies and economic disasters. Unsustainable debt levels can so develop, particularly for banks.

1.3. Importance of Non-Performing Loans

Through offering the required liquidity for investments, the banking industry significantly helps in supporting economic development. Weaknesses in risk management systems and financial or economic crises expose banks to major credit risks that might affect the cash flow of companies and people and cause great default rates. large credit risk results from elements like a large debt load that makes loan repayment challenging for consumers and high default rates that can harm banks' financial situation and force many of them into bankruptcy. The stability of the financial and economic systems is much impacted by all this (Joini et al., 2020).

Any financial institution's principal objective is to run profitably so as to preserve stability and steady expansion. On the other hand, the high degree of non-performing loans in the banking industry reduces the level of private investment, compromises a bank's capacity to fulfil its liabilities when they are due, and restricts the credit amount banks may grant to borrowers (Warue, 2012). Consequently, the degree of non-performing loans is crucial for the economy as they can limit banks' capacity to generate fresh loans, lower their profitability, and drain priceless resources. Furthermore, issues in the banking industry have fast expanded to other spheres of the economy, therefore compromising chances for development.

The banking industry is essential for economic development as banks welcome deposits and lend money to others. Not only do banks grant credit to people, but also to other industries including companies and governments involved in investment and development projects. Given this, the stability of the banking industry is a crucial issue as loans account for a substantial share of banks' assets. Ignoring loans on time as agreed upon results in non-performing loans, which compromises banks' asset quality and motivates them to exercise more conservative loan and advance giving policies. The drop in asset quality brought on by rising non-performing loans might lead banks to fail, therefore compromising the financial stability of the nation (Farooq et al., 2019).

Stated differently, banks give credit to companies and people to help their operations and fund capital expenditures, therefore supporting stability and economic growth as well as more production. Finding the issues compromising the performance and stability of banks is of great relevance considering the vital part the financial sector and banks play in supporting economic development and stability (Andoh, 2020). All things considered, significant and unchecked rise in non-performing loans may cause the banking sector to finally fail overall. Consequently, understanding the elements influencing credit risk is essential and seen as the secret to control of credit risk. Thus, it is important to recognize and evaluate direct as well as indirect factors of credit risk (Gabeshi, 2017).

1.4. Causes of Non-Performing Loans

Without a strong and well-functioning financial sector, no economy can grow or reach high sustainability. In this perspective, one of the markers of a strong financial industry is credit quality. High non-performance loan rates in a nation indicate a volatile financial environment (Negera, 2012). Stated differently, the stability of banks is a vital issue as, by means of money mobilization, banks significantly influence economic activity, therefore contributing to the economic stability. Consequently, banks have to have quality assets that enable their performance to be improved (Farooq et al., 2019). The whole performance of the economy would suffer if the financial system is malfunctioning. Consequently, non-performing loans—which capture the financial health and soundness of the banking industry—have grown to be a major issue for scholars, legislators, and authorities. Minimizing loan defaults (Touny & Shehab, 2015) depends on knowing the factors of non-performance.

One cannot trace the development of non-performing loans to one single element. There might be several causes for this problem; however, it is necessary to find these elements by closely analyzing the borrower's behavior and contacts with the bank. Three types of primary causes of non-performing loans may be distinguished: environmental issues, firm-related ones, and banking system flaws. Moreover, the causes of loan defaults differ greatly among nations and have a complex character in both developed and underdeveloped ones. Poor economic conditions, high real interest rates, inflation, permissive lending criteria, credit orientation, credit growth, high-risk appetite, and ineffective monitoring are only a few of the theoretically several reasons of loan defaults (Negera, 2012.). The main reasons linked with these elements are enumerated here.

Bad management in companies is one of the elements that could lead a loan to become non-performing. Among the possible reasons of inadequate management are carelessness or ill-intentioned acts including ignorance, inexperience, or lack of skill. Businesses may also collapse because of inadequate planning, lost opportunities, or environmental adaptation difficulty, which would make loan repayment on schedule challenging. Product quality is another element undermining a company's capacity to pay back debt. The profitability of the company is much correlated with the quality and superiority of the items available in the market. Difficulties in procuring energy and raw materials, a shortage of competent labour, shifting customer tastes, or technical changes can all have negative effects on manufacturing costs, therefore compromising enterprises' capacity to keep profitability and debt repayment ability. Moreover, businesses who neglect to create a strong marketing plan and properly place themselves in the market might see a drop in sales and profitability, therefore complicating the return on borrowed money. Ultimately, poor management of corporate operations, insufficient means of expenditure control, and the lack of procedures to stop fraud can make loan repayability difficult.

Environmental causes are those outside elements that, over time, could help businesses survive: economic variables, political actions, or technology developments. The financial health and continuation of a company depend on its ability to change with the times technologically. Companies who try to ignore advances might find their demand for their goods declining as well as their competitiveness. Economic state is another crucial element influencing the profitability and success of a company. A company's profitability and, thus, its capacity to pay back debt can be much influenced by buying power, taxes, interest rates, and general changes in the state of economy. Political actions influencing the profitability and financial structure of companies also include tax increases, minimum wage rising, import and export requirements restricting, Furthermore impeding a company's capacity to effectively maintain its operations are the cost and supply of natural resources as well as the negative consequences of natural catastrophes on resource acquisition.

Maximizing earnings through lending and controlling loan default risk must be balanced by bankers to help to lower capital and profits. In this sense, banks should exercise caution in approving loans as loan defaults or losses, particularly in cases of large sums, could generate issues for the bank. Banks cannot always be confident if the loans they offer will be repaid even when they demand security. When such hazards materialize, loans may turn non-performing (Negera, 2012). As so, non-performing loans can provide major difficulties for lenders. For banks, these loans can cause cash flow issues as they reflect possible losses and do not provide income. When banks must allocate money to offset these loan losses, they might also run against liquidity problems (Singh et al., 2021).

Not only can environmental circumstances and corporate situations affect non-performing loans, but also mistakes taken by bank managers throughout the lending process. Among these mistakes include insufficient knowledge on the borrowing firm, hurried and aggressive lending policies by bank management, poor financial statement analysis, and poor monitoring of the debt. The following describes the several errors made by bank officials: Ignoring the management capacity of the borrower could cause one to attribute unfavorable financial information to outside variables like competition or bad economic conditions instead of management failure. This might lead to loans being in the portfolio of the bank that ought not to have been accepted. Time restrictions might result in untrained analysts—rather than professionals—being assigned to review financial accounts, therefore fostering non-performance loans.

Inappropriate evaluation of the loan's intended use and the borrower's capacity for repayment makes loans frequently problematic. Should the management in charge of loan approval lack a thorough awareness of company operations, they may misread the cash flow and financing requirements, therefore producing inadequately constructed finance. Furthermore misaligned with the company's cash flow might be loan disbursement and payback date. Many non-performing loans might be avoided with careful study of the state of the market and the overall economic climate.

Protection of the bank from any possible losses depends on collateral given by borrowers for the loans approved. Should the collateral be judged adequate in terms of liquidity and market value, it can help to offset any loss. Therefore, one of the things a lender may do is make sure they have items acting as loan collateral.

Tracking loan quality calls for routinely receiving financial data from the business, doing frequent site inspections, and evaluating how changing economic conditions affect the borrower. Understanding how the business and loan quality are changing depends on effective monitoring. Problems could go unnoticed without appropriate monitoring, and banks would not be able to carry out quick precautionary actions, therefore causing financial losses.

Non-performing loans are predicted to rise from poor credit function management including a lack of appropriate credit rules to govern lending, prioritizing profit and development over credit quality, and hiring unskilled staff in key roles. One of the most often occurring reasons behind non-performing loans is fast expansion. A rise in investments and sales might cause business managers to lose control of internal systems, thus the firm depends increasingly on both internal and outside resources to support its expansion. Likewise, unbridled growth can cause the business to face a cash flow problem, which would force the bank to grant more loans to guarantee the firm keeps running and satisfies its debt.

1.5 Effects of Non-Performing Loans

When debtors are unable to pay according to loan conditions, non-performing loans (NPLs) result. This reduces the profitability of a bank, which results in loan losses and, in worse circumstances, defaults. Basically, a lot of non-performing loans can lower the equity of a bank, which increases the difficulty of extending fresh credit. Banks that want to properly control NPLs have to find such loans early and document their worth at a level matching the anticipated credit loss. This, however, reduces equity for underperforming institutions as they are not making profits (Fredriksson & Frykström, 2019).

Stated differently, losses resulting from bad debt can reduce banks' capital levels. Non-performing loans damage many banks' capital positions, which results in losses and a capital base erosion. In this sense, it is thought that a large percentage of NPLs would compromise banks' capacity to operate as intended and maybe endanger their existence. Early identification and treatment of NPLs are thus rather vital (El-Maude, 2017).

Furthermore, non-performing loans might cause additional uncertainty in the banking system, therefore upsetting long-term economic development and raising financial instability (Fredriksson & Frykström, 2019). All things considered, the growing proportion of NPLs affects not only the asset quality and profitability of the banking industry but also has major effects on the national economy. Examining the impact of NPLs is thus absolutely vital. One can delineate these impacts as follows.

Among the many difficulties and hazards the banking industry deals with is credit risk, often known as counterparty risk, which results from borrowers not paying back their loans on time and producing non-performing loans. Rising non-performing loans seriously jeopardize the financial system and make it challenging for banks to timely repay deposits. Loan defaults can also adversely affect commercial banks' financial situation and general performance as lending is their main activity and a main source of income. Actually, bank operations will suffer as these uncollected debts will be written off finally. All things considered, non-performing loans cause problems for banks, lower their profitability, and undermine depositor confidence. Consequently, it is imperative to handle and fix the underlying reasons of non-performing loans (Farooq et al., 2019). One of the main institutions in the financial system, non-performing loans—that is, debts partially or lately repaid by borrowers—have the following consequences on the banking sector:

• Non-performing loans limit interest revenue, remove investment possibilities, and lower financial system liquidity, therefore maybe causing insolvency problems and slowing down economic growth.

• The necessity of more control and attention drives the administrative expenses of handling non-performing loans to rise.

• The pressures of managing non-performing loans might cause managers to be unable to effectively allocate their time in other areas.

• Low profits and delayed development in banks heavily loaded with non-performing loans could demoralize staff members.

• Due debts can cost a lot of money and need for great degrees of legal knowledge.

• Should the non-performance loan to normal loan ratio get too high, the bank's activities might be halted.

• Reduced investor confidence results from high loan default rates in banks, which are essential for the economy as they give credit to people, companies, and other sectors. Should the fundamental problems remain unaddressed, the financial industry might suffer and result in foreign investor exodus from the nation.

While all companies depend on asset quality, banks especially depend on it as they are so important for the operation of the financial system, the national economy, and thus, financial markets. Loan quality in banks is directly correlated with asset quality in banks; so, one may evaluate loan quality by means of non-performing loans, which comprise overdue loans. Every bank has some non-performing loans; so, in computing the risks connected to the loans they provide to clients, they consider this fact. But a rise in defaulted loans increases loan management expenses even as it lowers interest revenue.

Although banks can often handle low levels of non-performing loans without major problems, problems develop when the amount of these loans becomes sufficient to seriously affect profitability (Fredriksson & Frykström, 2019). Reduced interest revenue and higher loan loss provisions resulting from inadequate asset quality might therefore eventually cause bank profitability and regulatory capital to deteriorate. Moreover, excessive degrees of non-performing loans might finally cause bank collapses, thereby compromising the stability of the financial system and impairing the capacity of the banking industry to support the actual economy (Baudino et al., 2018).

In this regard, the existence of non-performing loans is the key element compromising asset quality in banks. These debts generally result from the principle or interest on loans the bank issues not being paid as expected. As a result of the great share of their assets consisting of loans, which directly influences their asset quality, banks have grown very careful when granting loans and advances. A drop in asset quality brought on by rising non-performing loans can cause bank collapses and throw off the economic stability (Farooq et al., 2019).

It is well known that improper management of loans, which account for most of bank assets, might lead to large degrees of non-performing loans (Negera, 2012). Higher provisions are needed when credit risk rises as loan quality or asset quality diminishes and as asset quality drops institutions have to retain more capital to offset the related credit risk. Should these clauses prove inadequate, the negative consequences will flow into the banking sector and the larger economy as the default loan count rises.

Maintaining market trust in the bank depends critically on the clauses banks put aside for non-performing loans, which also show how ready the bank is for anticipated credit losses. A bank's ability to recruit fresh capital and get funding is more challenged when it shows investors that the probability of losses is higher when it has large reserves for bad loans. Therefore, should the bank run at a loss and find it difficult to draw fresh capital from investors, it runs the danger of violating capital requirements, therefore compromising its capital adequacy and raising the chance of defaults (Fredriksson & Frykström, 2019).

Given the loan's term and the collateral given, banks are legally obliged to set apart clauses allowing for non-repayment within a designated period. Higher provisions and a lower income resulting from a rise in non-performing loans both negatively impact the equity of the bank. Apart from restricting the bank's capacity to distribute money to revenue-generating projects, this raises its possible losses and can lead to insolvency should the non-performing loan ratio keep rising. Furthermore aggravating cost inflation are non-performing loans. Non-performing loans limit a bank's capacity to turn a profit, so banks could increase interest rates to make up for it, thereby driving further cost inflation.

Furthermore, banks may find it difficult to grant loans to companies looking for financing for employment and production as the percentage of non-performing loans increases, therefore affecting the overall state of the nation. Stated differently, non-performing loans lower bank profitability and typically stop banks from lending more money to companies and individuals, therefore slowing down economic development and seriously challenging the banking industry (Singh, 2021). Loans are, all things considered, necessary for bank profitability as well as for economic progress; nevertheless, when they are not paid back, banks lose income and a nation's development suffers (Henrietta, 2020).

The rise in non-performing loan volume compromises banks' capacity to provide fresh loans and lowers their profitability, therefore aggravating capital adequacy problems for them. Long term, this can restrict economic development, raise banking system uncertainty, and raise financial stability concerns (Fredriksson & Frykström, 2019).

The evolution of economies is strongly influenced by financial institutions. Macroeconomic stability, an effective, healthy financial system, and economic development depend on each other, hence banks are especially crucial for this process. But banks also run credit risk; the less developed an economy a nation has, the more credit risk banks run (Muhović & Subić, 2019). Previous research indicates that among other things, weak economic conditions, poor credit management, and ignorance of loan terms help to explain the rise in non-performing loans, which in turn can be a major cause of bank collapses. Although the increase in non-performing loans first affects particular commercial banks, over time it compromises the whole financial system and the national economy.

Additionally, the upward trend in non-performing loans increases the likelihood of a banking crisis, significantly disrupting the effectiveness of the banking system (Singh, 2021). In other words, when loans extended to the economy are not repaid on time and become classified as non-performing, this situation first affects the lending bank, then the financial sector, and ultimately the real sector through a domino effect. As a result, the existence of non-performing loans presents a significant risk to the stability of national economies.

The non-performing loan ratio is an important metric for evaluating the performance of a bank, economic activity, and the stability and soundness of the country's financial system. Given its repetitive nature during financial crises (Baudino et al., 2018), studying the relationship between the banking sector's structure and the trajectory of non-performing loans is essential to understanding how crises can bring significant changes to the banking system.

1.6 Relationship Between Non-Performing Loans and the Global Financial Crisis

One of the most urgent economic problems in the fast exhausted resources of today is how effectively to make use of little resources. Considered the engine of economies, the banking industry was mostly responsible for the global financial crisis's start, especially with regard to the high-interest subprime mortgage loans given to those with bad credit scores. Thus, banks play a vital part in an economy and any issues in the banking industry might have a detrimental effect on the whole one. Globalization has made the banking industry more well-known, but it has also brought more hazards for which banks have to control. Some nations have neglected these hazards, leading to many crises within the past thirty years. Although many of these crises struck underdeveloped nations, several also touched industrialized nations.

One such a crises in wealthy economies is the worldwide financial crisis starting in the United States in 2008. Quickly affecting much of the world, the negative consequences of this crisis soon reached underdeveloped countries. Many developing nations saw severe drops in their stock markets; currencies lost value; risk premiums on government and business bonds soared; and foreign capital flows and bank borrowings sharply dropped. Many banks collapsed when appropriate preventative action was not taken and the systematic risks resulting from fast loan expansion and asset price bubbles were improperly controlled.

A substantial surge in defaults on high-interest home loans brought non-performing loans under more focus following the global financial crisis that began in the United States and extended to Europe and the rest of the globe. Following the global financial crisis of 2008, multinational financial institutions had several difficulties including an increase in non-performing loans. Particularly because of mortgage-backed securities and derivative products, several reputable financial institutions failed. For banks and wealthy nations, non-performing loans have grown to be a major concern starting 2008. Data indicates that the crisis significantly raised non-performing loans in both developed and developing nations. According to World Bank figures, the increase in non-performing loans was more noticeable in industrialized nations than in developing ones relative to the pre-crisis era. Furthermore, whilst in underdeveloped nations the recovery was sluggish and gradual, the post-crisis rise in non-performing loans in rich nations was shown to be more severe and consistent.

Both developed and developing nations' non-performance loan percentage is clearly correlated with banking issues and financial crises, as is well acknowledged (El-Maude et al., 2017). During the crisis, the proportion of uncollected loans among all loans changed and resulted in significant financial expenses. Three key explanations explain why large degrees of non-performing loans in bank balance sheets compromise the soundness of the banking system and its capability to lend to the actual economy. Non-performing loans first harm bank profitability. Monitoring and managing these loans are expensive; they need more provisions; they lower interest revenue; and they raise funding costs as risk-averse investors are less likely to lend to institutions with poor credit quality. Second, non-performing loans have greater risk weights which increases capital needs. Banks may so cut leverage to preserve or improve capital adequacy, hence limiting the supply of credit. Managing significant amounts of non-performing loans finally takes valuable management resources away from more important and lucrative activities (Huljak et al., 2022).

Maintaining non-performing loans on the books and constantly renewing them helps to trap resources in unproductive industries, therefore impeding economic development and lowering the economic efficiency. High degrees of non-performing loans simultaneously damage bank balance sheets, slow down credit growth, and postpone economic recovery (Ari et al., 2020). Significant amounts of non-performing loans strain banks, therefore these losses reduce their profitability and erode their capital, so maybe causing financial institutions to collapse. Generally speaking, large degrees of non-performing loans have bad effects on the economy and lower market expectations (Balgova et al., 2017).

Moreover, non-performing loans—which in the banking industry are regarded as a gauge of credit risk and asset quality—show evidence of declining bank balance sheets and usually precede crises in the banking industry. First impacted in the financial sector, first the lending bank and subsequently other banks, when loans entered the economic cycle are not returned on time and become non-performing. Stated differently, large degrees of non-performing loans—which are either in default or near to default—are a typical feature of banking crises (Ari et al., 2020). These loans can therefore set off expensive crises in the banking industry. These crises have detrimental spill-over consequences on the real economy in addition to affecting the banking industry, which is vitally important in the payment system.

One of the main factors influencing the scope and nature of these crises is the deterioration in the ability of all economic units to meet their obligations. Ultimately, as the volume of non-performing loans in the banking system rapidly rises, the debt levels in the real sector may become unsustainable. In summary, large and uncontrolled increases in non-performing loans can lead to the collapse of the banking system as a whole, which is why analyzing the factors affecting credit risk is essential and is considered key to credit risk management. Identifying and assessing the direct and indirect determinants of credit risk is therefore crucial (Gabeshi, 2017). Since non-performing loans are one of the most significant causes of economic recessions, minimizing these loans is essential for improving economic growth.

1.7 Measures to Prevent the Formation of Non-Performing Loans

Once the loan is moved to the customer's account, the credit allocation procedure ends. Ensuring the good loan repayment calls for constant observation and, if needed, restructuring processes. Loans are under great observation by specialized departments as they stay active until they enter the legal follow-up phase. In this regard, tight communication between the monitoring and credit allocation personnel is rather crucial. Reducing the projected hazards is equally vital as making sure loans are paid back without problems. Consequently, banks are in charge of following required internal procedures like handling non-performing loans correctly once they develop, good credit monitoring, and issuing healthy loans. This depends on efficient bank monitoring, hence regulatory authorities have to constantly check the banks' risks and regulatory compliance. Managing the risks presented by non-performing loans depends on early stage addressing of problems (Fredriksson & Frykström, 2019). Several actions may be performed to avoid loans from becoming problematic: applying efficient monitoring systems, spotting early warning indications, and spotting early stage declining client relationships.

Many bankers think that borrower fraud during the loan application procedure and loan amount abuse following loan acquisition are the major reasons of loan defaults. Eliminating this problem so depends on closely reviewing loan applications before approving credit. Similarly, improving post-loan monitoring and assessment is crucial for lowering dishonest behavior by borrowers and therefore lowering the count of non-performing loans (Bhattarai, 2014). Resolving consumer credit concerns fast depends on early detection of such problems. The monitoring role is to guarantee credit policy compliance, spot early non-performance of loans, and act quickly to fix them. Banking regulatory regulations state that this is one of the basic control measures needed in the credit process.

Following banking rules, bank management has to create thorough, recorded, approved processes to regularly check the loan performance. In this regard, the staff members in charge of the credit distribution process and those in the monitoring department should cooperate in credit monitoring. Adoption of inadequate and poor monitoring methods can help non-performing loans to arise; but, well-designed monitoring systems can identify issues early on. For this, it is important to routinely get and closely review loan clients' financial statements. Customer routine visits should be carried out to see if their operations or management systems are disrupted; so, constant touch with them should be kept. Frequent evaluation of reports from sectoral sources and chambers of business can help banks remain updated about all the players engaged with their credit clients.

Giving clients allowed or illegal facilities helps non-performance loans to develop. Although it is impossible to totally eradicate such loans in the banking industry, one may lower them to a reasonable level. Considered hazardous assets, loans and advances account for a large share of a bank's assets and may have a detrimental impact on its situation should they turn troublesome. This might be a first indication that commercial operations of the bank are under danger (El-Maude et al., 2017).

Generally speaking, loans do not turn troublesome without notice. Usually, they exhibit some signs. Preventive measures may be done and solutions can be created more quickly if these warning signs are watched over and appropriately responded to on time. Changes in balance sheet and income statement items, financial difficulties, business operations, management concerns, or particular circumstances like compliance with credit conditions, collateral, and loan monitoring can all lead to these early warning signals..

Companies having financial problems can offer warning signals before they fail. These include steadily decreasing bank savings, little credit activity with use close to the limit, and a fast increase in short-term loans. Along with a slowing down in collecting, they could also reschedule loan repayments, notice rising inventory levels with slower turnover, and witness a change in receivables. Cash generation suffers, sales slow down, and expenses including returns, marketing, and financing rise dramatically. While subsidiaries and fixed assets are sold, temporary assets and capitalized expenses shown on the balance sheet may increase. The company could include financial expenses on fixed assets rather of assigning depreciation for them. Changes in banks or management—especially at the top—also indicate problems. These are somewhat typical signs of possible financial trouble.

This problem shows itself when the bank's connection with the client declines and shows late payments, credit limit exceeding, rejected checks, credit agreement violation. Many times, banks overlook these warning indicators until the problem gets severe, at which point they admit the existence of it. A third party may occasionally notify the bank of a concern, including warnings from insurance companies when employee insurance premiums are unpaid, legal proceedings against a client, or delays in supplier or employee payment processing. Should the client neglect to provide the bank timely financial data, it indicates that a loan will soon present a challenge for the institution. The credit management team should routinely ask the client for information; should the consumer object to supply financial data or have not prepared it, this should be viewed as a major caution.

Once one realizes a debt is causing problems, one should act right away. Securing the loan repayment and therefore stabilizing the circumstances should come first. Improving the financial situation of the consumers will help to safeguard the interests of the bank as it guarantees the receivables and strengthens the bond between the bank and the client. Should the loan turn out to be a loss, the bank can decide to liquidate the collateral, keep its contact with the client, or do nothing at all. These steps are meant to help to reduce the losses of the bank. Still, there are more sensible and workable answers available before acting in these directions.

Strict policies used by banks starting legal actions or liquidating collateral can lead to the loss of current clients, damage businesses supporting the economy, and sour impressions of the bank among potential clients. This can thus have bad effects on the actual economy, the financial industry, and the whole national economy. Consequently, the basic guideline in addressing a non-performing loan is to minimize the losses to the bank without driving companies into liquidation. Liquidation of a borrowing company should just be regarded as a last option.

To keep the loan or progressively liquidate it, banks might provide either long-term or temporary solutions. Restructuring the loan, changing the management team should the failure result from managerial problems should legal action be needed, consulting solicitors.

Loans when cash flow and repayment concerns are expected—based on client comments, intelligence, or review findings—fall under a restructuring decision. Customers under restructuring have to be intending to pay back, have cash flow problems, be actively operating, have made at least one credit-related payment, be in a reasonable financial state, and have the ability to enhance collateral should needed.

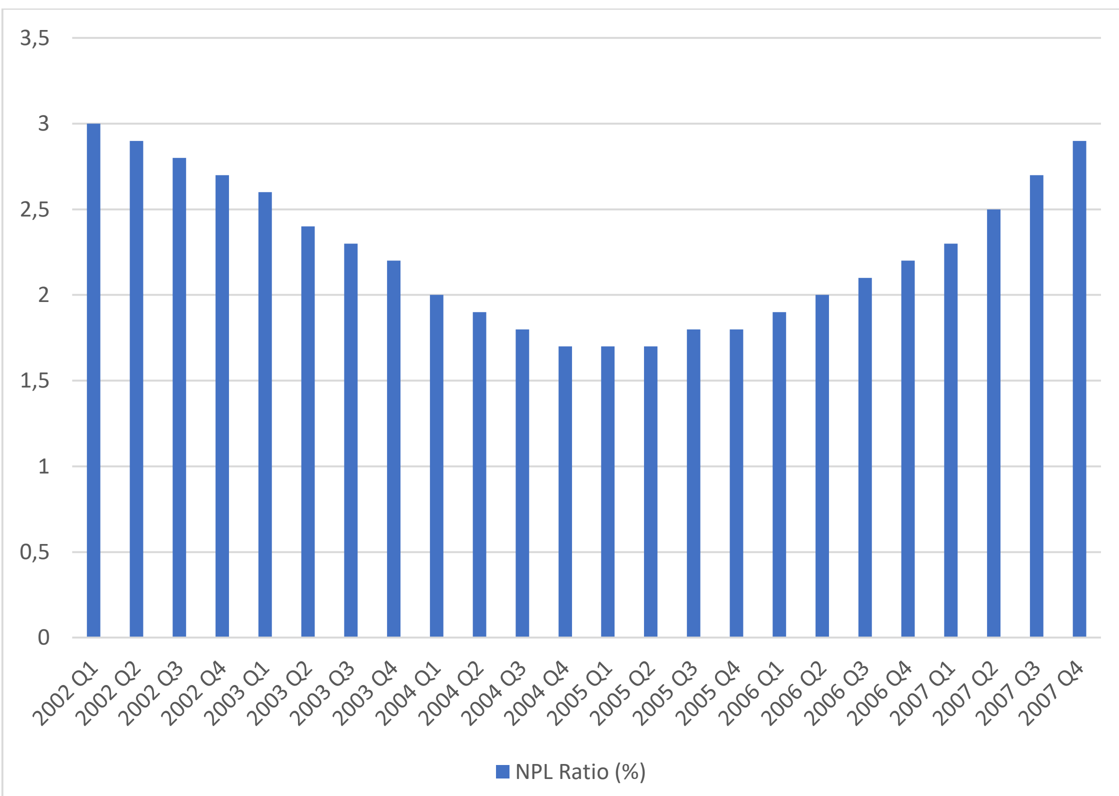
CHAPTER 2: THE DYNAMICS OF PROBLEM LOANS OF USA BANKS ACTIVITIES: 2002-2023 AND INFLUENCE OF NPLS

2.1 Historical Overview of NPLs in USA for 2002-2023

2.1.1 2002-2007: Pre-crisis Period

From 2002 to 2007, the pre-crisis era, the U.S. financial and credit markets were marked by consistent economic growth and increasing loan activity. This period came after the 2001 recession, which had affected credit markets but also resulted in aggressive monetary measures meant to boost the economy. Lowering interest rates by the Federal Reserve had created an environment in which borrowing money appealed to businesses as well as people. Banks in the United States started to relax lending criteria as the economy showed indications of recovery to satisfy the growing demand for credit, hence increasing loan issuances in many different sectors, notably in the housing market.

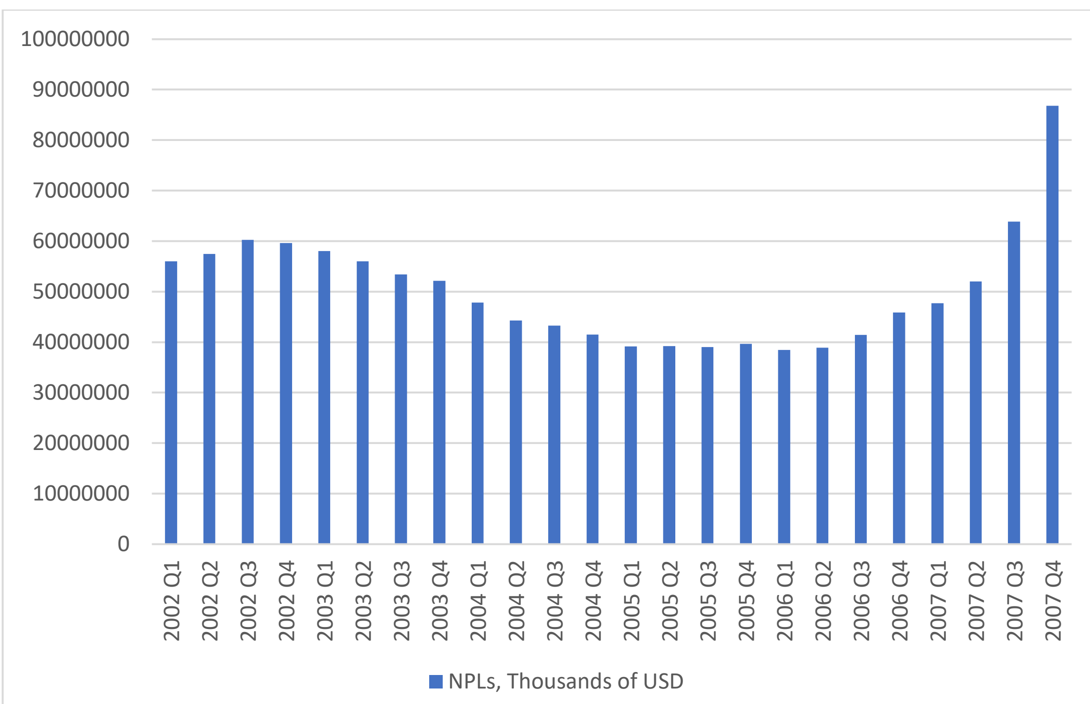
Figure 1. NPL ratio between 2002-2007, %



Source: Ceicdata, 2023

Declining non-performing loan (NPL) rates matched the growing credit availability as a solid economic condition helped loan repayments. Based on numbers, the NPL ratio declined progressively from 3% in the first quarter of 2002 to a low of 1.7% by late 2004. Mostly this trend was driven by positive economic conditions, rising consumer confidence, and consistent employment growth—which reduce loan default risk. Furthermore, NPL levels obviously declined as banks started lending, especially subprime mortgages, to capitalize on the bubble of the property market. The early success of subprime lending inspired banks to modify their strategies as they believed the rising value of real estate assets would always guard them from any collapse. But these days of aggressive lending policies created a false sense of protection. As the NPL ratio kept decreasing in the middle of the 2000s, reached its lowest point of 1.7%, in 2004 and held at that level through early 2005, banks were more confident and maintained lowering loan conditions. This overly high risk-taking was brought about by innovations in financial products as mortgage-backed securities (MBS), which enabled banks transfer credit risk to investors. Since it provided banks with additional money to lend, therefore fostering credit creation, the securitization of loans became a main feature of the financial landscape during this period. By effectively hiding the inherent risks associated with subprime lending, these instruments lowered the NPL ratios even as the quality of the underlying assets deteriorated.

Figure 2. US Non-performing loans, Thousands of USD, 2002-2007



Source: Federal Reserves Bank, Economic Data, 2023

The facts offered helps one to grasp the differences in non-performing loans (NPLs) in the United States between early 2002 and mid-2007. This period exhibits obvious highs and lows in NPL values, which are moulded by many economic and financial market dynamics including macroeconomic trends, interest rate fluctuations, and lending regulations modification.

The NPL value in the start of 2002 was $56 billion. This somewhat high beginning position fits the post-2001 crisis economic situation, in which sluggish economic development and still rebounding financial markets matched. Maintaining loan quality was difficult for banks since certain borrowers found it difficult to satisfy their responsibilities. Reflecting the ongoing pressure on borrowers despite low-interest rates, which were meant to boost economic development, the NPL by April 2002 rose to around $57.5 billion.

Rising further to $60.2 billion in the third quarter of 2002, NPLs The lingering consequences of the 2001 recession help to explain this rise as homes and companies still under financial pressure and some loans were difficult to pay back. But by October 2002, the NPL level started to somewhat decline and dropped to $59.6 billion. Given low interest rates, which support consumer spending and investment, this autumn may be an early sign of slow but steady economic recovery.

Starting at $58 billion in January and progressively lowering to $52.1 billion by October, the 2003 data indicates a declining trend in NPLs. This steady drop illustrates the course of recovery of the U.S. economy, in which rising employment rates and consumer confidence let borrowers better control their debt. Maintaining low-interest rates, the Federal Reserve's accommodating monetary policy helped to encourage this trend by making borrowing more accessible and thereby reducing the burden of repayment for many consumers.

The NPL trend remained down in 2004; the value dropped noticeably from $47.8 billion in January to $41.4 billion by October. This decline fits the economic boom in the mid-2000s, when rising consumer expenditure and company investment propelled development. Rising housing prices helped to explain better loan performance, especially in the mortgage market as homeowners were less likely to default when their homes rose. NPLs had at one of their lowest peaks by the end of 2004, indicating a period of stability and good loan performance.

NPL values stayed somewhat low into 2005, with little change between $39 billion and $39.6 billion. Low unemployment, steady economic development, and ongoing hope in the property market help to explain the stability in NPLs throughout this time. Though lending criteria were starting to loosen, the consequences of riskier lending policies had not yet shown themselves as higher loan defaults. The low NPL percentage thus reflected the resiliency of the economy and the seeming stability of the banking industry.

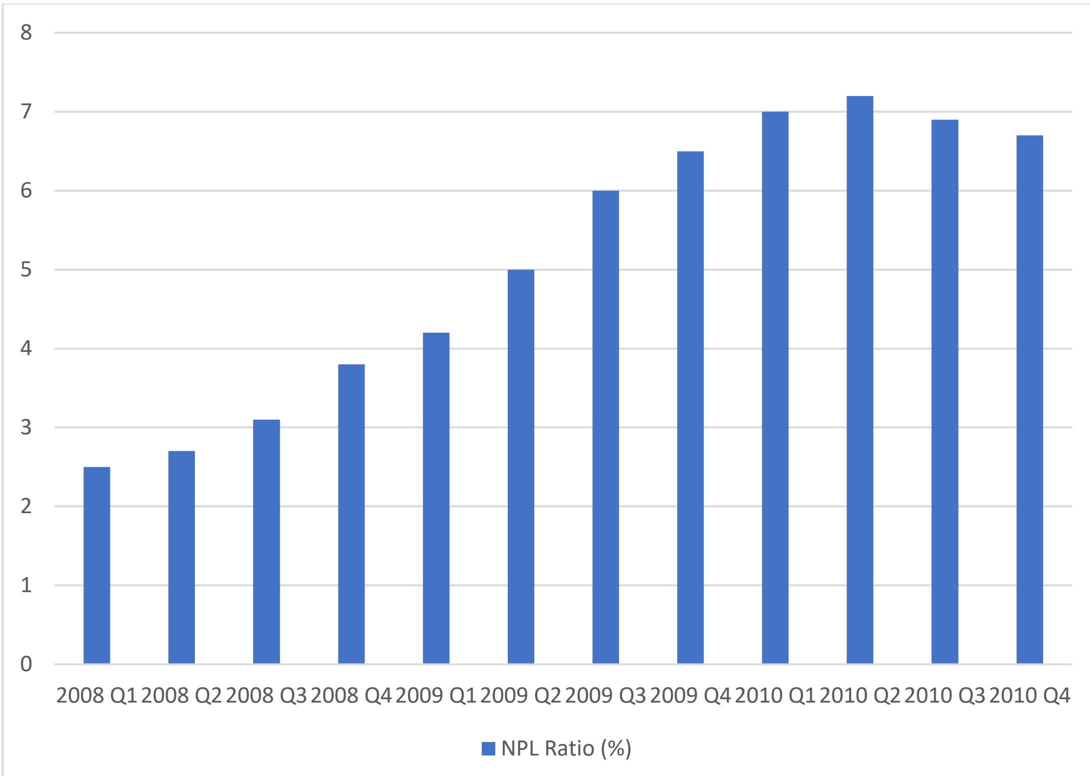
But change started to show in 2006. Beginning in January at $38.4 billion, NPLs saw a modest increase to $45.8 billion by October. Given early indications of pressure in the real estate market—home price increase halting and interest rates starting to rise—this increase points to a change in loan performance. Popular during the housing bubble, adjustable-rate mortgages (ARMs) began to reset at higher rates, therefore adding more financial strain on borrowers—especially those with subprime loans. This first increase in NPLs thus anticipated possible difficulties in the loan market.

By 2007, the tendency of rising NPLs started to show greater clarity. The NPL value peaked in January at about $47.7 billion, then climbed to $51.9 billion by April and finally surged to $63.8 billion by July. This fast rise in NPLs underlines the worsening state of the mortgage market and the larger financial system. As interest rates kept rising, more borrowers—especially those with subprime loans—found difficulties meeting their loan conditions. Previously fuelling years of economic growth, the housing sector was now producing volatility as declining property values and more foreclosures resulted in increasing non-performing loans. The large concentration of mortgage-backed securities (MBS) and other credit instruments linked to these loans compounded the problem as banks and investors both came to realize the degree of their risk exposure. Low interest rates and great investor confidence drive pre-crisis years 2002–2007 to display notable rise in lending. But it also signaled the emergence of underlying weaknesses resulting from liberal lending criteria and dependence on securitization, which concealed the actual risk of non-performing loans. Though not concerning at the time, the slow rise in the NPL ratio in 2006 and 2007 foreshadowed the financial instability that would soon disturb the U.S. economy and showed how the dynamics of NPLs during this era finally led to the crisis.

2.1.2 2008-2010: Global Financial Crisis

Defined by the Global Financial Crisis, the years 2008 to 2010 represent a significant and until unheard-of chapter in the history of world finance. Originating in the United States, this crisis started with the collapse of the housing bubble and was worsened by broad exposure to mortgage-backed securities (MBS) and collateralized debt obligations (CDOs), connected to subprime mortgages. Once seen as low-risk, these financial instruments started to lose value as home values fell and mortgage defaults skyrocketed, therefore causing significant losses for banks and financial institutions all around. Although the effects of this financial crisis were felt in many spheres, the banking industry was worst hit; Non-Performing Loans (NPLs) surged sharply as borrowers—especially those in the subprime category—failed to make their loan payments.

Figure 3. NPL ratio between 2008-2010, %



Source: Ceicdata, 2023

Early in 2008 the crisis began to substantially influence NPL percentages. Although it was greater than in the years before the crisis, the first quarter of 2008 was very small with an NPL ratio of 2.5%. But as the effects of the crisis deepened, the NPL proportion began to rise.

The NPL ratio climbed to 2.7% in the second quarter of 2008 and to 3.1% in the third quarter. Rising number of defaults on house loans, especially adjustable-rate mortgages that had reset at higher rates, which rendered repayments impossible for many borrowers, caused this first rise in NPLs. The NPL ratio surged dramatically to 3.8%, thereby aggravating the situation in the fourth quarter of 2008. This time frame matched the fall of big financial companies like Lehman Brothers and a later tightening of lending as banks become more risk-averse. The following liquidity crisis worsened the situation as debtors had few choices to restructure or refinance their loan, which resulted in more NPL rise.

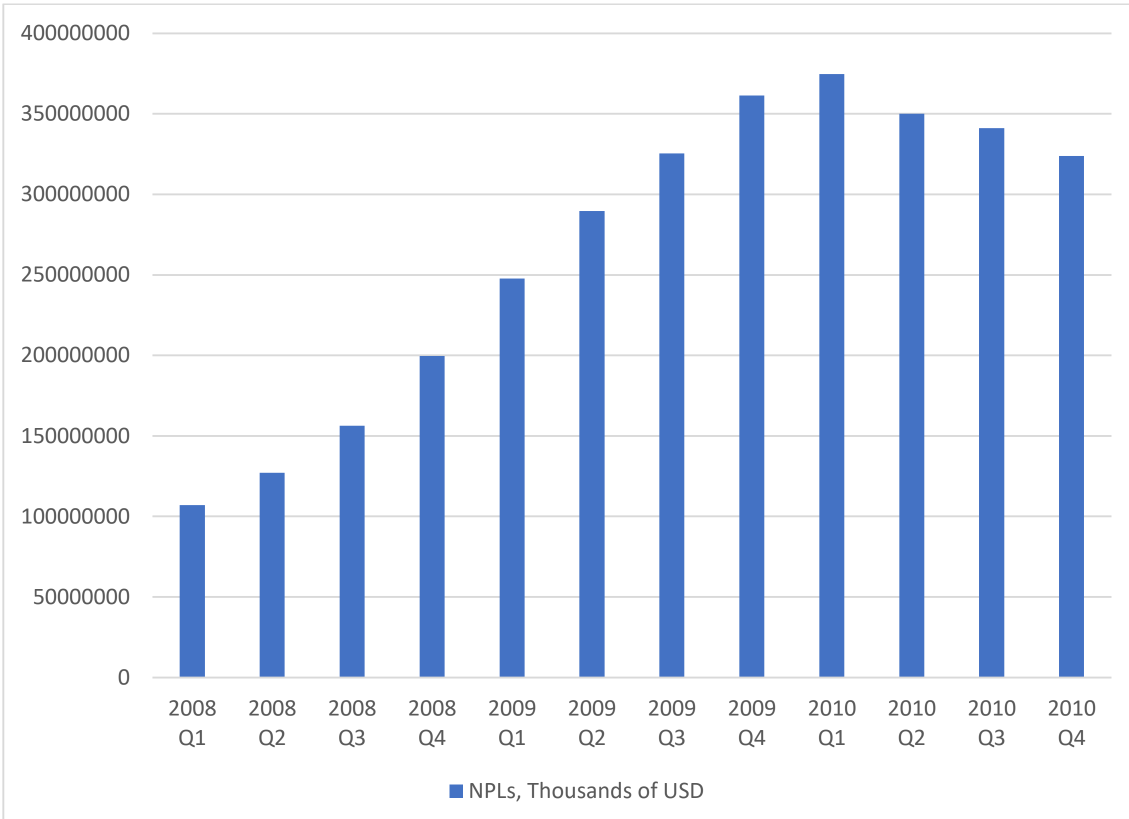
As the economy sank into a severe recession in 2009, NPLs showed even more marked increase. Reflecting the ongoing declining credit quality in several sectors, including mortgages, commercial loans, and consumer lending, the NPL ratio in the first quarter of 2009 came out at 4.2%. Many loan holders battled to make their payments as unemployment rates increased and economic development slowed down.

Apart from actual real estate, the declining housing market affected consumer expenditure, business investment, and overall economic confidence in turn. growing all year, the NPL ratio rocketed to 5% in the second quarter of 2009 and continued growing to 6% in the third and 6.5% in the fourth. This sharp rise in NPLs highlighted the systematic character of the crisis as even usually safer areas of the market started to display symptoms of crisis. Rising losses forced banks to tighten lending requirements, therefore limiting economic activity and fuelling a self-reinforcing cycle of increasing defaults and economic recession.

The US government and the Federal Reserve got involved with hitherto unheard-of steps to stabilise the financial system as the crisis persisted. Among these were the Federal Reserve's quantitative easing activities, which sought to cut interest rates and supply liquidity in the financial markets, and the Troubled Asset Relief Program (Tarp), which gave big banks capital injection. In 2010 the NPL ratio remained rising despite these treatments; it peaked in the first quarter at 7%. Apart from the delayed consequences of the economic crisis on consumer and business credit performance, this peak marked the end of many years of accumulated risk and unsustainable lending practices. Reflecting the lagging effect of the crisis on some loan categories, such commercial real estate loans, which often show a delayed response to economic downturns due of longer loan maturities and more complex restructuring processes, the NPL ratio had slightly increased to 7.2% by the second quarter of 2010.

Still, there were indications of stabilization in the later part of 2010. The NPL ratio had dropped somewhat to 6.9% by the third quarter and dropped some more to 6.7% by the fourth quarter. The effects of government stimulus programs, the slow economic recovery, and the restructuring and write-downs of bad loans by financial institutions most certainly combined to produce this meagre improvement. In order to avoid a crisis repetition, banks also started to exercise more careful lending policies, stressing credit quality and risk management. Although the NPL ratio stayed high relative to pre-crisis norms, the declining trend suggested that the worst of the crisis had passed and that the financial sector was gradually returning normalcy.

Figure 4. US Non-performing loans, Thousands of Dollars, 2008-2010



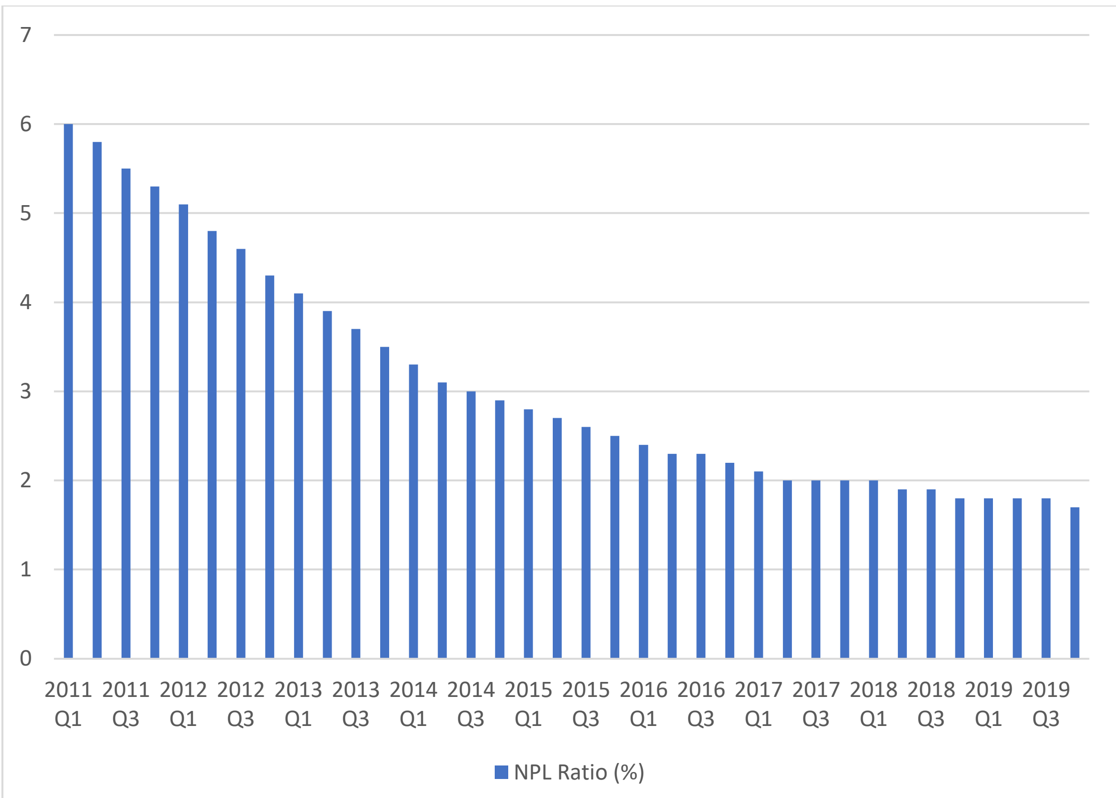
Source: Federal Reserves Bank, Economic Data, 2023

The Global Financial Crisis affected non-performing loans greatly as it revealed the weaknesses in the financial system and emphasized the results of too much risk-taking and poor regulatory control. The degree of the economic crisis and the general suffering among borrowers in many different fields were reflected in the explosive rise in NPLs from 2008 to 2010. To guarantee the stability of the banking industry, this era underlined the necessity of stricter lending criteria, better risk assessment techniques, and strengthened regulatory systems. As banks, authorities, and legislators sought to solve the fundamental problems causing the increase in NPLs during this stormy era, the legacy of the crisis kept forming the financial scene in the years that followed.

2.1.3 2011-2019: Recovery Period

Following the 2008 Global Financial Crisis, the years 2011 to 2019 represent a significant era of recovery in the United States banking sector. As the economy grew, unemployment dropped, and the property market steadied, the non-performing loan (NPL) percentage steadily dropped. Stronger legislation, more risk management strategies, and higher capital requirements were among the reforms the seriously compromised financial sector experienced. These developments were crucial in rebuilding confidence in the banking sector, hence improving loan performance and reducing NPL numbers.

Figure 5. NPL ratio between 20011-2019, %



Source: Ceicdata, 2023

The NPL ratio remained somewhat high—about 6%—early in 2011. This high degree underlined the residual effects of the crisis as many borrowers—especially those with mortgages—kept having trouble paying back their debts. As the economic recovery gained momentum, the NPL % began a consistent falling trend, nevertheless. By the end of 2011, the NPL ratio dropped to 5.3%, indicating a slow down starting point. Driven by policy actions aimed to stabilize the housing market and help impoverished homeowners along with economic development and job creation, this drop resulted.

The low-interest rate policy of the Federal Reserve also helped as it lessened the stress of repayment for borrowers therefore facilitating their ability to fulfil their financial responsibilities. The NPL ratio dropped fastest in 2012 and 2013. The NPL ratio dropped to 4.3% by end of 2012 and then dropped to 3.5% by end of 2013. The economic growth under progress as well as deliberate attempts to solve mortgage delinquencies help to explain this period of fast recovery. The Home Affordable Modification Program (HAMP) among other government initiatives helped struggling homeowners modify their loans and prevent default. Furthermore helping to lower NPLs were banks' significant efforts to address non-performing assets by selling or restructuring troubled loans. Loan quality therefore improved noticeably, especially in the residential mortgage market, which had suffered one of the worst effects during the crisis.

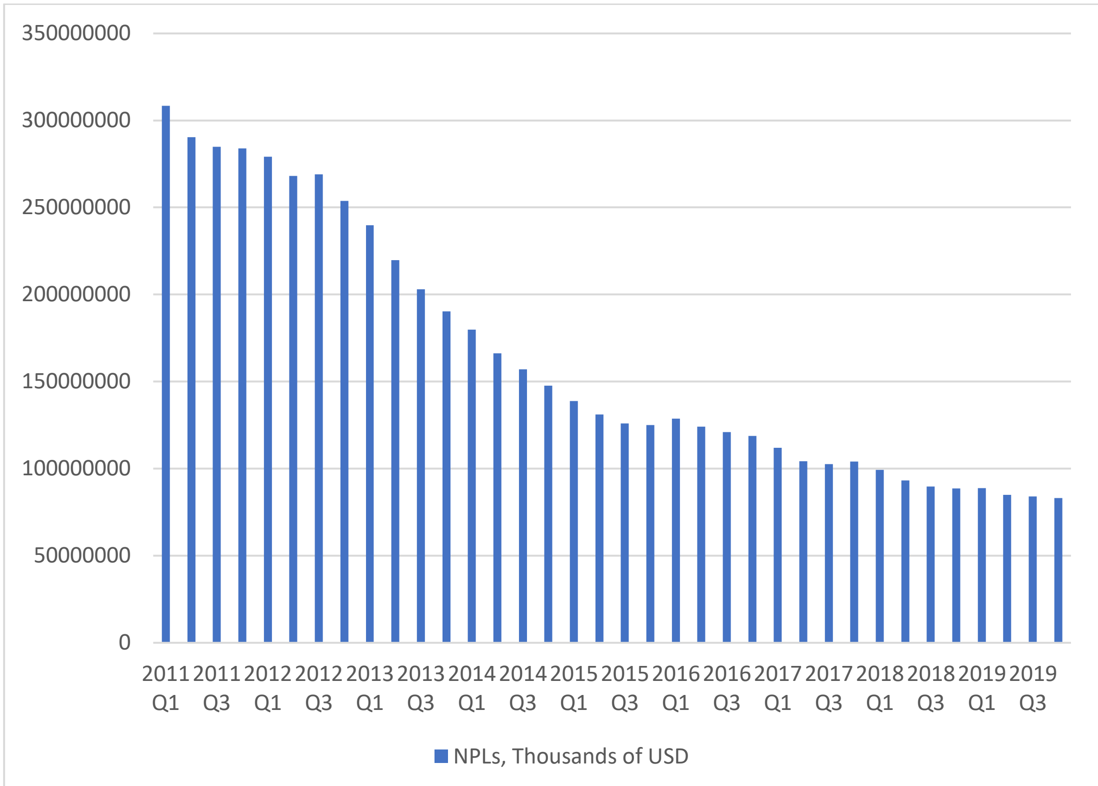
Though at a slower speed than in the first years of recovery, the NPL ratio kept declining between 2014 and 2016. The ratio declined further to around 2.2% by 2016, from 2.9% by the end of 2014. This slow down indicates the financial industry's long-term stability as well as the economic one. Over this era, banks focused on strengthening their lending standards and risk management systems to prevent a crisis resurgence.

Among other rules, the Dodd-Frank Act required banks to maintain greater capital and do regular stress tests to ensure their resiliency in lean economic times. These actions assisted the banking sector to turn around generally and assist in consistent reduction of non-performing loans. Furthermore, the declining unemployment and steady wage rise helped to enhance loan performance as more homeowners had the financial stability needed to make their payments.

Reflecting a period of stability and resilience in the banking industry, the NPL ratio dropped historically low between 2017 and 2019. The ratio settled around 2% by 2017, was mostly unaltered into 2019, and by the end of that year it stood 1.7%. Strong economic conditions marked by low unemployment, increasing consumer confidence, and consistent house market expansion help to explain this stability.

Since banks were now more suited to control credit risk, the legislative and policy adjustments carried out during the crisis also proved rather important in preserving loan quality. Moreover, the slow economic development and good credit conditions helped borrowers, therefore lowering the default risk. The low and steady NPL ratio over these years shows that the crisis's lessons made the banking industry more robust and careful in lending, therefore the recovery era had effectively restored health to it.

Figure 6. US Non-performing loans, Thousands of Dollars, 2011-2019



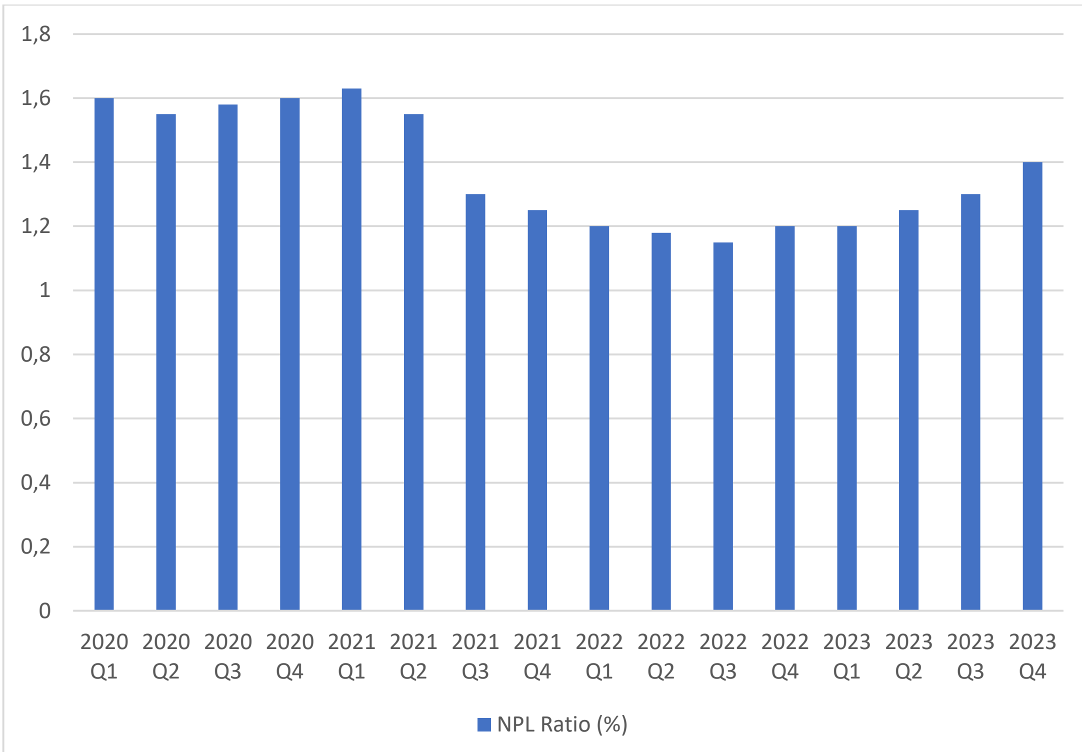
Source: Federal Reserves Bank, Economic Data, 2023

Driven by economic development, governmental interventions, and regulatory changes, the period from 2011 to 2019 shows a recovery path in which non-performing loans constantly dropped. Particularly the large drops in the early years of recovery, the observed variations in the NPL percentage demonstrate the success of these policies in steadying the financial system and helping borrowers. By the conclusion of this time, the banking industry not only recovered from the crisis but also changed its policies and implemented measures meant to prevent further financial crises. The low NPL percentage at the end of 2019 highlighted the sector's increasing resilience and signaled the effective end of a difficult chapter in American financial scene.

2.1.4 2020-2023: COVID-19 Pandemic and Beyond

The COVID-19 epidemic, a health disaster fast turning into an economic shock seriously hurting people, companies, and financial institutions all around, characterized the years 2020 to 2023. The epidemic brought a sudden stop to American economic activity, which resulted in large job losses and forced companies to shut or run at less capacity. As homes and companies battled debt, the banking sector suffered greatly and major questions about the expected increase in non-performing loans (NPLs) emerged. The U.S. government and Federal Reserve acted quickly and broadly to offset stimulus packages, loan deferral programs, and ultra-low interest rates—which had a significant impact on loan performance and the general NPL percentage.

Figure 7. NPL ratio between 2020-2023, %



Source: Ceicdata, 2023

Beginning at 1.6% in Q1 2020 and somewhat declining to 1.55% in Q2, the NPL ratio shown small swings across the first phases of the epidemic. Among government initiatives largely helping to bring stability were stimulus cheques, increased unemployment benefits, and the Paycheque Protection Program (PPP)—where debt forgiveness of firms helps to retain people on their payrolls. Banks provided debt forbearance and deferral alternatives to support struggling borrowers, therefore reducing an unanticipated rise in non-performing loans despite the severe economic crisis. Even more relief comes from the Federal Reserve's almost zero interest rate drop by lowering borrower repayment stress.

The NPL ratio saw swings in 2020; at last, the fourth quarter's performance came out at 1.6%. The fact that NPLs bear in spite of continuous economic difficulties revealed the effectiveness of the applied remedial actions. As government support started to wain in Q1 2021, the NPL ratio climbed to 1.63%. This increase brought attention to the burden on borrowers as some firms and houses were susceptible long after loan deferrals and relief efforts ended. Constant economic development and the immunization campaign helped to get things under control. From 1.3% when companies started running once again and employment levels rose, the NPL percentage dropped significantly by Q3 2021. This drop implied that the banking industry was constant even if many of its customers were starting to show good financial situation.

Reflecting the strong state of the economy and the long-lasting results of past stimulus programs, the NPL % stays quite low in 2022.

The NPL ratio plummeted to 1.15% in Q2 2022, the lowest level ever recorded. The continuing low level may be mostly explained by the resilience of the economic recovery as well as by reasonable lending policies of the banking sector both before and after the outbreak. Tight lending conditions have enabled financial companies to become more risk-averse, therefore lowering probable risks from approaching economic upheavals. While the economy rebuilt from pandemic levels, this smart lending approach managed to produce a steady NPL ratio.

But by mid-2023 the NPL ratio began to rise once more, reaching 1.3% in Q3 and then 1.4% by year's end. Rising interest rates, inflationary pressures, and the economic uncertainty that accompanied the Federal Reserve's more austere monetary policy to control inflation most probably caused the spike. Rising rates have an impact on borrowers more particularly those with variable-rate loans since their monthly payments change. Particularly in some industries, the post-pandemic recovery intensified issues like personnel shortages and disruptions of supply networks. A slight increase in non-performing loans might be explained by the economic difficulties; some borrowers found it unable to meet their obligations at a high interest rate.

Resilience in the face of hitherto unheard-of economic upheaval typified the era from 2020 to 2023, then came a slow normalization as relief efforts linked to the epidemic faded down. Preventing a substantial increase in NPLs at the height of the epidemic was mostly dependent on the quick governmental reactions and assistance initiatives. Strong regulatory control and economic recovery had beneficial results shown in the slow drop in the NPL percentage between

2021 and 2022. Nonetheless, the little rise in 2023 underscores the continuous weaknesses in the financial system as it adapts to a post-pandemic reality defined by inflationary pressures and rising interest rates. This time frame underlined the need of flexible monetary and fiscal policy in reducing economic shocks and preserving banking sector stability.

2.2 Economic Impact of NPLs

2.2.1 Impact of NPLs on Banking Sector Stability

An important topic in the literature on financial stability and risk management is the effect of non-performing loans (NPLs) on banking sector stability. High NPL rates may be both a sign and a cause of financial difficulty in the banking industry, Saba, Kouser, and Azeem (2012) underline. Their study emphasizes that a growth in NPLs usually indicates the failure of lending policies, therefore undermining bank profitability by lowering revenues and raising provisioning costs for possible loan losses. One well-known example is the financial crisis of the late 2000s, in which defaults on loans and mortgages caused spikes in NPLs throughout the American banking industry, therefore drastically lowering banks' profitability and seriously compromising banking stability. Low repayment capacity of borrowers, generally associated with economic circumstances like high interest rates, low per capita income, and, most importantly, too liberal lending rules, Saba et al. contend increases this effect. Managing NPLs becomes so crucial for preserving a healthy banking industry as unbridled increases in NPLs can erode the capital base of banks, therefore compromising their capacity as middlemen in the financial system.

Building on this point of view, Ghosh (2015, 2017) shows how NPLs affect bank stability holistically. According to his studies, NPLs expose banks to more credit risk, disturb lending activities, and weaken their capacity to effectively allocate funds between depositors and borrowers as they grow. Ghosh underlines that high NPL levels compromise the integrity of bank assets, therefore generating major economic expenses. Particularly noticeable is the cyclical link between NPLs and economic crises as economic stress raises NPLs, therefore weakening the financial system and producing a feedback cycle of vulnerability. His results show that NPLs are a major gauge of bank distress; where high loan defaults and foreclosures have wider effects on credit availability and, thus, economic development, Ghosh also investigates how sector-specific NPLs—such as those pertaining to commercial and industrial loans, consumer loans, and real estate—have special effects on corresponding sectors, therefore highlighting the direct relationship between NPLs in the banking sector and the performance of actual economic activity.

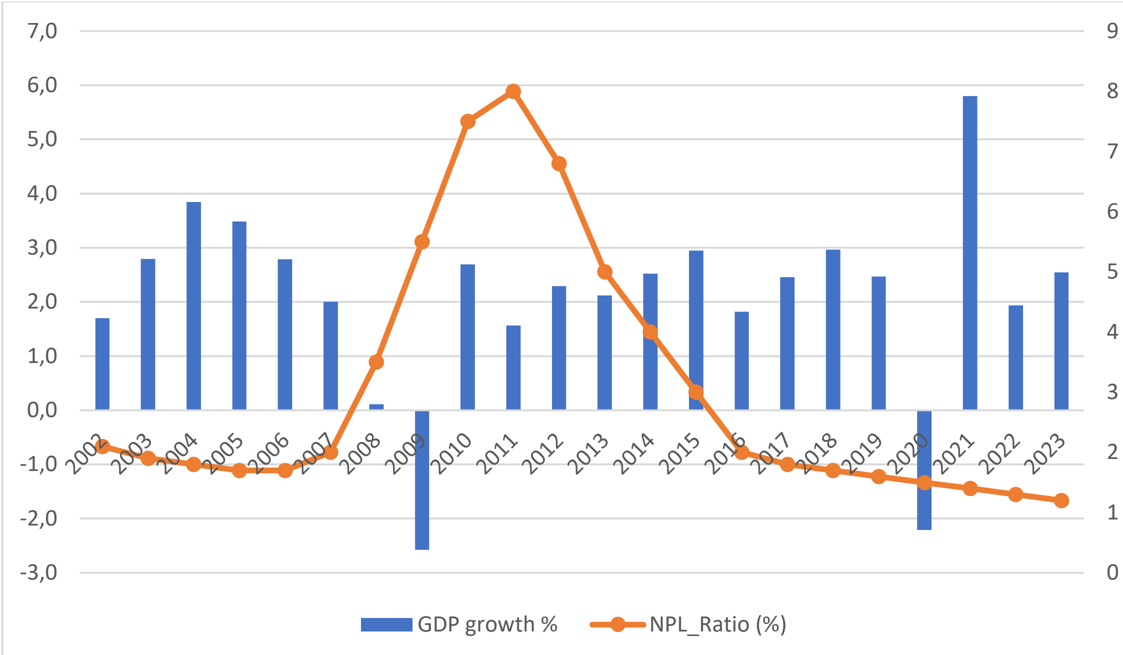
In a same line, Ghosh (2017) shows the negative consequences of NPLs on the labor and product markets using a sectorial approach. His study shows that high NPL levels restrict banks' ability to provide credit, therefore influencing the actual economy. More specifically, he discovers that declining job growth—especially in the manufacturing and construction sectors—corfits rises in NPLs. Ghosh shows via vector auto regression (VAR) methods that shocks to NPL levels—especially in the real estate and commercial sectors—have long-lasting consequences on GDP growth and employment. This helps to underline that NPLs are an economic disruptor rather than only a financial indicator as they can limit companies' operating capacity and access to required funding in recessionary times. The continuation of such NPL shocks suggests that substantial NPL-induced banking instability might seriously postpone economic recovery and increase the negative consequences of a financial crisis.

Campbell's (2007) research supports the perspective that NPLs directly affect bank solvency and stability, therefore tying them to the issue of bank insolvency. He underlines how controlling NPLs and stopping their growth depend on regulatory and supervising systems. Campbell contends that poor internal control and risk management strategies result in increased NPL rates, therefore exposing banks to more insolvency susceptibility. His research emphasizes how important sensible financial supervision and regulatory control are to keeping the banking sector stable. Campbell claims that as banks involved in risky lending without appropriate protections are more likely to be unstable and fail, regulatory systems emphasizing on lowering NPLs are very essential in averting financial crises. Campbell also advises that by purchasing distressed assets, Asset Management Companies (AMCs) can help to control NPLs during a crisis; nevertheless, he issues a warning: these actions should not be considered as a long-term fix. He cautions that depending too much on AMCs might lead to moral risks as banks could expect outside help and hence neglect to sufficiently manage risk in their portfolios. Moreover, the literature underlines how much NPL levels depend on local economic conditions and how these affect banks stability. Ghosh (2015) investigates the relationship between regional banking and economic circumstances, showing that states with significant decreases in home values or high unemployment typically have high NPL rates. This geographical variation emphasizes the need of bank stress tests and other macro prudential regulations in regard to state-specific economic considerations while evaluating financial stability. Ghosh's results confirm the theory that sustaining low NPL rates and, thus, a stable banking system depends on both national and state levels of economic health being vital. According to him, regulatory agencies should consider these regional differences in order to use sensible NPL management strategies that fit local economic circumstances as this would help to reduce the systematic risks connected with regional economic crises. These studies taken together show that high NPL levels seriously jeopardize the viability of the banking industry by lowering profitability, raising provisioning needs, and therefore limiting banks' lending capability. The results highlight the need of NPL management not just for the financial soundness of particular banks but also for more general economic stability. NPLs lower banks' capacity to absorb economic shocks and react to new lending prospects by changing their balance sheets and credit quality. Effective regulatory actions, including frequent stress tests, strict credit evaluation criteria, and capital buffers, are also suggested by the research to be absolutely crucial in reducing the destabilizing impact of NPLs. Strategies often advised to keep financial stability in the face of increasing NPLs are ensuring high loan quality, enhancing risk assessment, and applying strong regulatory control.

2.2.2 Effects of NPLs on Economic Growth in USA

Particularly when looking at how changes in NPL ratios impact the stability and advancement of GDP development, the link between non-performing loans (NPLs) and economic growth in the United States is a vital field of research. While drops in NPL ratios have typically accompanied periods of economic growth, historically periods of high NPL ratios have linked with economic crises. Rising NPLs limit banks' lending capacity, lower profitability, and raise provisioning costs—all of which together impede economic activity and growth—so highlighting the effect of credit quality on the larger economy.

Figure 8. Cross comparison of NPL ratio and economic growth



Source: WorldBank and Ceicdata 2023

Starting to recover from the 2001 recession in 2002, the U.S. economy had a GDP growth rate of 1.7%; the NPL ratio stood at 2.1%. This meagre economic progress was sustained over the next several years; GDP growth peaked in 2004 at 3.8% following increases to 2.8% in 2003.

The NPL ratio dropped throughout this time; it peaked at 1.8% in 2004 then dropped to 1.7% between 2005 and 2006. This drop in NPLs most certainly reflects the good economic times—low unemployment, steady income growth, and a rising house market. The low NPL ratio during these years helped banks to have good loan portfolios, therefore promoting a virtuous cycle whereby better credit conditions encouraged further economic development.

But the NPL percentage continued to climb as the property market started to show indications of pressure in 2007, rising to 2.0%. GDP growth down to 2.0% plainly was beginning to provoke economic turbulence. With the NPL ratio skyrocketing to 3.5% and GDP growth almost halted at 0.1%, the financial crisis of 2008 signaled a drastic turn around. Starting substantial loan defaults and foreclosures, the fall of the subprime mortgage market helps to explain the rise in NPLs in 2008.

Bad debt-ridden banks were obliged to tighten lending criteria, which resulted in a credit bottleneck adversely affecting economic growth. One of the most severe recessions in modern

American history, the NPL ratio fell shockingly to 5.5% in 2009 as the GDP shrank by 2.6%. The high NPL ratio during this era illustrates the great suffering in the banking industry, which was unable to properly provide credit to the economy, therefore aggravating the slump.

GDP growth returning to 2.7% in 2010 and the NPL percentage peaked at 7.5% as banks sorted through their troubled assets marked a slow recovery following the crisis. While the NPL ratio stayed high at 8% suggesting the residual impact of the crisis on both the banking sector and the actual economy, GDP growth slowed somewhat to 1.6% by 2011. The NPL ratio started a consistent slide in 2012 and dropped to 6.8% as economic development picked up to 2.3%. This era emphasizes the protracted recovery of the banking industry, in which high NPL levels persisted in burdening financial institutions, therefore restricting their capacity to lend and invest even in the bettering economic situation.

While GDP growth settled at 2–3%, the NPL ratio kept declining as the economic recovery got steam, hitting 5% in 2013 and 4% in 2014. The NPL ratio dropped to 3% by 2015, in line with 2.9% GDP growth rate. As banks cleaned their balance sheets and could more freely increase credit, this era of consistent economic growth and diminishing NPLs indicates the slow comeback of financial stability. By improving banks' profitability and capital buffers, which let them sustain corporate and consumer lending, the drop in NPLs during this era most certainly helped to drive more robust economic growth.

The NPL ratio dropped yet further to 2% in 2016, while GDP growth was positive at 1.8%. The NPL ratio dropped to 1.8% by 2017 while GDP growth hit 2.5%. This inverse link between the NPL ratio and GDP growth emphasizes the need of credit quality in helping economic development as lower NPL levels enable banks to employ resources more efficiently and lessen the danger of financial disturbances.

Reflecting a period of economic stability and solid financial health in the banking sector, GDP growth was stable at 2.5%; the NPL ratio kept dropping through 2019 to reach 1.6%.

Starting in 2020, the COVID-19 outbreak brought about a serious economic crisis; the GDP fell 2.2% while the NPL percentage reduced considerably to 1.5%. Unprecedented government intervention—including stimulus packages, loan forbearance programs, and low-interest rate policies of the Federal Reserve—allows this drop in NPLs despite the economic crisis to be explained. These actions offered debtors some relief and halted a loan default boom. The NPL ratio fell further more to 1.4% while the GDP rebounded at 5.8%.

This decrease indicates the encouraging financial and monetary measures that enabled borrowers to negotiate the obstacles of the epidemic, therefore preserving loan quality even as the economic shock developed.

While GDP growth normalized to 1.9%, the NPL ratio kept declining by 2022 to reach 1.3%. This stability in NPL figures highlights how strong the banking sector is in absorbing financial impact of the epidemic. Along with 2.5% GDP rise, the NPL ratio somewhat rose to 1.2% in 2023. This slight increase in NPLs might be explained by rising inflation, stricter monetary policy, and the gradual phasing-out of government support programs—which put extra pressure on borrowers, particularly those with variable-rate loans.

The United States' NPL rates and GDP growth link emphasizes generally the significant impact of credit quality on economic success. Particularly during the financial crisis of 2008, large NPL levels reduced banks' lending ability, therefore leading to severe economic contraction. Conversely, low NPL ratios—as shown in the pre-pandemic period and in post-crisis recovery—supported economic development by raising bank profitability and thus loan flow. The COVID-19 era made abundantly evident how government action may help to avert a financial crisis and briefly stabilize NPL ratios. Therefore, low NPL levels are necessary for continuous economic development as they enable the banking sector to run properly and provide the necessary support for businesses and individuals in both stable and turbulent economic periods.

CHAPTER 3: NPLS IN THE CONTEXT OF THE EU BANKING SECTOR

3.1 Analyzing the trends of NPLs in the EU from 2002 to 2023

Non-performing loans (NPLs), which are intimately related to the larger economic cycle and the structural complexity of the banking environment, have presented major difficulties for the European Union's banking industry. High levels of NPLs influence both systematic and non-systemic banks in Europe; the consequences differ depending on the systemic importance of each bank. Global Systemically Important Banks (GSIBs) are those whose size, connectivity, and complexity make them indispensable for the stability of the financial system. Conversely, non-systemic banks are usually smaller and less linked inside the global financial system, although they are nonetheless greatly impacted by national economic situation.

High NPL levels have caused worries among EU officials as they indicate underlying hazards to financial stability and could compromise the function of the banking industry in promoting economic development (Ozili, 2020). Mostly coming from the aftermath of the global financial crisis and later sovereign debt crises, the buildup of NPLs has shown fundamental flaws in EU banks including legal, regulatory, and operational problems preventing quick resolution of bad loans. More than twice the level in 2009, NPLs in the EU in 2014 amounted to around €1 trillion, or over 9% of the EU's GDP. The extent of these bad loans exposes not only the negative effects of economic crises but also the shortcomings in the current debt restructuring systems and prudential control across Europe.

The consequences are significant when systematic banks deal with big NPLs as the possibility of a ripple impact across other linked institutions becomes more evident (Ozili, 2020). NPL losses compromise bank profitability, diminish capital, and—in severe cases—threatend viability. Although the systemic risk may be less for non-systemic banks, excessive NPLs can nevertheless cause local markets to be unstable, restrict loan availability, and impede regional economic growth. In response, systematic banks may ask for regulatory forbearance so they may have more time to handle NPL problems free from direct effects on capital availability. The European strategy to handle NPLs depends on knowing the elements causing their accumulation in both non-systemic and systemic banks (Ozili, 2020).

Previous studies indicate that NPL accumulation is influenced by characteristics like loan growth patterns, regulatory capital ratios, and economic cycles. These elements could, however, influence both systematic and non-systemic banks differently. For instance, especially in times of economic uncertainty, systematic banks often have better regulatory capital levels as a preventive measure against possible NPL increase. Non-systemic banks, on the other hand, are more susceptible to changes in loan quality even if they might run nearer the regulatory minimums. Therefore, the EU's strategy to mitigate NPL risks should address the unique vulnerabilities of both bank types, stressing macroprudential measures for systemic banks and targeted support for non-systemic banks, so fostering a resilient banking sector able to sustain economic growth (Ozili, 2020).

Since the global financial crisis, non-performing loans (NPLs) have presented ongoing difficulties for the Central and Eastern European (CEE) area, burdening the banking industry with large numbers of bad loans. Countries in the CEE region—especially those dependent on a fast growing banking industry to drive economic development—saw an unexpected and dramatic stop in loan expansion in 2008. A mix of decreased loan demand and rising reluctance among European banks to lend—as they aimed to reduce risk amidst the economic crisis—driven this sudden change. High NPL levels are a major problem as earlier financial crises have proven that significant recovery calls for a complete cleaning-up of troubled banking assets.

Unresolved NPLs not only throw doubt on the viability of banks but also compromise their capacity and desire to lend, therefore influencing general demand and total investment level. The effects are particularly clear in the CEE area, where resources locked up in non-productive industries and overstretched debtors have slowed down economic recovery following the financial crisis. The crisis had such significant effects that, by 2009, every one of the seven CEE nations under analysis had negative real GDP growth rates; Latvia's economy was declining by a startling 17.7%. Notwithstanding initiatives by both regulatory authorities and the banking industry to solve the problem, NPL levels in the CEE area have stayed high, especially in relation to the more developed Western European countries.

By the end of 2011, the NPL ratios in Bulgaria, Romania, Latvia, and Croatia had, at rates of 16.87%, 14.3%, 17.23%, and 12.27% correspondingly, quite remarkable values. These high percentages highlight the geographical variations in NPL burdens as advanced European nations have often maintained NPL ratios below 5% over the same period. This disparity highlights the contrasting legal and economic conditions Western Europe and the CEE area have where characteristics like weaker institutional frameworks, lower financial buffers, and more irregular economic cycles worsen the NPL persistence. The CEE region's special challenges also stem from its reliance on bank-based financing, which increases these countries' sensitivity to fluctuations in the credit availability (Skarica, 2014). After the global financial crisis, European banks had a substantial inventory of non-performing loans (NPLs), which greatly impeded the recovery of credit availability in the economy. High levels of NPLs might restrict banks' capacity to lend as these non-performing assets offer lower yields, demand major provisioning, and occupy a large share of administrative resources. This lessens banks' focus on new lending and innovation, thus transferring attention to loan administration and so hindering efficiency and opportunities for development (Serrano, 2021).

As they stay on balance sheets, these loans generate a negative feedback loop that limits the credit available for viable businesses and therefore reduces financial stability, so impeding economic recovery. Unresolved NPLs so prevent banks from fundamentally fulfilling their role as intermediaries in the financial system, thereby lowering overall demand, investment, and general economic development (Serrano, 2021). Large NPLs have more widespread macroeconomic effects as they are connected to slower GDP growth, reduced production, and rising unemployment.

Beyond the banking sector, NPLs have detrimental effects on the business sector as they support non-viable businesses and lock resources in ineffective usage. Often referred to as "zombie lending," this trend arises when banks continue lending to financially struggling companies rather than reporting losses, largely to reduce the capital load linked with NPL write-offs. As banks increase interest rates to cover the increased risk their less solid balance sheets create, financially strong businesses pay more for borrowing and have less access to credit (Serrano, 2021). This climate depresses general economic performance, limits the prospects for expansion, and results in a competitive disadvantage for legitimate enterprises while capital is still inadequate for more lucrative, growth-oriented companies (Serrano, 2021).

Now addressing the NPL issue in Europe top priority is legislators and authorities realizing the necessity to accelerate NPL resolution to restore the health and guarantee continuous economic development. As Japan's experience in the 1990s reveals, slow NPL resolution—that is, the inability of the banking industry to effectively allocate credit—has demonstrated that residual NPLs can cause protracted economic stagnation. European policy makers have discussed whether to clean balance sheets and allow banks to devote resources towards lending operations by using quick NPL disposals—through sales to asset management firms or pure write-offs. This discussion emphasizes the trade-off between the immediate capital effect of NPL disposals on banks (Serrano, 2021) and the long-term advantages of a stronger, more efficient banking sector able to support economic development.

Furthermore, the dynamics of NPL reduction help one to grasp the pace with which a bank might restore lending capability. Evidence points to banks most suited to boost lending to the real sector those more quickly reducing NPL levels. This is so because a fast fall in NPLs releases capital, lowers need for provisioning, and increases profitability, thereby allowing banks to concentrate on new, profitable loans rather than addressing old issue loans. The favorable effects of NPL decrease on bank lending underline the need of government initiatives meant to inspire banks to control NPLs quickly. Delayed action, on the other hand, might result in a situation whereby banks with large NPL portfolios remain undercapitalized and hesitant to lend, hence extending economic stagnation and restrictions on job creation, investment, and growth (Serrano, 2021).

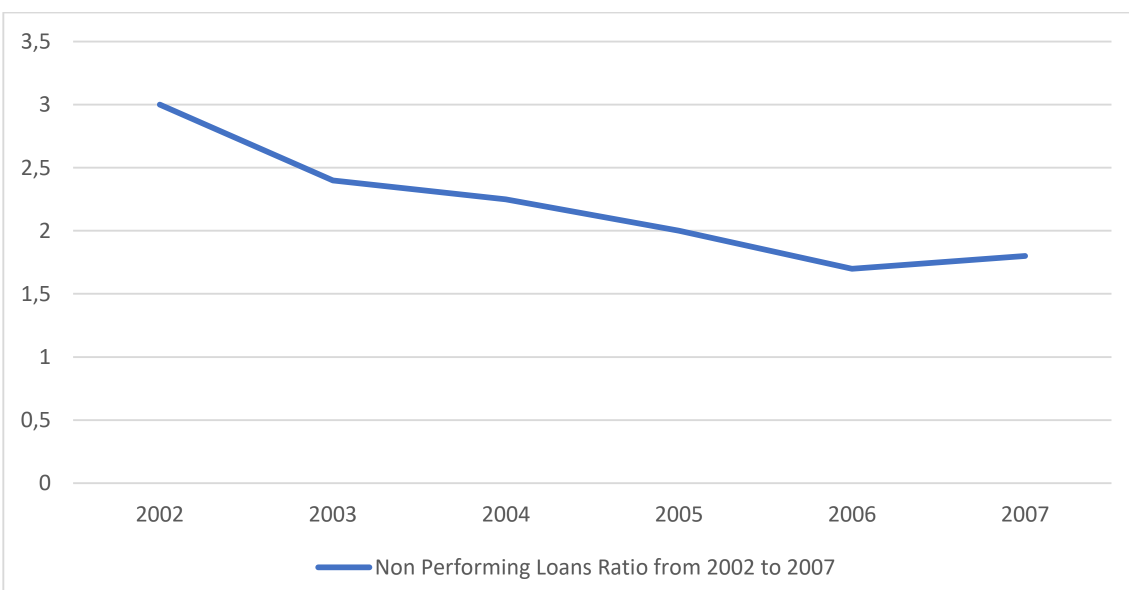
By restricting banks' capacity to lend at fair rates, therefore impeding the regular increase in economic activity, high NPL levels fundamentally interfere with the flow of monetary policy. In a low-interest-rate environment specifically, this is concerning as central banks rely on banks to convey lowered rates to consumers. High NPL percentages, however, might force banks to cut lending or raise interest rates to lower their risk exposure, therefore lessening the effectiveness of monetary policy projects aimed to increase development. Fast NPL resolution guarantees that credit flows naturally to the actual economy by enhancing the efficacy of monetary policy and so aids financial stability. Ultimately, the relationship between NPLs and bank lending highlights the need of a calculated approach for NPL resolution.

Although adopting strict standards for NPL disposals might momentarily strain banks' capital positions, the long-term benefits of a cleaner banking sector—characterized by improved lending capacity, stronger financial stability, and faster economic growth—far surpass the first expenditures. Policymakers and authorities thus have to consider both the speed and method of NPL resolution to minimize any negative implications on bank solvency and assure that the resolution process supports a stable, well-capitalized, and robust banking industry.

3.2 Early 2000s: Before crisis Period

Non-performing loans (NPLs) in Central, Eastern, and Southeastern Europe (CESEE) stayed rather low between 2002 and 2007; NPL rates towards the conclusion of this period averaged slightly around 3%. Robust economic development, strong real GDP growth rates, and better labour market conditions all throughout the area helped to create this favorable climate. Borrowers' income stability grew as the economy grew, therefore lowering the possibility of loan default. Furthermore, a very stable macroeconomic climate helped borrowers to better pay their debt, hence reducing the bad loan accumulation on bank balance sheets (Klein, 2013). Stronger banking rules and improved supervising systems during this time of expansion supported cautious lending practices. Banks kept better balance sheets, and many of them were wary about too rapid loan growth, which helped to keep asset quality quite constant. This cautious approach reduced loan delinquency risks, hence supporting the low NPL rates (Klein, 2013). NPL percentages were also under control in part by bank-specific elements. To try to offset credit risk, several CESEE banks had strong capital buffers and sufficient reserves for possible loan losses. Measured by return on equity, profitability was favorably correlated with sound loan portfolios, implying that well-managed banks with sensible lending policies were better able to preserve lower NPL levels. Furthermore, high equity-to---asset ratios reduced the "moral hazard" impact, wherein banks with less capital could otherwise engage in too risky behaviour to increase profits, thereby maybe leading to more loan delinquencies (Klein, 2013).

Figure 9. Non-Performing Loans Ratio from 2002 to 2007



Source: Federal Reserve Bank of St. Louis 2023

From 2002 to 2007, EU data on the Non-Performing Loans (NPL) percentage amply shows a trend of asset quality improvement in the banking sector. With banks using more effective credit risk management strategies and economic conditions improving, the NPL ratio gradually fell over years from a quite high level of 3% in 2002. By 2003 the NPL ratio dropped to 2.4%; it then kept down in following years to reach 2.25% in 2004 and 2% in 2005. This fall correlates with a period of economic stability and EU expansion, which increased income levels and employment rates and therefore improved borrower capacity to repay their debts. With the NPL ratio of 1.7%, 2006 was the lowest point in the century, thereby suggesting a clear improvement in loan performance across European banks. Consistent GDP growth and steady interest rates—which maintained financial stability—probably contributed to support this autumn by means of good macroeconomic circumstances. But in 2007 the NPL proportion somewhat increased to 1.8%, suggesting early signs of credit risk pressure in various sectors. Rising pressures in the global financial industry, which started to influence some borrowers—especially those with higher debt or exposure to more erratic markets—may have been the reason of this slight increase. This little rise in 2007 marked the end of a period of exceptional financial stability for EU institutions and predicted the credit flaws that would fully show themselves during the financial crisis of 2008.

3.3 The financial crisis of 2008 and Post-crisis recovery

Between 2008 and 2019 non-performing loans (NPLs) disproportionately impacting the EU banking sector weighed significantly on loan growth as well as the more general economic recovery following the global financial crisis. Many European banks have notable NPLs from the crisis; early 2010s saw these figures peak at around €1 trillion (Tölö & Virén, 2021). Especially in Southern European countries, the severe economic crisis leading to many defaults produced the high NPL levels. This build-up of NPLs restricted economic growth, impeded banks' ability to lend, and became a main concern for EU legislators (Staehr & Uusküla, 2021).

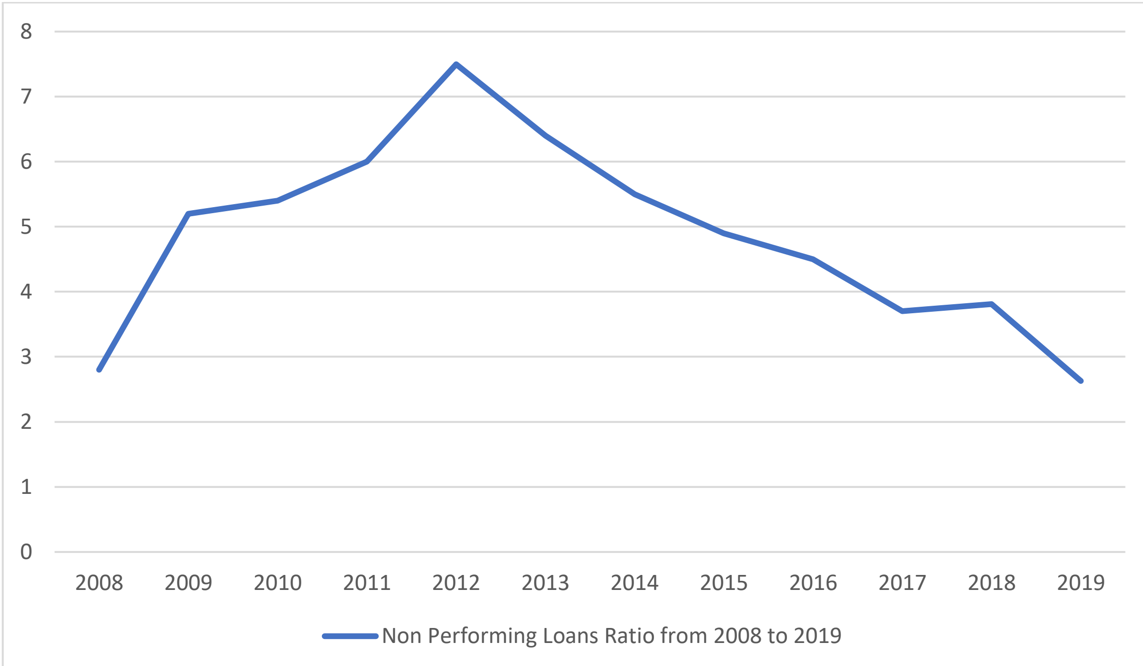
The average NPL ratio in the Eurozone, where it reached about 10% over the 2014–2018 period, much above the 0.9% recorded in other affluent countries, therefore the economic consequences from the financial crisis were more obvious in the Eurozone (Tölö & Virén, 2021). Lee et al. (2020) assert NPLs are the major indicator of banks suffering with large ratios linked with weakening financial stability and slower economic development. In the years following the crisis, high NPL rates were a barrier to financial intermediation as banks laden with bad loans were less able to provide new credit, therefore lowering investment and consumption. Concerned about the impact of high NPLs on economic growth, Mario Draghi, the president of the ECB and other EU officials underlined structural flaws in the banking sector including poor governance and ineffective debt recovery policies, so slowing the resolution of NPLs and so hindering economic recovery. Draghi, 2017; EU Commission, 2017).

Macroeconomically, Staehr and Uusküla (2021) observed that high NPL rates drain on economic development largely by way of reduced bank lending. Research indicates that NPLs directly reduce bank profitability, therefore limiting banks' capability to maintain suitable capital buffers (Apergis, 2022). This cycle of declining profitability and constrained lending compounded the sluggish recovery noted throughout most of Europe. Underlining the clear correlation between high NPL rates and restricted credit availability, Tölö and Virén (2021) found that a one-percentage point shift in the NPL ratio might cause a 0.08% drop in quarterly loan growth. Moreover, the increasing NPL percentages led banks to tighten lending standards, which made it more challenging for businesses—especially small and medium-sized businesses (SMEs)—to get the capital needed to support growth (Jimenez et al., 2012).

As Makri et al. (2014) have shown, the enormous number of NPLs inside European banks also offered systemic risks. Acting as a financial pollutant, NPLs compromise bank balance sheets and increase the risk of a banking disaster. Apart from affecting loan growth, large NPL percentages reduced banks' capital by means of increased provisions for loan losses, therefore limiting their potential to fight future shocks. In 2015 Aiyar et al. examined the three channels—capital adequacy, profitability, and funding costs—by which NPLs influence banks. Lower profitability results from NPLs using less interest income and increased reserves for losses. These components serve to reduce capital adequacy ratios, which increases bank financing costs when they undertake more riskier investments. This cycle made lending difficult for banks, therefore impeding national economic recovery in countries with high NPLs.

Reacting to these issues, EU authorities implement measures aimed to reduce NPLs and restore stability in the banking sector by means of action. To standardize NPL resolution among member states, the European Banking Authority (EBA) published guidelines for banks to put aside provisions for problematic loans and to adopt similar classifications of NPLs. Stress tests the ECB also conducted to assess the resilience of banks with high NPL percentages assisted banks to improve their risk managing methods (Tölö & Virén, 2021). Moreover, efforts meant to establish secondary markets for NPLs allow banks to sell troubled assets to specialist businesses, therefore cleaning their balance sheets. Apergis (2022) claims that these policies were absolutely vital in reducing systemic risk and promoting a more homogeneous financial environment inside the EU.

Figure 10. Non-Performing Loans Ratio from 2008 to 2019



Source: Statista.com 2023

The European Union's (EU) non-performing loans (NPL) percentage reveals the effects of policy responses during the worldwide financial crisis as well as economic fluctuations between 2008 and 2019. Over this period, the ratio of NPLs changed significantly; it rose in the early crisis years then progressively dropped as economic stability began to recover. With a rather low NPL rate of 2.8% in 2008, the EU was showing a fair level of non-performance loans in the banking sector. But the financial crisis beginning in the United States in 2007 had spread globally by 2008, and the EU suffered greatly. Banks all throughout Europe began to experience rising loan defaults as businesses and individuals fought lower income and increasing economic uncertainty. The NPL percentage increased more than two-fold in 2009, rising to 5.2% as the recession substantially reduced loan repayability.

The surge in 2009 captures the instantaneous effects of the economic crisis, which caused general financial instability and increased credit risk inside European banks.

The NPL ratio in the EU continued its upward trend in 2010, albeit slowing down to 5.4%. Though the economic crisis had started to level off, especially in the more weak economies of the

Eurozone, the recovery was gradual and brittle. While companies suffered declining demand, therefore affecting their financial stability, many EU nations were still struggling with high unemployment rates, which reduced the capacity of people to satisfy loan repayments. The NPL percentage had climbed to 6% by 2011 as the EU's economic recovery lagged and more problems arose. The European sovereign debt crisis, which started in late 2009 and become more severe in following years, taxed EU banks especially. Countries with major financial difficulties as Greece, Ireland, and Portugal saw bailouts and extreme austerity policies. As companies battled to survive in an environment of lower government investment and weakening consumer demand, the accompanying economic decline in these nations further heightened loan defaults. Consequently, banks all throughout the EU saw themselves saddled with an increasing inventory of non-performing loans, a direct effect of the declining economic situation in several EU members.

2012 saw the highest EU NPL ratio, at 7.5%. This sudden rise captures the height of the economic difficulties the EU had during the sovereign debt crisis. By now the austerity policies carried out in many EU nations had resulted in notable declines in public sector employment and cuts in social spending, therefore undermining recovery and depressing economic development. Given that banks were saddled with significant volumes of non-performing loans endangering financial stability, the high NPL ratio in 2012 highlights the extreme pressure on the EU's banking industry. The continuation of high NPL ratios during this time underlines the intimate relationship between credit quality and economic growth since improving macroeconomic conditions immediately affects borrowers' capacity to pay back their obligations.

The NPL percentage started to shrink in 2013, falling to 6.4%, suggesting a slow recovery of EU economic situation. This fall-off in many different ways can be explained by the stabilization of the sovereign debt crisis and the implementation of policies aimed to support the banking sector of Europe. The European Central Bank (ECB) and other EU institutions launched banking sector reforms and a banking union to aid the financial system by thus strengthening regulatory supervision. These actions reduced danger of more NPL development and helped to restore confidence in the banking sector. To improve balance sheets and reduce credit risk, several banks have begun actively managing their NPL portfolios by selling off underperforming loans. This proactive approach to deal with NPLs helped to clarify the modest decline in the NPL ratio observed in succeeding years.

2014 witnessed the continuation of its declining tendency with the NPL ratio down to 5.5%. This drop represents the result of improved EU economic conditions because several members came back to exhibit good economic development. Low interest rates and asset purchase programs in the ECB's accommodative monetary policy helped to encourage lending and investment, therefore boosting economic recovery.

Businesses and homes grew more financially solid as economic times got better, hence lowering the count of fresh loan defaults. The declining NPL percentage also demonstrates the increasing efforts by EU banks to clean their balance sheets as they used advantageous market circumstances to sell problematic loans and raise the asset quality. Proactive NPL management along with economic recovery helped to reduce some of the strain on the banking industry of the EU.

The NPL ratio kept its slow down in 2015 and dropped to 4.9%. Further developments in bank balance sheets and continuous economic recovery in the EU drove this decline. Stronger regulatory control helped the EU banking industry; the ECB established the Single Supervisory Mechanism (SSM), therefore benefiting this sector. By offering a more unified method of financial oversight, the SSM helped to find and fix weaknesses in the banking industry. Targeted long-term refinancing activities (TLTROs) by the ECB also gave banks low-cost borrowing so they may improve their capital positions and lessen their reliance on high-risk assets. Improved regulatory control, economic recovery, and favorable monetary policy taken together helped the NPL ratio to keep declining.

As the EU's economic recovery gathered steam in 2016, the NPL percentage dropped yet more to 4.5%. By now the ECB's monetary policy had effectively reduced borrowing rates, therefore enabling more lending and investment. As borrowers gained from more income levels and more financial stability, the better economic conditions helped to lower the flow of fresh non-performing loans. Furthermore demonstrating the continuous efforts EU banks undertake to manage their NPL portfolios is the decline in the NPL ratio throughout this time. Several banks created strategies to sharply reduce their NPL inventory using loan sales, write-offs, and restructuring. These actions improved asset quality and assist to reduce credit risk, therefore strengthening the banking sector. The proactive approach of the EU to fix NPLs lowered the risks connected to too high bad loans, thereby helping the general stability of the financial system.

Reflecting the continuous economic recovery as well as the continuous efforts by EU banks to resolve non-performing loans, the NPL ratio dropped to 3.7% in 2017. Higher employment rates and more consumer spending resulting from better economic times help debtors to be able to pay back their obligations. EU banks also maintained improving their balance sheets by reducing their exposure to high-risk assets. ECB stress tests and asset quality evaluations opened the banking sector and restored confidence by means of which investment was inspired. The decline in the NPL rate in 2017 underlines how well EU policies aimed to boost financial stability and support economic growth work. By means of slow recovery from the crisis years by the banking sector, systemic risks were reduced and resilience against more economic shocks was enhanced. Approved in 2017, the "Action Plan to Tackle Non-Performing Loans in Europe," reflects the European Union's strategic approach to address this issue.

Emphasizing risk management, enhancing debt recovery tactics to adequately address large NPL percentages, and boosting secondary markets for distressed assets, this all-encompassing strategy focusses Two examples of legislative systems applied to try to increase NPL coverage rates are more prudent backstops and minimum loan loss clauses. These rules demand enough loan loss reserves for freshly issued loans that can subsequently become non-performance-oriented, therefore ensuring that banks are more suited to manage credit losses. These steps not only help banks' financial status but also enable a more proactive strategy to handle NPLs, hence increasing economic resilience and stability all throughout the EU.

The building of a Union-wide NPL transaction platform also aims to ease the trading of NPLs, hence enhancing market efficiency and enabling banks to reduce their NPL holdings (Grasmann et al., 2019).

In 2018 the NPL ratio increased marginally to reach 3.81%. Among the several elements for this little increase might be rising economic worry about political unrest inside the EU and trade conflicts between several nations. The NPL rate stays rather low despite a little rise, which suggests the general longevity of the European banking industry. The little rise in the NPL rate underscores the continuous difficulties the European banking industry faces considering geopolitical concerns and outside economic pressure. Still, the NPL percentage was significantly below the highest rates seen in past years, implying that EU initiatives to deal with NPLs had been basically ineffective. Reflecting various national economic conditions and post-crisis recovery paths, the non-performing loan (NPL) coverage ratios in European banks highlight substantial variation between member states. Nowadays, provisions account for around 46% of the NPL stock; future recoveries should pay the remaining balance. This partial provisioning underlines both advances and continuous challenges for the European banking sector especially in nations where high NPL levels remain constitute a major concern. The European Central Bank (ECB) has heavily promoted stricter supervision requirements and promoting risk management approaches to better position banks against the anticipated financial instability NPLs might bring (Ciukaj & Kil, 2020).

Pre-crisis levels have been rebuilt with the NPL proportion decreased to 2.63% by 2019. This low number indicates that the EU banking sector has mostly fixed the non-performing loan-related issues, therefore obtaining a degree of stability and resilience absent in the crisis years. Supported by solid economic conditions and strict regulatory oversight, the low NPL ratio in 2019 shows the ongoing efforts of EU banks to improve asset quality. Underlining the success of the EU's all-encompassing plan to tackle financial stability issues and stimulate economic recovery, the decline in the NPL ratio to its lowest point in more than ten years.

The EU's dedication to lowering NPLs helped to rebuild trust in the banking industry, therefore allowing banks to serve the actual economy by means of credit. The low NPL ratio in 2019 shows how well the EU's policy reaction to the financial crisis works, which will help the banking industry to more resist upcoming economic difficulties.

Assessing the resilience of European banks against credit losses depends critically on the coverage ratio, which is the ratio of loan loss reserves (LLRs) over non-performing loans (NPLs). Higher ratios imply more financial stability; coverage ratios show the cushion banks keep to mitigate any NPL losses. NPLs surged during the global financial crisis and later sovereign debt crises, peaked close to 8% of the GDP for European banks. This increase forced banks to create more reserves, which led to regulatory authorities stressing improved provisioning rules to protect financial stability (Alessi et al., 2021).

Coverage ratios help banks to absorb predicted losses from declining assets without compromising their capital, so maintaining their capacity to lend and so promote economic stability. Lower coverage ratio banks, however, are nonetheless more vulnerable to financial instability during recessionary times as they lack enough reserves to manage significant loan losses. European authorities developed policies including the IFRS 9 accounting rules throughout time that call for forward-looking clauses to guarantee banks aggressively address credit risk on their balance sheets. Aiming to harmonize coverage ratios and promote financial transparency, the European Central Bank (ECB) also has policies to standardize provisioning methods across banks (Alessi et al., 2021).

There is clear variance in coverage ratios between European nations; high-NPL countries frequently have lower percentages, which reflect different regulatory regimes and asset quality among banks. Some nations, such as those with established secondary markets for troubled debt, sometimes have greater coverage rates as they can more successfully dispose of NPLs. This regulatory and market-driven concentration on coverage ratios is meant to strengthen financial stability across Europe, therefore guiding banks through the economic uncertainty presented by events such the COVID-19 epidemic and other possible financial shocks.

3.4 Consequences of the COVID-19 pandemic for Non-performing loans

Already striving to stabilize non-performing loans (NPLs) following the global financial crisis, the COVID-19 epidemic presented hitherto unheard-of difficulties for the banking sector of the European Union. Governments took extreme action to stop the epidemic from spreading as it swept across the world, including lockdowns, social distance rules, and travel bans. Although they are necessary for public health, these limitations caused historically unprecedented economic decline. Revenue fell drastically in several sectors, especially in the service, travel, tourist, and hotel industries, which severely tested the financial soundness of companies. The financial fallout seriously interfered with debt repayment capacity, therefore raising the possibility for NPLs in banks all throughout Europe.

The COVID-19 outbreak badly damaged NPLs in the EU as the sudden cessation of economic activities hampered companies' cash flows and people's wages, therefore affecting their capacity to pay back debts. Lockdowns and restrictions sharply reduced consumer demand and investment, which started a mass of job losses and an increase in unemployment rates. Millions of jobs were affected, mainly in sectors largely dependent on physical presence; households faced reduced income; many fought debt serviceability. Along with deteriorating consumer and business confidence, this environment prepared the ground for a probable NPL increase should loan default take place. Fundamental to financial intermediation, banks were therefore caught in a challenging scenario combining financial stability risks with the need to help economic recovery (Plikas et al., 2024).

Particularly acute for small and medium-sized companies (SMEs) was the economic crisis. Usually lacking the financial strength of larger companies, SMEs were more likely to suffer unfavorable effects of the pandemic. Cowling et al. (2022) pointed out that these businesses were particularly exposed to the lockdowns and economic uncertainty of the pandemic period, which increased default risk. In service-oriented sectors including retail, travel, and hospitality, SMEs endured lengthy closures or limited operations, therefore greatly reducing turnover. Higher loan defaults resulting from this performance loss in SMEs contributed to cause NPLs in this sector to flourish. Unlike larger corporations with more resources to change operations, SMEs' inability to quickly adapt to remote or digital models raised their financial difficulty, therefore driving NPL rates up (Plikas et al., 2024). Many government and central bank initiatives were passed to help to lower the increase in NPLs in spite of the general economic crisis. Together with national governments, the European Central Bank (ECB) reacted quickly with large fiscal and monetary support to help to stabilize the economy. Regulating relief was given to financial organizations, which let them to avoid labelling loans as non-performing even if payments were missing. By giving banks and borrowers a buffer period to stabilize their finances, this regulatory flexibility helped to slow down a rise in NPLs. Government-backed loan moratoriums and credit guarantees also gave troubled debtors the option to postpone payments, therefore relieving some immediate strain on the balance sheets of banks. Especially in the early phases of the crisis, these steps were crucial in controlling the temporary effects of the epidemic and stopping an unexpected rise in NPL ratios (Plikas et al., 2024).

Programs known as quantitative easing (QE) also become very important. Central banks guaranteed credit availability and gave liquidity to help financial institutions. QE initiatives helped stabilize the banking industry by adding liquidity to the economy, therefore enabling institutions to carry on their operations and give credit to companies and people even in face of growing risk. The low interest rate environment of the ECB helped borrowers to pay their loan, therefore indirectly controlling the possible rise in NPLs. These steps were not without danger, though. Low-interest rates can compromise bank profitability, so the continuous supply of liquidity raised questions over the long-term financial health of banks.

This atmosphere forced banks to change by increasing their capital levels to prepare for potential defaults should government support programs halt and by applying rigorous risk management techniques (Plikas et al., 2024). One of the most complicated elements of the affect on EU countries is the different impact of COVID-19 on NPLs. The varied economic landscape of Europe meant that core and peripheral nations would experience somewhat different repercussions from one another from the outbreak. Reduced resilience, higher reliance on tourist and service sectors, and past economic shortcomings all contributed to the more severe consequences periphery economies—like those in Southern and Eastern Europe—faced. As businesses and people fought fewer resources and less government support than in more developed core countries, the epidemic worsened high NPL levels in these areas. Countries like Greece and Italy, for example, who already had high NPL rates before the crisis, faced added difficulties maintaining financial stability.

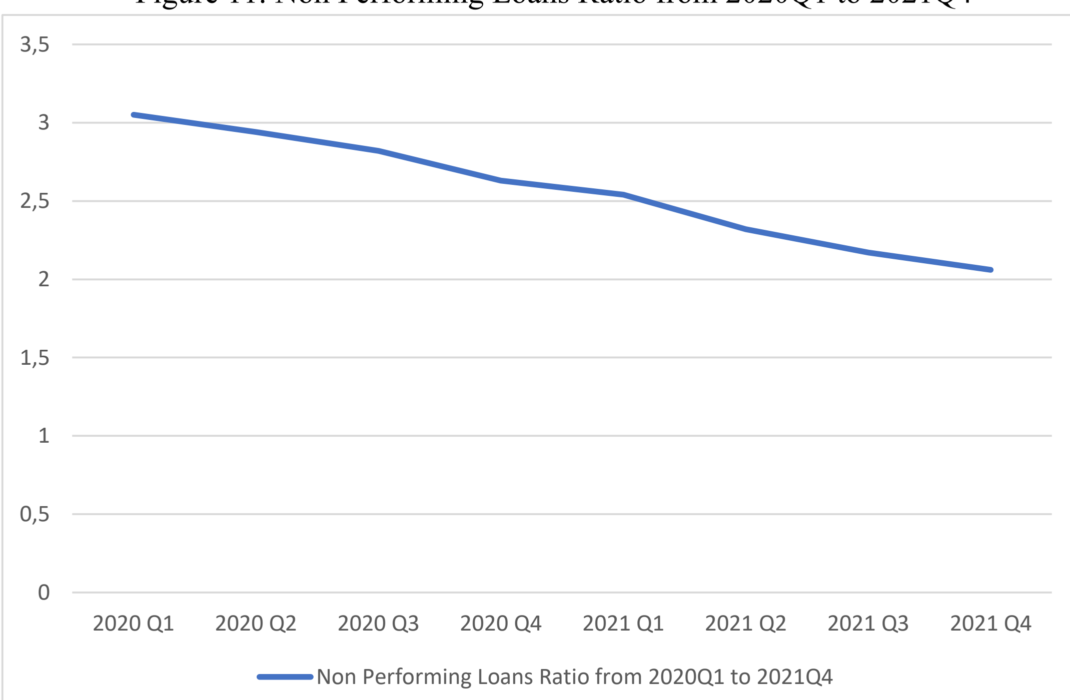
Stronger fiscal capacity and more varied economic bases let core economies like Germany better control the economic shock, hence limiting the increase of NPLs. Interesting influence of COVID-19 on NPLs in Europe also came from cultural elements. The cultural variety of European countries affected banks' risk management strategies as well as borrowers' behavior on crisis repayment. Countries with cultural norms that stress tradition and financial conservatism—like Germany—saw typically more cautious financial pledges from borrowers, which reduced default rates. On the other hand, countries with stronger entrepreneurial cultures might have had borrowers more heavily leveraged, therefore increasing their exposure to economic shocks. This cultural setting emphasizes the need of appreciating regional variations in financial stability in the EU as borrower behavior and bank risk tolerance are closely entwined with cultural norms.

Dealing with the long-term financial impacts on their balance sheets became difficult for banks as the epidemic persisted. As firms and people would once more be responsible for postponed loan payments, the ultimate phasing out of government assistance measures—including loan moratoriums—introduced the possibility of a delayed spike in NPLs. This phase of transition was full of ambiguity since the actual degree of financial difficulty among borrowers became clear only once these temporary assistance systems were taken down. Strengthening their capital buffers and doing extensive risk analyses helped banks to be ready for an influx of NPLs. Aimed to mitigate future defaults, several banks started aggressively providing for possible loan losses. But as banks directed resources into provisions instead of lending, this strategy resulted in lower profitability.

Accelerated usage of digital banking and financial technology was another major result of the COVID-19 problem; unintentionally, this affected NPL trends. Given limited physical encounters, banks turned to digital technologies to communicate with consumers and track loan repayments more and more. This change made loan monitoring more effective, which may help banks spot troubled borrowers early on and offer focused help, thereby averting some default. More flexible credit evaluation systems made possible by digital tools also enabled banks to quickly modify loan terms to meet the special difficulties of the epidemic. Although this technical change helps to control NPLs, banks have to make significant expenditures in order to relieve pressure on their already taxed financial resources.

The European banking industry is still alert in the post-COVID-19 era in handling residual NPL-related hazards. Although government actions temporarily improved NPL ratios, the medium- to long-term future is unknown. Particularly if interest rates start to rise, there is a residual concern that the EU may experience a fresh wave of NPLs given the shaky economic recovery and increasing inflationary pressures. Rising interest rates might make borrowing more expensive, therefore burdening companies and people still in epidemic recovery. In this regard, EU banks have been urged to apply tougher lending criteria and strong risk management techniques like scenario analysis and stress testing to foresee and minimise any hazards.

Figure 11. Non Performing Loans Ratio from 2020Q1 to 2021Q4



Source: Statista.com 2023

The non-performing loans (NPL) ratio in the European Union (EU) shows the resilience of the EU banking sector during the COVID-19 epidemic and reflects the impact of economic support measures applied to cushion the consequences of the crisis from the first quarter of 2020 to the fourth quarter of 2021. With a rather low level of 3.05%, the NPL ratio in the start of 2020 showed a solid banking industry following years of slow recovery from the European sovereign debt crisis and the worldwide financial crisis. But when the COVID-19 virus started to spread globally in early 2020, which raised questions about a projected rise in non-performing loans, major economic upheavals endangered the financial stability of people and companies. The first NPL ratio in the first quarter of 2020 depicts pre-pandemic economic situation in which the EU banking system was working inside a robust macroeconomic framework, with quite low credit risk.

Though the pandemic peaked in Europe and resulted in harsh lockdowns and business closures, the NPL ratio dropped drastically to 2.94% in the second quarter of 2020. The fast reaction of EU governments and central banks, who carried out a variety of relief efforts to avert an economic disaster, might help to explain this unexpected drop in NPLs. Important actions included government-guaranteed loans, loan moratoria, direct financial assistance for companies and homes impacted by the epidemic.

By helping borrowers going through temporary financial difficulties delay loan repayments, these steps served to prevent the materialization of credit risk. These policies reduced the immediate impact of the pandemic on loan performance, therefore limiting a possible rise in NPLs. The little decline in the NPL rate during this period thus reflects how well these programs support the stabilization of the banking sector and increase economic resilience.

The downward trend of the NPL ratio continued into the third quarter of 2020, then dropped yet further to 2.82%. By now several EU countries were beginning to adapt to the new realities of the pandemic; others were lowering lockdown rules and opening sectors of the economy. The sluggish recovery of economic activity helped businesses generate money and people regain financial stability, therefore reducing the loan default risk.

Moreover, the liberal monetary policy of the ECB—which comprises low interest rates and asset purchase programs—created liquidity assistance for banks, thereby enabling them to offer advantageous lending terms. The decline in the NPL ratio during this period reflects the whole influence of economic recovery coupled with continuous support from both fiscal and monetary authorities. Still, this trend should be taken close attention as the ongoing support initiatives enabled to partially hide the real degree of loan performance problems.

Despite COVID-19 cases growing once again in numerous EU countries, the NPL ratio fell even further in the fourth quarter of 2020, to 2.63%. Governments trying to control returning fresh waves of illnesses have in certain areas more rigorous lockdown measures. Still, the impact on NPLs was minimal as many countries kept supporting initiatives meant to prevent an unanticipated loan default increase. Improved regulatory supervision and higher capital positions among the structural improvements carried out in the years preceding the outbreak contribute to explain the durability of the banking sector throughout this time.

These elements gave banks the financial reserves required to resist the economic shock without appreciable increase in NPLs. Thanks in great part to concerted efforts of legislators and financial institutions, the end of 2020 signaled a time when the EU banking system effectively controlled the first effects of the pandemic.

The NPL ratio kept declining as 2021 got started, falling to 2.54% in the first quarter. Supported by the COVID-19 vaccination campaigns, which let for a more continuous reopening of economic activity, this continuous drop emphasizes the slow recovery of the EU economy. The better public health scenario helped to lower economic uncertainty, hence increasing company and consumer confidence. As their financial circumstances improved, some borrowers who had before depended on loan moratoria or other assistance tools could start making repayments. The drop in the NPL ratio over this time shows the achievement of policy actions in preventing a significant rise in credit risk during the crisis as well as the good impacts of economic recovery on loan performance.

In the second quarter of 2021 the NPL ratio dropped yet more to 2.32%. Driven by pent-up consumer demand and increasing investment, by now numerous EU nations were enjoying a strong economic recovery. Taken together, fiscal stimulus programs, flexible monetary policy, and relaxing of pandemic-related constraints promoted economic growth, hence improving borrower capacity to meet their financial obligations. Banks also reduced their NPL levels by means of active management strategies like loan restructuring, asset disposal, and improvement of risk assessment processes. The resilience of the banking sector in overcoming the challenges provided by the pandemic and the strength of the EU's economic recovery explain the constant decline in the NPL ratio during this quarter.

The lowering trend in the ratio kept in the third quarter of 2021 is seen by the NPL ratio reaching 2.17%. Many sectors returning to pre-pandemic levels of activity point to the economic recovery building momentum. The aid programs implemented during the pandemic helped to prevent a significant increase in loan defaults; when these programs were gradually withdrawn, debtors were often able to commence loan repayment without major interruption. Good market conditions also aided banks so they could keep appropriately controlling their NPL portfolios. Supported by steady economic expansion, increasing employment, and stable financial conditions, the third quarter of 2021 represents a period of remarkable EU recovery.

By the fourth quarter of 2021, the NPL ratio, which had lowest level observed throughout the pandemic, had declined to 2.06%. This low number shows how well the EU's coordinated response to the COVID-19 epidemic—which comprised both economic aid programs and focused actions inside the banking system—has worked. Both proactive NPL control by banks and the continuous economic recovery of the EU help to somewhat enhance loan performance.

The low NPL ratio by the end of 2021 shows that, despite the unparalleled economic difficulties COVID-19 presents, the EU banking system came out of the epidemic with a somewhat solid loan portfolio, therefore avoiding a notable rise in credit risk. The capacity of the banking industry to withstand this era highlights the need of prompt and efficient policy interventions in sustaining financial stability and reducing the influence of economic shocks on credit quality.

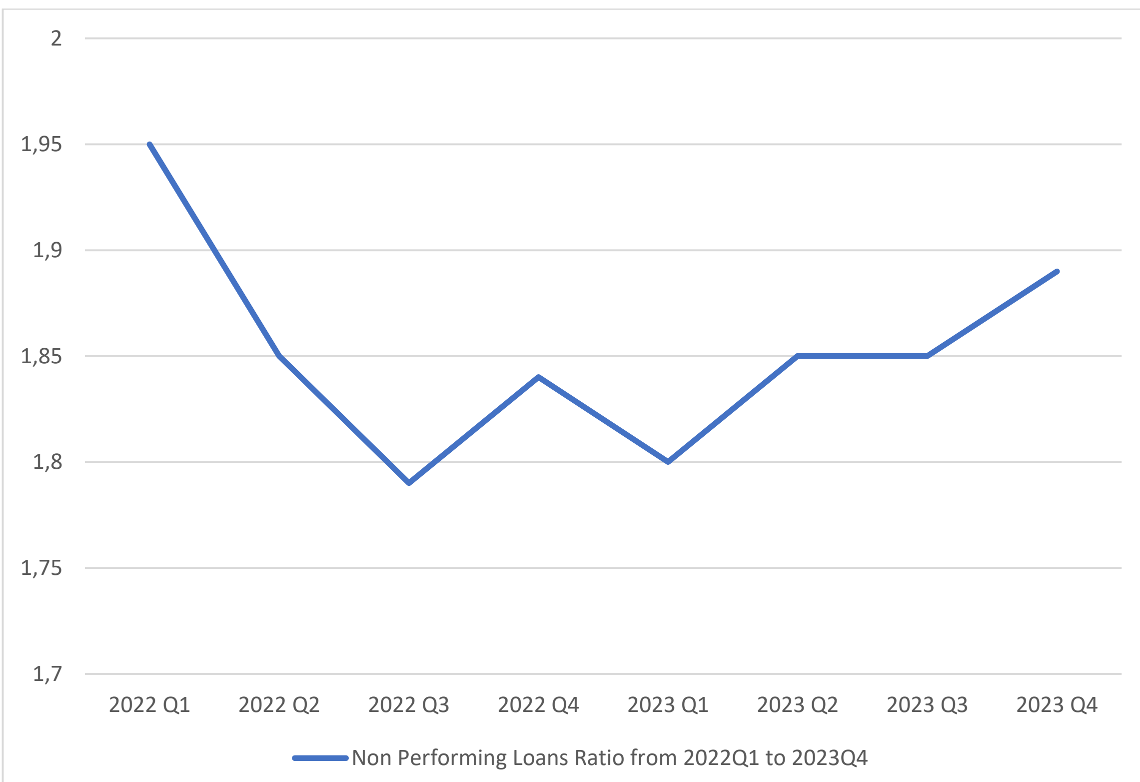
From 2020 to 2021, the NPL ratio for the EU shows the major influence of COVID-19 on the banking industry and emphasizes the success of the EU's reaction in stopping a rise in non-performing loans. The beneficial impacts of economic assistance policies, banking sector adaptation, and EU economic recovery strength show themselves in the slow drop in the NPL ratio throughout this time. Although the epidemic first caused worries about a possible rise in NPLs, prompt application of loan moratoria, government guarantees, and other assistance programs served to stabilize the financial sector and assist consumers through the crisis.

The NPL ratio steadily dropped as these policies were progressively taken off as the rebound in employment and economic activity let borrowers start paying back their loans. The low NPL ratio by the end of 2021 highlights the resilience of the EU banking industry and its capacity to negotiate the difficulties presented by the COVID-19 epidemic, therefore enabling ongoing stability and development in the post-pandemic period.

3.5 The latest data on NPLs in 2022-2023

The non-performing loans (NPL) ratio in the European Union (EU) from the first quarter of 2022 to the fourth quarter of 2023 illustrates a period of post-COVID stabilization, reflecting the gradual normalization of economic activity alongside emerging challenges. Following the significant decline in NPL ratios throughout the COVID-19 pandemic, as a result of government interventions and loan moratoriums, the EU banking sector entered 2022 with an NPL ratio of 1.95%, marking a continued trend of low credit risk. This level indicated that the majority of borrowers had been able to recover from the financial strain imposed by the pandemic, supported by a return to stable economic conditions and gradual withdrawal of crisis-era support measures. The relatively low NPL ratio at the start of 2022 suggests that the European banking sector was emerging from the pandemic with a healthier loan portfolio, a testament to the effectiveness of policy responses in cushioning the economy during the crisis.

Figure 12. Non Performing Loans Ratio from 2022Q1 to 2023Q4



Source: Statista.com 2023

In the second quarter of 2022, the NPL ratio declined further to 1.85%, reaching one of the lowest levels seen in recent years. This continued improvement in loan quality was driven by the rebound in economic growth and rising consumer confidence as Europe adapted to a post-pandemic landscape. Additionally, as inflationary pressures began to rise, the European Central Bank (ECB) signaled its intent to begin tightening monetary policy, which impacted lending practices and the financial behavior of borrowers. This period was marked by an increased focus on risk management, with banks remaining cautious about extending new credit to higher-risk clients. As a result, the EU banking sector was able to maintain a low NPL ratio, reflecting the cautious optimism and economic resilience seen in the early stages of 2022.

By the third quarter of 2022, the NPL ratio had decreased slightly to 1.79%, reflecting ongoing economic stability. This period, however, was not without challenges. Rising inflation, partly driven by global supply chain disruptions and increased energy prices due to geopolitical tensions, began to put pressure on borrowers, particularly in energy-intensive industries and among lower-income households. Despite these emerging risks, the overall stability of the NPL ratio at 1.79% indicates that the banking sector was still resilient enough to withstand these pressures, with no significant increase in loan defaults. Banks continued to benefit from low default rates as many borrowers had adapted to the post-pandemic economic environment, allowing the EU banking sector to sustain a favorable loan quality.

In the fourth quarter of 2022, the NPL ratio rose slightly to 1.84%, reflecting the impact of persistently high inflation and the beginning of the ECB's interest rate hikes. As the ECB initiated a series of rate increases to counter rising inflation, borrowing costs for businesses and households increased, which led to a modest uptick in credit risk. The slight rise in the NPL ratio during this quarter suggests that some borrowers were beginning to face difficulties in servicing their debt under the new, higher interest rate regime. Although the increase was marginal, it marked a turning point in the post-COVID decline in NPLs, indicating that economic conditions were beginning to shift and that the period of exceptionally low NPL ratios might be reaching an end. The small rise in the NPL ratio at the end of 2022 underscores the challenges posed by tightening monetary policy and a high inflation environment.

In the first quarter of 2023, the NPL ratio fell slightly again to 1.8%. This brief decline may reflect the adaptation of borrowers to the new interest rate conditions, as well as the efforts by banks to support viable clients through loan restructuring and targeted financial assistance. Many banks implemented proactive risk management strategies to help mitigate potential defaults, working closely with clients to ensure that they could manage higher repayment burdens. The temporary reduction in the NPL ratio suggests that the banking sector was still resilient in the face of ongoing economic pressures, benefiting from the underlying strength of the EU economy and the adaptability of borrowers to the evolving financial environment. However, by the second quarter of 2023, the NPL ratio increased again to 1.85%, and it remained at this level through the third quarter. This stabilization at a slightly elevated level reflects the combined effects of persistently high inflation, continued ECB interest rate hikes, and rising economic uncertainties in the EU. With the cost of living increasing, households faced tighter budgets, which began to impact consumer spending and debt repayment capacities, particularly among lower-income groups. The sustained higher interest rates also made debt servicing more expensive for businesses, particularly small and medium-sized enterprises (SMEs) that were already struggling with rising input costs and supply chain challenges. Consequently, the steady NPL ratio of 1.85% during this period signals that the EU banking sector was beginning to experience the effects of these prolonged economic pressures, as some borrowers started to encounter difficulties in meeting their financial obligations.

In the fourth quarter of 2023, the NPL ratio rose slightly again to 1.89%, marking a small but notable increase. This rise in NPLs reflects the cumulative impact of the economic headwinds that had built up over the year, including the enduring effects of high inflation, elevated interest rates, and slowing economic growth across Europe. By this time, some sectors, particularly those more sensitive to interest rates such as real estate and consumer finance, were showing signs of strain, with borrowers in these sectors facing higher rates on variable loans and struggling with repayment obligations. Additionally, as economic growth slowed, unemployment rates in some EU regions began to rise, further affecting households' financial stability and contributing to a slight uptick in NPLs. The increase in the NPL ratio to 1.89% at the end of 2023 suggests that while the banking sector remained broadly stable, the effects of the ECB's prolonged tightening policy were beginning to translate into higher credit risk within the EU economy.

In summary, the NPL ratio in the EU from 2022 to 2023 reflects the post-COVID normalization of credit risk, followed by the onset of new economic challenges driven by inflation and rising interest rates. The initial decline in the NPL ratio through early 2022 indicates that the EU banking sector was well-positioned as it emerged from the pandemic, benefiting from years of strong economic support and proactive risk management. However, as inflationary pressures and the ECB's response to these pressures took hold, the NPL ratio began to stabilize and eventually rise slightly, reflecting the adaptation of borrowers to a new economic environment characterized by higher costs and constrained household budgets. The slight increases observed in late 2022 and 2023 highlight the pressures facing borrowers and the EU banking sector's resilience in managing these new risks. Overall, while the EU banking sector remains robust, the recent upward trend in NPLs underscores the importance of continued vigilance and effective risk management, as well as the potential need for targeted support measures to assist the most vulnerable borrowers in navigating a more challenging economic landscape.

CONCLUSION

Analyzing non-performing loans (NPLs) reveals their major impact on not only the soundness of banks but also more general economic situation. Particularly in times of economic crisis, NPLs present ongoing challenges for the banking sector affecting loan availability, investor confidence, and economic resilience. Through a comparison of NPL dynamics between the United States and the EU, one can clearly see how management and loan reduction are affected by regulatory frameworks, economic structures, and crisis reactions. Shapes of effective policies and tools supporting financial stability and economic growth depend on a knowledge of these processes.

From 2002 to 2023, the study of non-performing loans (NPLs) in the U.S. banking industry indicates a complicated interaction among economic cycles, lending policies, regulatory actions, and financial stability. Low-interest rates and economic development during the pre-crisis years 2002–2007 helped credit to spread throughout several industries, especially in the housing industry. Under subprime lending and securitization techniques gathering pace, this climate caused banks to relax lending restrictions. Supported by increasing real estate values, these techniques' seeming safety helped to create an image of stability as banks and investors passed risk through mortgage-backed securities (MBS).NPL ratios fell so gradually, to record low values. But when increasing interest rates and a slowing down of the housing market in 2006–2007 started exposing problems in loan quality, this period of aggressive lending eventually prepared the foundation for financial instability.

The Global Financial Crisis (2008–2010) significantly reversed these trends. When property values dropped, borrowers with adjustable-rate mortgages—especially in the subprime category—faced unmanageable debt. The universal default on these loans caused sharp increase in NPLs that surpass all past levels, therefore threatening bank profitability, liquidity, and stability. Particularly affected by MBS and collateralized debt obligations linked to these failing loans, the banking industry incurred enormous burden. Reacting, banks reduced loan availability, which decreased lending and worsened the recession. The NPL ratio continues growing notwithstanding government initiatives including the Troubled Asset Relief Program (Tarp) and Federal Reserve efforts to restore liquidity and stabilise the banking industry. By 2010, NPLs remained high, a mirror of the severe and long-lasting crisis damage.

The years 2011 through 2019 saw a modest comeback in the banking sector as economic recovery started and unemployment declined and legislative improvements took effect. Among other regulations, the Dodd-Frank Act established additional capital requirements, stress testing, and enhanced risk management strategies on banks, thereby helping to recover sector confidence.

Together with government initiatives like the Home Affordable Modification Program (HAMP), these changes helped to reorganise troubled loans and over time lower NPL levels. The NPL ratio dropped as loan quality rose, suggesting growing banking industry resilience. Consistent economic growth, low unemployment, and increased consumer confidence helped to further support the soundness of the financial system by the later part of the decade, hence producing record low NPL ratios by 2019.

The COVID-19 epidemic of 2020 brought more difficulties as mass job losses and economic closures begged questions about a possible increase in NPLs. But loan performance was stabilized in great part by quick and forceful government reactions including stimulus packages, loan forbearance programs, and the near-zero interest rate policies of the Federal Reserve. Although NPL ratios stayed low during the epidemic, the slow decrease of government support in 2021 showed growing financial difficulties on borrowers. These actions gave relief to borrowers, therefore minimizing the predicted increase in NPLs during the height of the economic crisis. Still, NPL levels were historically low while the economy rebuilt, a reflection of the strength of past monetary and legislative measures. Rising inflation, increased interest rates, and residual economic pressures clearly show a minor rise in NPLs by 2023.

The way non-performing loans (NPLs) have evolved in European Union banks emphasizes the vital link between economic cycles and financial stability. NPL trends show how weaknesses in the banking sector were revealed by outside shocks such the COVID-19 epidemic and the global financial crisis, thereby requiring strong government measures to preserve resilience. Even if the EU put in place sensible plans to lower NPL levels—regulatory control, restructuring, asset sales—there are still ongoing problems. Recent pressures from inflation, increasing interest rates, and economic uncertainty point to either stable or rising NPL levels, which emphasizes the need of proactive risk management, focused support for vulnerable borrowers, and ongoing regulatory vigilance to guarantee that the banking sector may successfully support economic recovery and development. This study of NPLs shows that a robust banking environment able to weather upcoming economic shocks depends on constant adaptation in regulatory and risk management systems.

From 2002 to 2023, the US and EU banking sectors had differing trajectories in non-performing loans (NPLs) determined by particular economic cycles and structural features in every region's financial systems. Thanks to favorable economic conditions and progressively lax lending criteria, particularly in the housing industry, which drove a drop in NPL ratios as lending climbed, the US had rather low NPL levels before the 2008 crisis. Using securitization and subprime mortgage lending to shift loan risk to investors, US banks aggressively expanded credit during this time. This strategy generated vulnerabilities that greatly raised NPLs when the financial crisis struck in 2008, even when it offered temporary economic development. On the other hand, European banks—particularly in Central and Eastern Europe—kept steady NPL levels by means of prudent lending policies supported by more careful risk management and stronger regulation. Although it did not totally protect many banks from the larger crisis, the conservative lending in Europe's financial institutions sheltered many from early shocks experienced in the US.

Though the effects were different, NPLs rose dramatically in the US and the EU as the global financial crisis developed. As high-risk mortgage defaults fast increased, the US saw an instantaneous and notable rise in NPL ratios. As the economy started to recover by 2011, US policy interventions included the Troubled Asset Relief Program (Tarp) and Federal Reserve liquidity policies helped to rapidly stabilize banks, hence reducing NPLs. The EU had a more protracted NPL crisis however, particularly in southern European nations severely impacted by sovereign debt problems. Slower economic recovery and systemic banking issues caused high NPL levels for several years after the crisis. Though high ratios lingered longer than in the US, influencing credit flow and economic development, efforts by EU authorities—such as the creation of the European Stability Mechanism and improved regulatory measures under the European Banking Authority—gradually aid lower NPLs.

Although their approaches were different, US and EU banking sectors sought to recover and implement legislative changes in the years following the crisis. US banks significantly reduced their NPLs by means of asset sales, write-offs, and lending process adjustments. Emphasizing better supervision, stress testing, and the creation of secondary markets for NPLs to help banks unload bad assets, the EU also undertook delayed regulatory reforms designed to unify banking practices among member states. As recovery developed, the US banking sector typically demonstrated more resilience; NPL ratios declined by middle of the 2010s to pre-crisis levels. European banks remained suffering with rising NPL ratios due to delayed economic recovery, particularly in southern and peripheral EU countries where the debt crisis and less regulated systems made it more difficult for banks to improve loan performance.

Both regions saw new challenges with the COVID-19 outbreak under way; nonetheless, the consequences on NPL ratios and government responses once more highlighted crucial differences. In the US, fast government stimulus and loan deferral programs helped to largely maintain the resilience of the banking sector and prevent a clear rise in NPLs. Although similar government aid programs were embraced throughout the EU, the dependence of certain nations on bank financing and the sectorial structure of others resulted in a more conservative recovery. Long-standing issues with NPL resolution in several member states kept the NPL ratio higher even if policy measures aimed to safeguard borrowers and maintain bank stability served to slightly counterbalance this.

In terms of policy reactions, the US usually supported prompt capital injections and extensive liquidity policies thereby enabling banks to stabilize rapidly. Focusing on standardized stress tests, NPL reduction rules, and creating secondary markets for distressed assets, the EU underlined unified regulatory frameworks aiming at long-term stability and systemic resilience. While the EU adopted a more organized, regulatory-led plan to manage NPLs, which albeit slower tried to prevent future financial vulnerabilities, these policy disparities mirror the US approach of permitting quick recovery and market-based solutions. Although both methods have advantages and drawbacks, the different structures of each financial system required different strategies; the US banking industry was able to rebalance more rapidly, while the EU approach worked gradually to provide a more stable basis across its several members.

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