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How corporate banking institutions manage Non-Performing Loans: Case Study on BNP Paribas' approach to credit risk management.

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Master in Management

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Department of Marketing, Operation and Management

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Resumo

A seguinte dissertação investiga os métodos da abordagem do BNP Paribas à gestão de crédito não produtivo, oferecendo uma perspetiva a vários níveis das práticas internas do banco e o cumprimento dos regulamentos em vigor. O estudo salienta as abordagens prudentes da estratégia de gestão de risco do BNP Paribas, ilustradas por um baixo rácio de créditos não produtivos e elevado rácio de reservas para perdas com empréstimos, posicionando o banco favoravelmente em comparação com os seus rivais. O relatório analisa o papel do crédito vencido no modelo de negócio de grandes instituições financeiras, e de maneira macroeconómica no crescimento global. Apesar de uma redução dos níveis de crédito não produtivo após a crise de 2007, continuam a representar uma ameaça substancial para os bancos e para a economia europeia. Diminuem a rendibilidade dos bancos, uma vez que são afetados recursos para cobrir as perdas esperadas (provisões), reduzindo os fundos disponíveis para a concessão de empréstimos a famílias e empresas, prejudicando assim o crescimento e a criação de emprego. Adicionalmente, o estudo abrange a adoção das normas de Basel III e o seu impacto nas práticas de gestão do risco do BNP Paribas. A estratégia de gestão de risco do BNP Paribas demonstra uma integração bem sucedida do regulamento de atenuação do risco e intervenção precoce. Esta abordagem está em consonância com a tendência geral das principais instituições bancárias francesas, sublinhando a importância do cumprimento da regulamentação e das estratégias de risco no sector bancário moderno. Este relatório oferece observações sobre a área da gestão de crédito não produtivo e as implicações para a estabilidade financeira.

Palavras-Chave: Crédito vencido; Crédito não produtivo; BNP Paribas; Gestão de Risco; Basel III;

Abstract

The following dissertation delves into the intricacies of BNP Paribas' approach to managing non-performing loans (NPLs), offering a multi-layered perspective on the bank's internal practices. The study highlights the distinctive approaches of BNP Paribas' risk-aware management strategy, which resulted in a low NPL-to-loan ratio and a high loan loss reserve-to-NPL ratio, positioning the bank favorably compared to its peers. A significant emphasis is placed on the role of NPLs in affecting economic growth. Despite a subprime post-crisis reduction in NPLs, they continuously pose a substantial threat to banks and the broader European economy. NPLs diminish banks' profitability as resources are allocated to cover expected losses (provisions), reducing funds available for lending to households and companies, thereby hampering growth and job creation. Furthermore, the study acknowledges the adoption of the Basel III reporting standards and its impact on BNP Paribas' risk management practices. The bank aligns with these regulations and reinforces risk assessment and monitoring, allowing for early NPL identification and preemptive intervention. BNP Paribas' NPL management strategy demonstrates a successful integration of risk mitigation, early intervention, and proactive communication with distressed borrowers. This approach is in line with the broader trend in major French banking institutions, underscoring the importance of regulatory compliance and risk-aware strategies in the modern banking sector. This report offers valuable insights into the intricate realm of NPL management and its implications for financial stability.

Keywords: Non-Performing Loans, Non-Performing Exposure, BNP Paribas, Risk Management, Basel III

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SECTION 1

Introduction

1.1. Contextual Background

Following the 2007 subprime crisis and the ensuing aftermath on the global economy, financial institutions and regulators have increased prudence and attention to identifying early signs of future crisis. The impact was heightened by the subsequent global equity market crash, the closure of reputable financial institutions such as Lehman Brothers, and the fragile state of numerous other globally recognized banks. The resulting asset write-downs exposed the vulnerabilities within the banking system, raising concerns about its fragility for the broader economic framework (Mesnard *et al*, 2016). In response, both US and European governments, alongside central banks, initiated rescue programs to salvage the distressed banking sector. While these measures addressed immediate concerns, a pressing need emerged to delve into the underlying failures of financial and banking systems. The overarching aim was to not only mitigate the ongoing crisis but also to establish safeguards against potential future reoccurrences. Through historical data and implementation of new frameworks, these actors seek to avoid nurturing an environment prone to future setbacks and improve the recovery capabilities in the face of cyclical or unforeseen downturns.

One particular attention point emerging from the subprime crisis has been the role of Non-Performing Loans (NPLs), which are often blamed for hampering economic growth. Europe held a relatively high level of NPLs prior to the subprime crisis hitting the markets. In the aftermath of the crisis, the number of NPLs reduced significantly, however still posing a serious and lingering threat to the banks affected by the crisis. NPLs hinder banking institution's profitability as resources are allocated towards loans generating no return, forcing banks to set capital aside in order to cover these predicted loses (provisions). These are recorded as liabilities considering they represent a potential future expense that banks must be capable of covering. As banks' resources are allocated towards estimated losses, fewer resources are available to provide loans to households and companies, halting potential growth and job creation. This phenomenon initiates a snowball effect that ultimately affects the entire financial ecosystem (Balgova *et al*, 2016).

Nevertheless, investors took a keen interest in these high risk, high reward assets. The NPL market has shifted geographically, with Southern European countries integrating these markets. According to Ashurst (multinational law firm headquartered in London, UK): "tangible market activity has now commenced in all of the major European NPL-burdened jurisdictions following the successful launch and completion of a number of formative transactions in both Greece and Cyprus in 2018". The year 2018 registered a peak year in NPL market activity (Debtwire, 2020), and, in recent years, the attention

has turned to developing countries outside of Europe such as China or India. In the current context of a post-global epidemic, investors seek to diversify their risk by looking into markets in different geographies, expanding the network of NPL markets. However, this study will be focusing on the NPL portfolio from French banking institutions.

In this report, we shall take the example of BNP Paribas (largest French bank in terms of assets), and examine its approach to risk assessment, and how it reflects on non-performing assets. We will use this data as an analytical benchmark providing a comparison base with other French financial institutions, potentially pinpointing structural weaknesses in each model.

1.2. Motivation

As a student graduating during a period of market instability and uncertainty caused by the covid pandemic and subsequent inflationary and recession periods, I have taken a keen interest in understanding how to recover, prepare and anticipate any future crisis. Banking institutions hold a core function in the global economy, their importance exponentially increasing over the years, with consolidation trends labelling the ensuing financial behemoths as “too big to fail”. Therefore, it is of paramount importance to review and continuously improve the banking system safeguards, most noticeably during periods of significant and lingering downturn.

In order to acquire a better understanding of the banking sector, in September 2020, I started a position at the French corporate bank BNP Paribas, as a credit analyst covering a portfolio of corporate groups listed in the CAC 40 (French stock market index). I was seduced by their status as one of the largest corporate banks worldwide, their conservative approach to lending, and the opportunity to directly work with major French Groups. Having lived and studied for in France for over a decade, it sparked an interest in the French market, aspiring to work for / or alongside French conglomerates listed in the CAC 40. This position has been a window into the inner synergies in the world of finance. The mission is simple: assess the bank’s risk exposure in each transaction, via an in-depth analysis of the clients’ debt profile and financial health. As we are traversing a period of adversity triggered by the pandemic, it is crucial to clearly understand the bank’s risk philosophy, as the risk assessment models are shifting due to the severity of several successive crisis and the ongoing implementation of regulatory frameworks.

The goal of this study, is to compare data from different leading institutions, with an individual focus on BNP Paribas along with a peer comparison with their rival French counterparts. Through the historical data of non-performing loans (NPLs), we will attempt evaluate the outcome of each strategic approach, and more importantly, attempting to determine its strengths and oversights.

1.3. Research Problematic

The global economy was severely hit with the unprecedented challenges of the covid aftermath, despite a promising rebound in 2021 and 2022 for major groups, notably the CAC 40 (source: Boursorama). Due to a lingering global financial crisis further amplified by inflationary trends, companies and households saw a weakening purchasing power.

BNP Paribas is at the forefront of banking solutions when it comes to both retail banking and investment ranking. Its ascension towards one of the leading global banking institutions came in the aftermath of the 2007 subprime crisis. Even though most financial institutions took a severe hit, BNP Paribas endured, gaining market share through a disciplined and conservative approach to lending and strategic penetration into major European markets. It was the first major financial group to identify and acknowledge the impact from the subprime crisis as early as August 2007 (Shin, 2009), closing three major funds heavily exposed to US subprime mortgages. The timely response partially mitigated the crisis impact which strongly resonated on major financial institutions, namely Lehman Brothers and Northern Rock. Valuable insights should be gathered from these challenges and the strategic shortcomings of these institutions. The data gathered from the subprime crisis, has shed a light into patterns of lending leniency and lack of prudence from major banks.

The ramifications of the pandemic led to several businesses looking for credit lines to mitigate the various adverse effects. As loan demand increases, banks must remain vigilant and avoid complacency by softening risk assessment practices. Institutions often display short-term focus, prioritizing profitability in their loan management. The primary objective of this report is to scrutinize the practices deployed within the French banking sector, using BNP Paribas as a benchmark, to discern a successful approach to risk assessment. Furthermore, the study will examine the enforcement of regulatory frameworks instituted in the aftermath of the crisis, with the aim of pinpointing the efficiency in improving financial stability.

SECTION 2

Literature Review

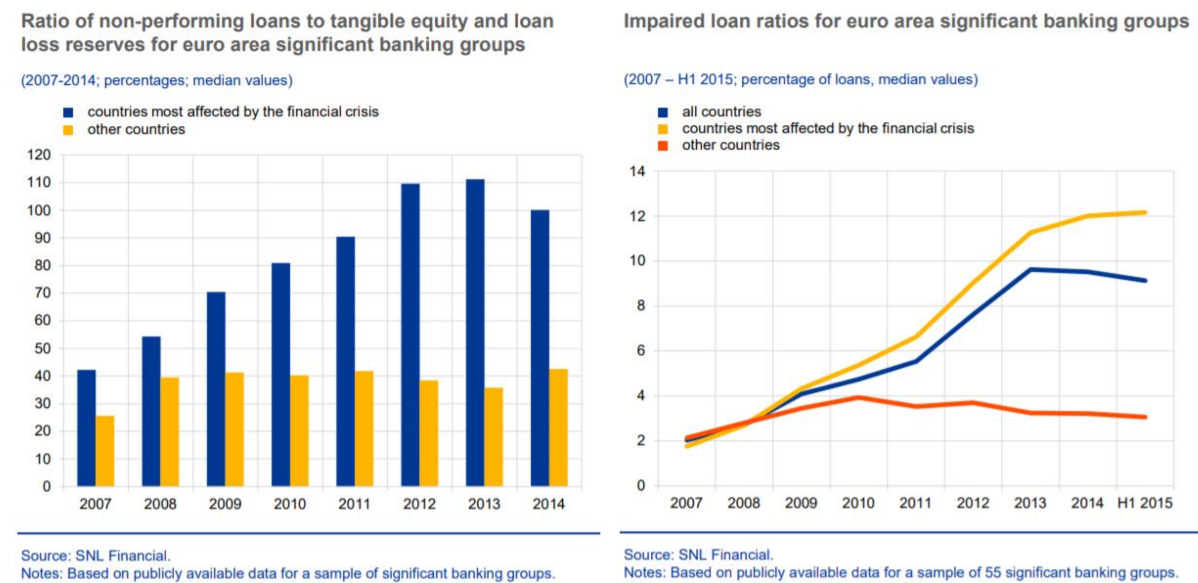
2.1. Defining Non-Performing Loans (NPL)

The subprime crisis raised concerns regarding Non-Performing Loans (NPLs), which represent a core element in asset quality management, within the regulatory capital requirements framework. The rollout of new regulatory capital requirements for banking institutions nurtured transparency in the credit risk assessment process, mainly in strengthening capital reserves to cover potential losses. Credit is commonly labelled as a Non-Performing Loan (NPL), when the borrower has not performed the loan's scheduled repayments (considered in default), for a specific period (typically 90 days). Said period may vary according to the nature of the loan, its specific terms or even the industry (European Central Bank, 2016). This asset category can be extremely detrimental to banking institutions as it negatively contributes towards the valuation its balance sheet and weighs heavily on the capital adequacy ratios.

To illustrate this point, we refer to the joint intervention from the European Central Bank (ECB) and the International Monetary Fund (IMF) in November 2015, issuing a statement regarding Cyprus' economic assistance program, heavily impacted by losses on assets. The main priority was reducing the overwhelming level of NPLs, which were crippling the country's economy. Similar patterns were identified in Greece, following the subprime crisis. According to The Banker database (Financial Times service providing financial data for the top four hundred leading banks worldwide), "six of the top ten banks when it comes to non-performing loans as a percentage of their overall gross loan portfolio are based in Greece or Cyprus. The prominence of NPLs in today's crises is nothing new. On the contrary, NPLs are a recurring feature of economic and banking crises." (Bholat *et al.*, 2016).

Figure 1 helps to illustrate how NPLs and the subprime crisis are closely linked. The Texas ratio indicates the proportion of NPLs compared with the sum of the bank's tangible common equity and reserves allocated towards loan losses. Figure 1 depicts how banks with higher NPLs within their portfolio are concomitantly exposed to financial downturns. The countries most affected by the crisis had a level of NPLs significantly above the average (including Greece and Cyprus). This helps establishing a correlation between NPLs and a rupture in the global economy.

Figure 2.1: Texas ratio and Impaired loan ratio evolution in the euro area



As loan repayments are foregone, banking institutions adjust the true value these assets carry on the balance sheet. Therefore, Loan Loss Provisions (LLPs) are created to correct the original value stated in the bank's financial report. The adjustment corresponds to the difference between the repayment amount originally stated in the loan's conditions, and the most current estimates of the amount that will be received (Investopedia, 2021).

2.2. Determinants of a Non-Performing Loan

One main area of NPLs studied in recent years are the determinants shifting performant loans into NPLs. This topic has been vastly explored (Hoggarth *et al*., 2005; Harr & Noelsen, 2005; Louzis *et al*.,2012; Vogiazas & Nikolaidou, 2011; Farhan *et al*. 2012; Klein, 2013; Messai & Jouini, 2013, Bruno *et al.*, 2015), and the general consensus identifies two distinct categories of determinants. The first category groups several internal bank specific characteristics, such as size, the capital structure, the level of funding and the bank's overall efficiency. The second category groups wider external macroeconomic variables, such as a country's GDP, the inflation and unemployment rates or its investment rate (Cucinelli, 2015). One study found that these few macroeconomic variables were enough to significantly influence the quality of loans, especially in a buoyant business cycle environment (Bofondi & Ropele, 2011). Earlier studies also support the fact that loan value loss is linked with poor performance in key industries, such as agriculture or energy (Keeton and Morris, 1987).

Several studies conducted outside the US support the theory that credit quality is strongly correlated with internal characteristics from each bank, such as the study conducted by Laeven &

Majnoni (2003). Through data from the 1988-1999 period, spanning across 45 different countries, the authors concluded that banks failing to adequately allocate loan-loss provisions during favorable periods of the cycle, would later be affected during a downturn. Another study, from Fonseca & Gonzales (2008), focused on disclosure linked factors. The study highlighted the use of income smoothing (using loan-loss provisions as a tool to improve net results) in the income statements of several banks. The conclusion substantiated the importance for banks to enhance their provision allocation practices and increase transparency in reporting when confronted with heightened accounting disclosure requirements, and enhanced regulatory oversight. Both studies support the importance of Loan loss Provisions in ensuring an accurate and transparent reflection of a bank's financial health and risk exposure. Other studies explore different angles, such as the work from Tomak (2013) and Lu *et al*. (2005), focusing on the bank's relationship network. The former studied the lending behavior from a sample of Turkish banks, whilst the latter assessed the lending behavior from Chinese banks to publicly listed domestic companies. Both pinpointed the existence of a bias from banks influenced by the State. On one study, Tomak (2013) identified a significant relationship between NPLs and lending behavior in Turkish State owned banks, where NPLs had a negative impact on total loan growth. The latter study from Lu *et al*. (2005) demonstrated banks were more likely to concede loans to state-owned firms, regardless of the risk level.

The second category of determinants includes external macroeconomic variables. Studies conducted on Spanish, Italian and Greek banks determined the likelihood of rising NPL levels in correlation with increasing unemployment and interest rates, as well as GPD contraction (Messai and Jouini, 2013). A study conducted by Keeton (1999) emphasizes the link between business cycles and loan growth. The author demonstrated loans growth acceleration during periods of economic expansion, as banks attempted to leverage on the heightened activity levels. Nevertheless, when facing a cyclical downturn, banks would report proportionally higher losses and provision (Keeton, 1999).

Broader studies focused on bank's lending behavior also contributed towards supporting the distinction of these two distinct determinant categories (Micco & Panizza, 2006; Olokoyo, 2011; Djiogap & Ngomsi, 2012; Swamy & Sreejesh, 2012; Ladime *et al*., 2013). These studies generally established size and capitalization as bank specific determinants, as well as GDP and monetary policy as macroeconomic determinants.

2.3. Non-Performing Loan Economic Impact

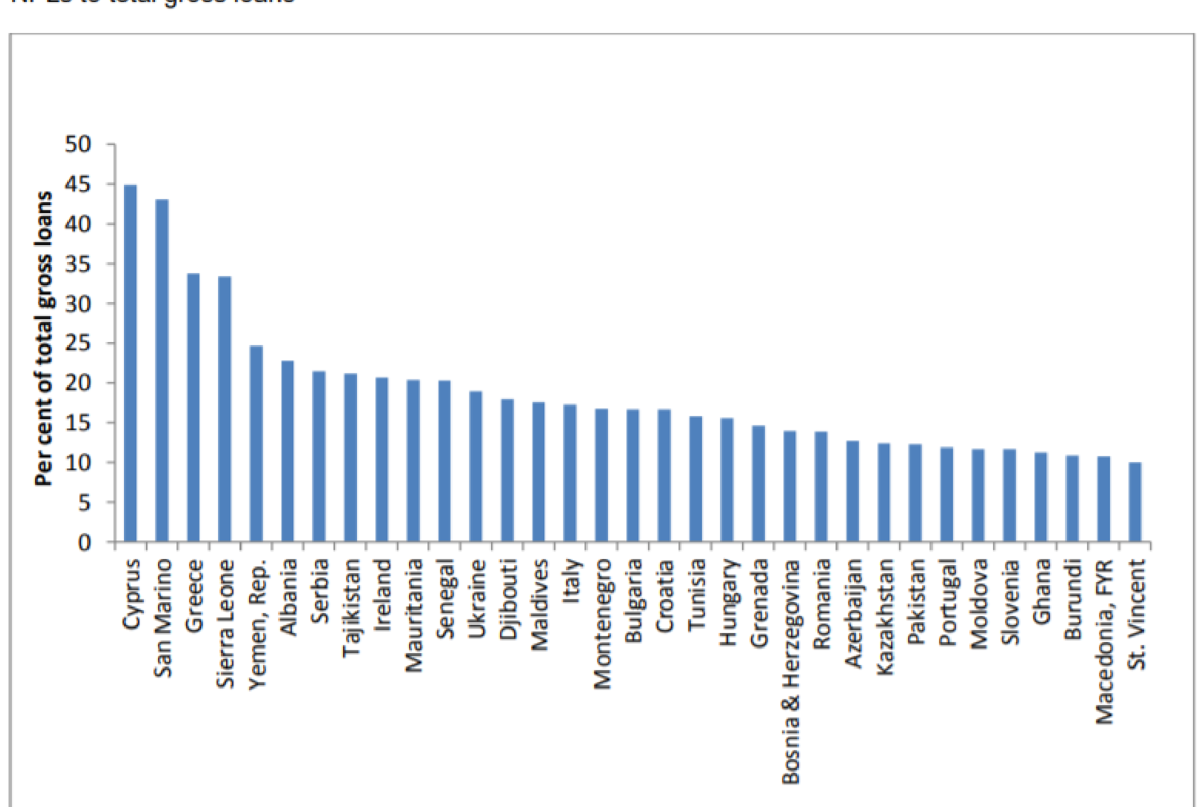
Non-Performing Loans hamper debtors, as the unresolved debt limits the access to new investment funding (Bernanke *et al*., 1999). At creditor level, funds are allocated to assets with low to no return,

incurring high opportunity and wind-down costs related to the termination of such loans. Therefore, a high NPL ratio is commonly a significant burden on a bank's balance sheet and income statement. It reduces credit supply at the detriment of market confidence and economic growth (Kwan and Eisenbeis, 1995; Cucinelli, 2015; Jorda *et al*., 2013; Peek and Rosengren, 2000, 2005).

The global financial crisis brought relevance towards NPL management practices. According to the IMF, in 2014, 32 separate countries held a percentage of total unrepaid credit above 10%, in most cases with a percentage above 15% (Figure 2). Cyprus and Greece, both previously mentioned as severely impacted by the subprime crisis, are prominent figures in the chart below.

Figure 2.2: Countries with NPL ratio above 10 per cent in 2014

NPLs to total gross loans



Source: World Bank World Development Indicators (WDI) and International Monetary Fund (IMF).

Analyzing the contribution of NPLs can be challenging considering the tendency to grow in volume both in periods of economic growth (through banks creating risky portfolios to leverage on growth), as well as periods of economic downturn (through the higher level of debtors in financial distress). One reoccurring trend seems to be the acceleration of NPL reduction during an economic upturn, and most data universally supports the benefits from a reduction in the NPL volume towards the economy. These benefits originate from higher GDP growth, higher investment rates and improved unemployment rates (Balgova *et al*., 2016). NPLs also been credited as a reliant predictor of bank failure (Maggi and

Guida 2009). Data shows that banks halt the willingness to lend when NPL ratio rises beyond certain thresholds. As banks are late in becoming risk-adverse, the banking sector is crippled by high NPL ratios, potentially damaging the entire financial ecosystem of a country. Banks halt credit growth which is strongly correlated with GDP growth at major business cycle turning points (Jorda *et al*., 2013). At an internal level, banks collects lesser interest payments, having fewer capital available to conduct business.

2.4. Possible approaches for managing NPLs

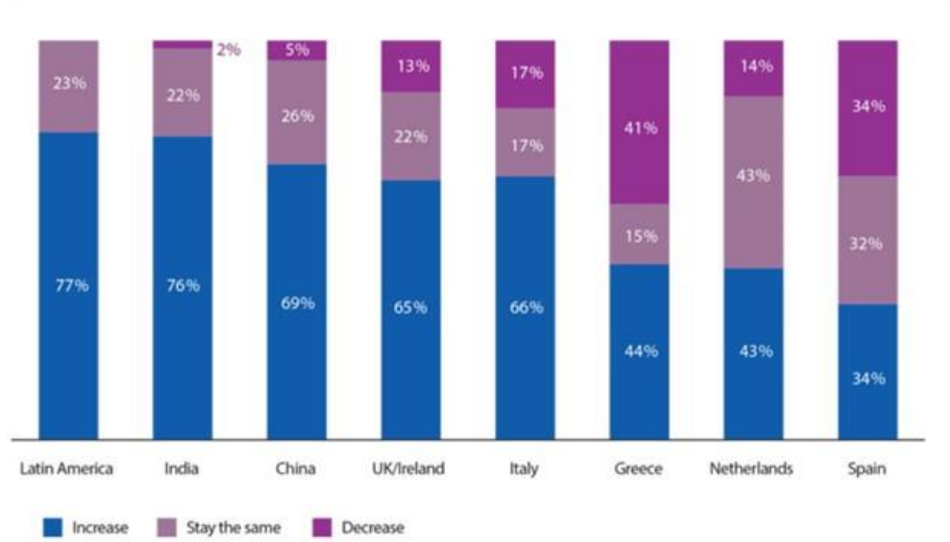
Comprehensive recovery approaches from high NPL ratios are actively sought in order to reduce the negative impact on the banking sector. The World Bank Financial Sector Advisory Centre (FinSac located in Vienna) has provided essential measures working towards improving economic growth, whilst stabilizing the financial system (Stijepović, 2014). Major restructuring is required, coupled with a shift in business practices. Banks ought to give more weight into qualitative factors, rather than quantitative, when assessing exposure to risk. Nonetheless, it is crucial to recognize that a restructuring plan should not adopt a uniform, one-size-fits-all approach, but rather a meticulously tailored structure for each individual client or facility.

Data collection is crucial, particularly regarding the borrower's (and guarantor, if any) credit worthiness within the context of the industry and its peers. Additionally, banks must ensure the validity and accuracy in security valuation, subjecting these packages to a yearly review. Furthermore, it is important to construct comprehensive debt profiles for each entity in the loan portfolio. This entails the examination of debt amounts, considering the wallet-share from other institutions, as well as the debt maturity and nature (e.g. intragroup debt commonly held by corporate subsidiaries). Financial covenants also play a supporting role in monitoring the financial health of debtors and raise early warning signals. It is also essential that legally binding documents are unambiguous, and creditors ensure the debtors fully understand the risks associated with each product proposed. Flexibility should be allowed regarding the extension of principal or interest payments. Banks can also consider the acquisition of a client's trade receivables to enhance the security of loan repayments. For higher risk transactions, banks can negotiate the issuance of guarantees from a third party, covering the bank's exposure with a client (Stijepović, 2014; BNP Paribas, 2022).

In the case of pre-existing Non-Performing Loans (NPLs), various secondary markets for these assets have been emerging. These markets offer banks the opportunity to transfer these underperforming loans to investors who are willing to assume the additional risk. Projections indicate a general upward trajectory in the Internal Rate of Return (IRR) on NPL investments in the coming years (as depicted in Figure 3). Lastly, it is imperative that regulatory capital requirements and legislation

monitor the NPL coverage capacity, ensuring these are meticulously managed and subject to periodic reviews.

Figure 2.3: NPL investment IRR evolution forecast (over 2020/21)



Source: Ashurst - A Global NPL Perspective (2019, March 5).

SECTION 3

Methodology

3.1. Data Considerations

In the dynamic landscape of the banking industry, the effective management of non-performing loans (NPLs) stands as a critical imperative for financial institutions. As a prominent player in the sector, BNP Paribas deploys a multi-layered approach to NPL management, guided by proactive risk assessment, collaborative borrower engagement, and compliance with regulatory guidelines. The bank's strategy encompasses diverse methodologies, including loan restructuring initiatives and asset sales, designed to mitigate the impact of NPLs on its balance sheet. This dissertation delves into an exploration of BNP Paribas' NPL management practices, drawing insights from official reports, financial analyses, regulatory frameworks, and industry publications. By examining the bank's strategies within the broader context of the banking landscape, the research aims to provide a comprehensive understanding of BNP Paribas' efforts to navigate the challenges posed by NPLs and contribute to the evolving discourse on effective risk management strategies in the financial sector.

To further understand the connection between risk assessment and non-performing assets, other aspects from financial reporting will be explored, such as the evolution of regulatory capital requirements, namely with the ongoing deployment of the Basel III framework which is overhauling the risk models and disclosure standards of all major European institutions.

Data regarding risk assessment within BNP Paribas will be collected, including internal rating methodologies, expected recovery rates, probability of default calculation and other useful tools employed in credit risk management.

The data gathered from BNP Paribas shall be analyzed and compared with available information from other major banks in France, such as Credit Agricole, Société Générale, Crédit Mutuel, among others. As the majority of data remains confidential, the most reliable source of information are the financial publications published by each bank. Reoccurring patterns will be drawn and cross-checked to assess the efficiency of different methods. There are nevertheless data limitations, as most risk internal structures are proprietary and confidential (strong reliance on public data) as well as the recent deployment of Basel III disclosure requirements (many banks only adjusting the reporting standard in 2018).

Conclusions will be drawn as to which banks optimally manage its non-performing assets, and the efficiency of the current regulatory framework. The data may also provide insightful information into the different determinants of non-performing loans.

SECTION 4

Presentation of BNP Paribas

4.1. Bank Heritage

BNP Paribas' lineage can be traced back to the 19th century, with several institutions emerging from a background of severe economic turbulence in France. As a response to the financial headwinds, several "comptoirs d'escompte" were created to monitor and mitigate economic downturns, namely two institutions which pioneered what became the largest international banking network at the time: (i) the Comptoir National d'Escompte de Paris (CNEP) specializing in in trade and corporate financing, and (ii) the Banque Nationale pour le Commerce et l'Industrie (BNCI) with strong international presence in Africa. The outcome of several events including the post-World War II reconstruction needs and the French State's decision to reorganize the banking industry, led to the formation of the Banque Nationale de Paris (BNP) in 1966 through the merger of CNEP and BNCI. This marked the creation of the first French State bank, with a mission to widen access to the banking system for the French population. Following a gradual consolidation of peers in the Eastern European market, BNP was privatized under president Jacques Chirac's policies (1993).

4.2 Inception to Global Presence

BNP concluded in 2000 the merger with Paribas, a premier French investment bank holding stakes in various companies and specializing in financial markets and infrastructure finance. This transformation positioned the newly formed group as a leading European player, fortified by the subsequent integration of neighboring international banks, rich in history. In Italy, BNP Paribas' acquisition of Banca Nazionale del Lavoro (BNL) in 2006 marked a significant strategic move to enhance its presence in the Italian banking landscape (6th largest Italian bank providing access to second largest domestic market in Europe). In Belgium, BNP Paribas merged in 2009 with the Fortis Bank group, comprised of several key financial institutions integral to the country's economy, such as Generale Bank (formerly Société Générale de Belgique) and the Caisse Générale d'Epargne et de Retraite (CGER). Fortis Bank which was previously State owned, had established itself as a major player in the European financial landscape, with a strong presence in Benelux. As of 2023, BNP Paribas stands as (i) the second largest European bank based on assets behind HSBC (overtaking BNP Paribas in 2022) and (ii) ninth largest bank worldwide based on assets, behind the Chinese and US behemoths as well as the Mitsubishi financial group and HSBC (source: S&P Global Market Intelligence). The bank has successfully established itself as one of the largest and most influential financial institutions, with a diversified range of services and

a widespread international presence. Furthermore, BNP Paribas' emphasis on sustainability, responsible banking practices, and digital innovation has reinforced its image as a forward-thinking and socially responsible financial institution on the global stage.

4.3 Group Profile

BNP Paribas (BNPP) is a multinational banking group operating in 65 countries with nearly 190,000 employees. Bolstered by an integrated and diversified model, the group leverages on diversified customer franchises and business lines to maintain a leadership position in Europe and favorable positions internationally. BNPP operates through four main domestic markets in Europe (France, Belgium, Italy and Luxembourg), as well as in the Mediterranean rim countries (Turkey and Eastern Europe). The group offers a varied range of services including retail banking, corporate and investment banking, along with multiple savings, investment and protection solutions. As of year-end 2022, BNP Paribas reported total assets of €2.6 trillion for a yearly net profit of €10.6 billion, structured around three core segments:

The Commercial, Personal Banking & Services (CPBS) division accounting for circa 55% of consolidated turnover in 2022, plays a pivotal role in servicing all the group's retail banking network and various specialized businesses, including "BNP Paribas Personal Finance" (credit, savings and insurance offer for individuals and professionals) and "Arval" (mobility & car rental for corporate clients and individuals). This segment primarily consists of BNPP's core retail franchises within its European operations, most notably "Banque Commerciale en France" (BCEF) in France, "Banca Nazionale del Lavoro" (BNL) in Italy, "BNP Paribas Fortis" in Belgium and "BGL BNP Paribas" in Luxembourg. Up until the beginning of 2023, the CPBS division also included the group's retail and commercial activities in the United States through "Bank of the West" prior to its sale to Bank of Montreal[1]. Through this division, the bank also engages in specialized businesses, such as the personal finance and "Arval" métiers, as well as "BNP Paribas Leasing Solutions" (BPLS) (professional equipment financing and leasing solutions) and the digital banking segments.

The Corporate and Institutional Banking (CIB) division generating circa 33% of the group's turnover in 2022, represents a varied and extensive worldwide franchise serving corporate and institutional clients (large conglomerates, banks, insurance companies, asset managers) through tailored solutions in capital markets, securities services, financing, risk management, cash management and financial

[1] On the 1st of February 2023, BNP Paribas completed the sale of Bank of the West and its 1.8 million customers to Bank of Montreal for a purchase price of USD 16.3 billion.

advisory. This division was bolstered by the acquisition of the 50% remaining shares in Exane[2] (major European investment company) in order to leverage its expertise in cash equities (execution and research) and derivatives.

The Investment and Protection Services (IPS) division representing circa 12% of consolidated turnover in 2022, encompasses four specialized business lines, each dedicated to delivering tailored solutions in savings, investment, and protection. These services are split into the following business lines:

- BNP Paribas Cardif: Insurance, protection and pensions.
- BNP Paribas Asset Management: Investment solutions for individual investors, corporate and institutional investors.
- BNP Paribas Wealth Management: Private banking catering to high net-worth clients.
- BNP Paribas Real Estate: Real Estate services across all stages of property lifecycle and investment services.

These four métiers collectively cover a wide range of clients, including the retail network, corporate groups, associations, NGOs, governments, and institutional entities. More recently, IPS achieved in 2022 a significant milestone through the acquisition of the Dynamic Credit Group (Dutch asset manager and specialist lender) with total assets under management worth over €20 billion as of year-end 2021 (source: BNP Paribas Publication), comprised primarily of Dutch mortgages.

4.4 Market Presence and Ownership Structure

BNP Paribas historically holds a solid footing in major financial indices, integrating the CAC-40 index in 1993 followed by the EURO STOXX 50 and STOXX 50 indices in 1999 and 2000 respectively. Notably, BNP Paribas' shares extend their reach into Sustainable Development benchmarks, promoting its brand of ethical principles. Its inclusion in prominent indices such as Vigeo Euronext (World 120, Europe 120, and France 20), FTSE4Good Index Series, Dow Jones Sustainability World & Europe Indices, and STOXX Global ESG Leaders Index strengthen the bank's image of commitment to responsible and conscientious business practices.

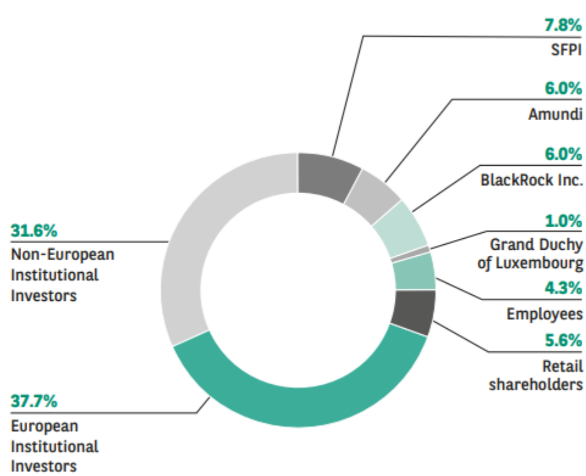
Regarding the corporate ownership of the group (Figure 4.1), a select group of shareholders, namely SFPI, Amundi, and BlackRock Inc., stand apart as the exclusive holders of share capital and voting rights above the 5% threshold. The Société Fédérale de Participations et d'Investissement (SFPI) is a public interest limited company wholly owned by Belgian State, having acquired a stake in BNP

[2] Following a 17-year partnership during which BNP Paribas held up to a 50% stake in Exane, BNPP completed the acquisition of the remaining capital in July of 2021. Exane is a capital market company specializing in cash equities, structured solutions, and asset management.

Paribas as part of the merger deal with Fortis Bank group. It is worth noting the figures stated below were extracted from company data as of year-end 2022, nevertheless, in March 2023, SFPI announced the sale of circa. one third of its stake in BNP Paribas, in an effort to reduce its exposure to the financial services sector. Following the disposal of shares, SFPI retains a 5.1% stake in the banking group (Reuters, March 2023).

Figure 4.1: BNP Paribas shareholding structure and voting rights

Dates	31/12/2022		
Shareholders	Number of shares (in millions)	% of share capital	% of voting rights
SFPI[(1)]	96.55[(2)]	7.8%	7.8%
Amundi	74.00[(7)]	6.0%	6.0%
BlackRock Inc.	74.46[(5)]	6.0%	6.0%
Grand Duchy of Luxembourg	12.87	1.0%	1.0%
Employees	52.73	4.3%	4.3%
■ of which Group FCPE[(8)]	40.78	3.3%	3.3%
■ of which directly held	11.95	1.0[(**)]	1.0[(**)]
Corporate officers	0.30	NS	NS
Treasury shares[(9)]	1.40	0.1%	-
Retail shareholders[(10)]	68.60	5.6%	5.6%
Institutional investors[(10)]	853.42	69.2%	69.3%
■ European	464.59	37.7%	37.7%
■ Non-European	388.83	31.5%	31.6%
Other and unidentified[(10)]	-	-	-
TOTAL	1,234.33	100%	100%



Source: BNP Paribas Group Universal Registration Document 2022

4.5 Overview of the French banking landscape

The French banking sector is a mature financial system with 99% of the French population holding a bank account / circa. €3,044 billion in outstanding loans to finance the economy (Banque de France, 2023). Over 2022, against a backdrop of gradually increasing interest rates, businesses in France continued to enjoy favorable access to bank loans, contributing to robust growth in outstanding loans. This important surge in business loans within France represents one of the most dynamic across the eurozone, experiencing an increase of +5.5%. The momentum was propelled, in part, by more advantageous interest rates, with an average rate of 3.02% in France against the eurozone's 3.69% (Banque de France; ECB, 2023). These interest rates were extended to SMEs as of the end of December 2022, with favorable lending conditions fueling business growth within the French economic landscape. In parallel, the French financial system displays strong resilience with robust solvency ratios: CET1 solvency ratio of French banks have been steadily rising since 2014, averaging 16.1% in 2021, comfortably above the eurozone (15.5%), European Union (15.7%), and US banks (12.6%).

Figure 4.2: BNP Paribas French peer comparison table

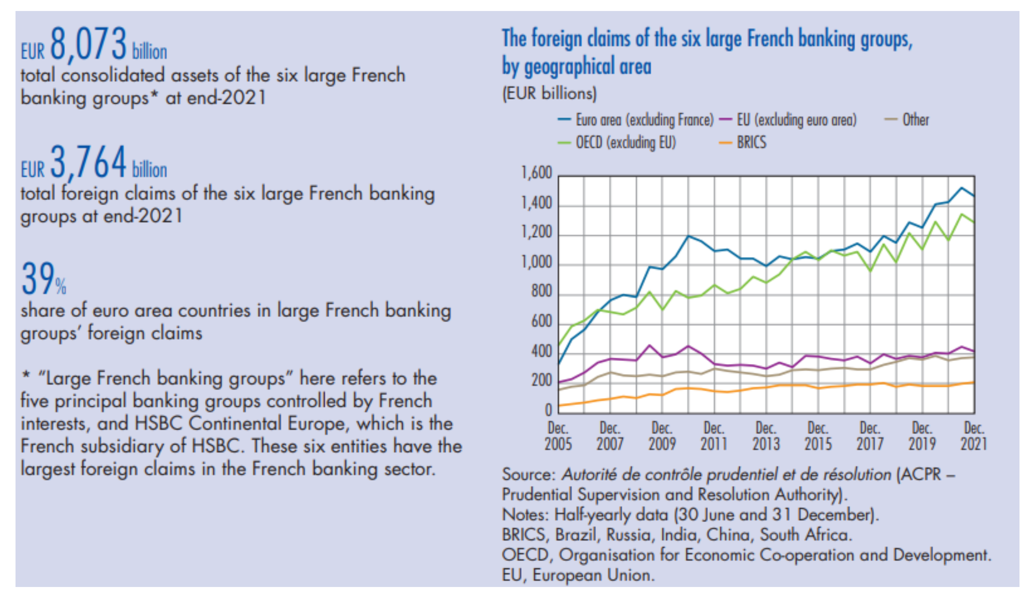
	BNP PARIBAS			CRÉDIT AGRICOLE			GROUPE BPCE			SOCIETE GENERALE			Crédit Mutuel			Peers	
In Millions of EUR	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2020**	**FY 2021**	**FY 2022**	**Average**	**Median**
12 months ending	**31/12/2020**	**31/12/2021**	**31/12/2022**	**31/12/2020**	**31/12/2021**	**31/12/2022**	**31/12/2020**	**31/12/2021**	**31/12/2022**	**31/12/2020**	**31/12/2021**	**31/12/2022**	**31/12/2020**	**31/12/2021**	**31/12/2022**	**31/12/2022**	**31/12/2022**
Net Banking Income (NBI)	**44,630**	**46,600**	**51,436**	**20,500**	**22,657**	**23,801**	**22,540**	**25,716**	**25,705**	**22,113**	**25,798**	**28,059**	**14,237**	**15,923**	**17,341**	**29,268**	**25,705**
o/w Corporate Institutional Banking (CIB)	*13,763.0*	*14,236.0*	*16,465*	*6,297*	*6,318*	*7,013*	*6,028.0*	*7,558.0*	*7,105*	*7,613*	*8,818*	*10,082*	*3,134*	*4,014*	*3,387*	*8,810*	*7,105*
o/w Retail Banking	*-*	*25,888.0*	*28,301*	*6,180*	*6,809*	*7,150*	*16,457.0*	*17,526.0*	*17,938*	*12,217*	*13,489*	*13,992*	*10,543*	*11,014*	*12,139*	*15,904*	*13,992*
o/w Investment and Insurance	*-*	*6,476.0*	*6,670*	*8,261*	*9,224*	*9,666*				*2,622*	*3,117*	*3,969*	*1,457*	*1,915*	*1,815*	*5,530*	*5,320*
o/w Corporate Center	*-*	*-*	*-*	*(238)*	*306*	*(28)*	*55.0*	*632.0*	*662*	*-339*	*374*	*16*	*-897*	*-1,020*	*-*	*217*	*16*
Net Interest margin	**21,312**	**19,238**	**20,831**	**11,818**	**12,121**	**12,864**	**9,170**	**9,879**	**9,698**	**10,473**	**10,718**	**11,286**	**7,061**	**7,135**	**8,003**	**12,536**	**11,286**
o/w Interest income	*33,589*	*29,518*	*41,082*	*23,534.0*	*23,797.0*	*29,867*	*22,295*	*22,220*	*26,254*	*20,721*	*20,590*	*28,838*	*12,830*	*11,967*	*15,660*	*28,340*	*28,838*
o/w Interest expense	*(12,277)*	*(10,280)*	*(20,251)*	*(11,716)*	*(11,676)*	*(17,003)*	*(13,125)*	*(12,341)*	*(16,556)*	*(10,248)*	*(9,872)*	*(17,552)*	*(5,769)*	*(4,832)*	*(7,657)*	*(15,804)*	*(17,003)*
Cost of Risk	**(5,717)**	**(2,971)**	**(3,004)**	**(2,606)**	**(1,576)**	**(1,746)**	**(2,998)**	**(1,783)**	**(2,000)**	**(3,306)**	**(700)**	**(1,647)**	**(2,377)**	**(699)**	**(768)**	**-1,833**	**(1,746)**
Net Income	**7,415**	**9,880**	**10,597**	**3,238.00**	**6,849.00**	**6,316**	**1,744**	**4,285**	**4,022**	**196**	**6,338**	**2,947**	**2,595**	**3,527**	**3,502**	**5,477**	**4,022**
BALANCE SHEET																	
Total Assets	**2,488,491**	**2,634,444**	**2,666,376**	**1,961,062**	**2,073,955**	**2,167,621**	**1,446,269**	**1,516,021**	**1,531,134**	**1,461,952**	**1,464,449**	**1,486,818**	**795,978**	**843,906**	**885,087**	**1,747,407**	**1,531,134**
Risk Weighed Assets	695,523	713,671	744,851	336,044	377,432	361,269	431,222	441,428	460,858	351,852	363,371	360,464	233,825	245,095	279,961	441,481	361,269
Total Equity	**117,349**	**122,507**	**126,555**	**73,495**	**76,916**	**73,480**	**78,412**	**79,884**	**82,558**	**66,979**	**70,863**	**72,782**	**49,575**	**53,211**	**56,748**	**82,425**	**73,480**
Equity ratio	*4.72%*	*4.65%*	*4.75%*	*3.75%*	*3.71%*	*3.39%*	*5.42%*	*5.27%*	*5.39%*	*4.58%*	*4.84%*	*4.90%*	*6.23%*	*6.31%*	*6.41%*	*4.97%*	*4.90%*
Cash and balances at Central Banks	**308,703**	**347,883**	**318,560**	**194,269**	**237,757**	**207,648**	**153,403**	**186,317**	**171,318**	**168,179**	**179,969**	**207,013**	**99,575**	**121,181**	**111,929**	**203,294**	**207,013**
SOLVENCY RATIOS																	
Common Equity Tier 1 (CET1) capital	88,767	91,976	91,828	44,180	44,859	40,615	68,969	69,764	69,665	47,290	49,835	48,639	41,676	45,996	50,888	60,327	50,888
CET1 ratio	*12.76%*	*12.89%*	*12.33%*	*13.15%*	*11.89%*	*11.24%*	*15.99%*	*15.80%*	*15.12%*	*13.44%*	*13.71%*	*13.49%*	*17.82%*	*18.77%*	*18.18%*	*14.07%*	*13.49%*
Tier 1 capital	98,806	100,255	103,445	50,027	49,779	46,865	68,977	69,764	69,665	56,179	57,907	58,727	42,150	46,256	50,938	65,928	58,727
Tier 1 ratio	*14.21%*	*14.05%*	*13.89%*	*14.89%*	*13.19%*	*12.97%*	*16.00%*	*15.80%*	*15.12%*	*15.97%*	*15.94%*	*16.29%*	*18.03%*	*18.87%*	*18.19%*	15.29%	15.12%
Total capital	113,830	117,125	120,562	64,489	66,971	63,073	78,234	82,715	82,424	67,584	68,487	69,724	48,717	53,246	57,573	78,671	69,724
Minimum Capital Requirement ratio	**16.37%**	**16.41%**	**16.19%**	**19.19%**	**17.74%**	**17.46%**	**18.14%**	**18.74%**	**17.88%**	**19.21%**	**18.85%**	**19.34%**	**20.83%**	**21.72%**	**20.56%**	**18.29%**	**17.88%**
Leverage ratio	*4.90%*	*4.10%*	*4.36%*	*4.90%*	*4.63%*	*3.60%*	*5.57%*	*5.75%*	*5.02%*	*4.80%*	*4.87%*	*4.37%*	*7.00%*	*7.60%*	*6.60%*	*4.79%*	*4.37%*
NPL ratio	**2.80%**	**2.30%**	**2.10%**	-	-	-	**2.50%**	**2.40%**	**2.30%**	**3.30%**	**2.90%**	**2.80%**	**2.90%**	**2.60%**	**2.60%**	**2.45%**	**2.45%**
GLOBAL RANKINGS																	
World (based on assets)	#9	#7	#9	#10	#10	#10	#19	#19	#20	#17	#18	#21	#32	#38	#30		
Europe (based on assets)	#2	#1	#2	#3	#3	#3	#7	#7	#6	#5	#6	#7	#15	#13	#11		
CREDIT AGENCY RATINGS																	
Moody's	Aa3 / Stable	Aa3 / Stable	Aa3 / Stable	Aa3 / Stable	Aa3 / Stable	Aa3 / Stable	A1 / Stable	A1 / Stable	A1 / Stable	A1 / Stable	A1 / Stable	A1 / Stable	Aa3 / Stable	Aa3 / Stable	Aa3 / Stable		
S&P Global Ratings	A+ / Negative	A+ / Stable	A+ / Stable	AA- / Negative	AA- / Stable	AA- / Stable	A+ / Negative	A / Stable	A / Stable	A / Negative	A / Stable	A / Stable	A+ / Negative	AA- / Stable	AA- / Stable		

Source: S&P Global Market Intelligence / Boursorama / Company Data

The French banking system is complex, comprising circa. 330 separate banks (Federation Bancaire Française, 2023) grouped into four main sections: the Banque de France, deposit banks, investment banks, and banks providing medium and long-term loans. BNP Paribas holds a comfortable lead over its French peers, recording consistently higher revenues generated through a broader asset base. The group is largest amongst its peers in size and market capitalization, benefitting from a strong international presence as well as a broader activity portfolio, compared with some of its peers such as Crédit Agricole or BPCE which are more domestically oriented, with stronger focus on retail banking and insurance activities. In terms of risk profile, BNPP is exposed to various risks from its international operations and investment banking activities, translating into lower solvency ratios in terms of capital requirement. Despite the higher burden from RWAs, BNPP maintains the lowest NPL ratio amongst its peers, highlighting a stronger lending efficiency.

According to Banque de France, as of year-end 2021, the leading banks (BNP Paribas, Credit Agricole, BPCE Group, Société Générale, Crédit Mutuel and HSBC Continental Europe) accounted for circa 86% of France's total banking sector. Their footprint extends beyond national borders as these institutions qualify as "global systemically important banks" and are directly supervised by the ECB. These banks have a particularly strong presence in core developed countries of the eurozone, developing a pattern of increasing internationalization in order to mitigate geographical risks and access new developed markets. A shift in lucrative activities from traditional intermediation activities towards new commissions and trading activity (such as capital and forex markets) propelled the large French banks onto the European stage. These have significantly increased their foreign claims in the euro area (excl. France) whose share increased from 27% of total foreign claims back in 2005 to 39% in 2021 (despite a decreasing eurozone contribution to global GDP from 17% to 12%).

Figure 4.3: Key data on foreign claims from French banking groups



SECTION 5

Financial analysis of 2022 consolidated results

5.1. Income Statement – P&L Overview

BNP Paribas has historically maintained solid profitability and lower revenue volatility in comparison with its closer global peers, leveraging on its high degree of diversification and leadership position. The group published record results in 2022, having successfully weathered the pandemic's structural impacts.

Figure 5.1: BNP Paribas Income breakdown by business segment

	2022			2021*			2020*			2019*	
In millions of euros	*Sales*	*% of sales*	*Growth yoy*	*Sales*	*% of sales*	*Growth yoy*	*Sales*	*% of sales*	*Growth yoy*	*Sales*	*% of sales*
Corporate & Institutional Banking	**16,465**	**32.66%**	**15.7%**	**14,236**	**30.79%**	**18.7%**	**13,763**	**31.1%**	**118.7%**	**12,081**	**27.1%**
o/w Global Banking	5,218	10.3%	2.6%	5,087	11.0%	7.6%	4,727	10.7%	9.6%	4,312	9.7%
o/w Global Markets	8,660	17.2%	27.0%	6,820	14.8%	0.0%	6,819	15.4%	22.4%	5,571	12.5%
o/w Securities Services	2,587	5.1%	11.1%	2,329	5.0%	5.1%	2,217	5.0%	0.9%	2,198	4.9%
Commercial, Personal Banking & Services	**27,562**	**54.7%**	**9.3%**	**25,216**	**54.5%**	**0.2%**	**25,162**	**56.8%**	**-3.4%**	**26,057**	**58.4%**
Commercial & Personal Banking (Eurozone)	**12,947**	**25.7%**	**5.2%**	**12,303**	**26.6%**	**-17.6%**	**14,932**	**33.7%**	**-2.2%**	**15,262**	**34.2%**
o/w Commercial & Personal Banking (France)	6,361	12.6%	6.6%	5,966	12.9%	5.3%	5,667	12.8%	-38.5%	9,219	20.7%
o/w BNL Banca Commerciale (Italy)	2,548	5.1%	-1.7%	2,591	5.6%	0.2%	2,586	5.8%	-3.9%	2,690	6.0%
o/w Commercial & Personal Banking (Belgium)	3,577	7.1%	7.4%	3,332	7.2%	2.0%	3,267	7.4%	-2.6%	3,353	7.5%
o/w Commercial & Personal Banking (Luxembourg	461	0.9%	11.4%	414	0.9%	-87.9%	3,412	7.7%	-	-	-
Commercial & Personal Banking (RoW)	**4,953**	**9.8%**	**15.5%**	**4,287**	**9.3%**	**-9.7%**	**4,745**	**10.7%**	**-5.1%**	**4,999**	**11.2%**
o/w Europe-Mediterranean	2,321	4.6%	20.5%	1,926	4.2%	-17.9%	2,346	5.3%	-12.8%	2,690	6.0%
o/w Bank of the West (USA)	2,632	5.2%	11.5%	2,361	5.1%	-1.6%	2,399	5.4%	3.9%	2,309	5.2%
Specialized Businesses	**9,662**	**19.2%**	**12.0%**	**8,626**	**18.7%**	**57.3%**	**5,485**	**12.4%**	**-5.4%**	**5,796**	**13.0%**
o/w Personnal Finance	5,387	10.7%	3.3%	5,216	11.3%	-4.9%	5,485	12.4%	-5.4%	5,796	13.0%
o/w Arval & Leasing Solutions	3,438	6.8%	28.5%	2,675	5.8%	-	-	-	-	-	-
o/w New Digital Business & Personal Investors	837	1.7%	13.9%	735	1.6%	-	-	-	-	-	-
Investment & Protections Services	**6,670**	**13.2%**	**3.0%**	**6,476**	**14.0%**	**13.5%**	**5,707**	**12.9%**	**-10.7%**	**6,388**	**14.3%**
o/w Insurance	2,774	5.5%	-1.9%	2,827	6.1%	3.7%	2,725	6.2%	-11.2%	3,068	6.9%
o/w Wealth Management	1,612	3.2%	9.2%	1,476	3.2%	-	2,982	6.74%	-	3,320	-
o/w Asset Management	2,284	4.5%	5.1%	2,173	4.7%	-					
Other Activities	**(279)**	**-0.6%**	**-**	**308**	**0.7%**	**-**	**(358)**	**-0.8%**	**-**	**71**	**0.2%**
Consolidated Income	**50,418**	**100.0%**	**9.0%**	**46,236**	**100.0%**	**4.4%**	**44,274**	**100.0%**	**-0.7%**	**44,597**	**100.0%**

*Please note the business segment composition was reorganized in 2022, structuraly changing from 2 to 3 main segments.

Source: Company Data

In 2022, BNP Paribas reported consolidated revenues of €50,418 million, representing a robust year-on-year increase of +9.0% (+6.6% at constant scope and exchange rates), or +19% excluding exceptional items with a negative impact in 2022[3]. This revenue growth was propelled by heightened activity across all business segments, with the bank's retail activity remaining the primary revenue source, contributing to over half of the total revenues for the year:

Corporate & Institutional Banking (circa. 32.7% of total revenues) recorded significant double-digit growth, carried by strong client demand in rates, foreign exchange, and commodity derivatives within Global Markets. Global Banking revenues grew despite challenging market conditions, strengthened by the APAC region compensating for a declining market in Europe. Securities Services activity was

[3] Negative impact from Corporate Center undisclosed revenues (i.e. €-279m).

supported by new mandates in Europe and favorable momentum in Private Capital, driven by increasing interest rates.

CIB activity, despite its significant scale, has historically represented a comparatively smaller activity share than its global peers, representing around 16% of the total group revenues over the past two years (source: company data), against an industry average of 30% for Global Investment Banks (source: Moody's). Nevertheless, CIB provides a stable revenue base supported by higher fees and commissions, leveraging the bank's leading position in cash management and trade finance in Europe, as well as global diversification in Asia-Pacific and the United States.

Commercial, Personal Banking & Services (circa. 54.7% of total revenues) emerged as the primary income contributor, with a notable growth of +9.3%, driven by the retail business both within the eurozone and the RoW, along with an expanding Arval activity. CPBS recorded revenue expansion across most areas, with favorable interest-rate conditions and a +6.6% increase in deposits. Specialized Businesses, was primarily led by Arval, achieving remarkable growth attributed to the expansion of the vehicle fleet and elevated used car prices.

CPBS segment remains the backbone of the group, with historically robust operations in France, Italy, Belgium, and Luxembourg, exhibiting resilience to macroeconomic challenges. Revenues have consistently remained solid despite adverse economic growth in Europe, a persistently low-interest environment over the past decade, and the negative impact from the military crisis in Ukraine.

Investment & Protection Services (circa. 13.2% of total revenues) grew by +3%, driven by a positive contribution from Wealth Management, which offset the stagnation in Insurance and Asset Management markets. Wealth Management achieved strong results due to dynamic vehicle and Real Estate markets. In Asset Management, the positive impact from exchange rates (€+9.3 billion) mitigated an unfavorable market performance, which resulted in reduced volumes of assets under management (-6.9% year-on-year).

Figure 5.2: BNP Paribas key profitability figures

FYE 31/12 (€M)	2020	2021	2022	Δ (€m)	Δ (%)	CAGR 20-22
			Lastest year			
Interest income	31,169	29,518	41,082	11,564	39%	44%
Interest expense	(11,883)	(10,280)	(20,251)	(9,971)	97%	57%
Commission income	13,304	15,037	14,622	(415)	-3%	37%
Comission expense	(3,725)	(4,675)	(4,444)	231	-5%	40%
Net gains on financial intruments	6,988	7,777	9,455	1,678	22%	45%
Net income from insurance activities	4,114	4,332	4,296	(36)	-1%	35%
Net income (expense) from other activities	1,812	2,053	2,871	818	40%	53%
Revenues from continuing activities	**41,779**	**43,762**	**47,631**	**3,869**	**8.8%**	**38%**
% evolution yoy	*14.5%*	*4.7%*	*8.8%*			
Personnel expenses	(15,942)	(16,417)	(17,605)	(1,188)	7%	37%
Other operating expenses	(10,301)	(10,705)	(11,696)	(991)	9%	38%
Depr. & amort. / impairments of PP&E and intagible assets	(2,262)	(2,344)	(2,394)	(50)	2%	35%
Gross operating income	**13,274**	**14,296**	**15,936**	**1,640**	**11%**	**40%**
% Margin	*31.8%*	*32.7%*	*33.5%*			
Cost of risk	**(5,395)**	**(2,971)**	**(3,004)**	**(33)**	**1%**	**19%**
% of Gross operating income	*40.6%*	*20.8%*	*18.9%*			
o/w net allowances to impairment	(4,960)	(2,591)	(2,444)	147	-6%	16%
o/w recoveries on loans and receivables written-off	369	321	343	22	7%	31%
o/w losses on irrecoverable loans	(804)	(701)	(714)	(13)	2%	30%
o/w act on assistance to borrowers in Poland (exceptional)	-	-	(189)	-	-	-
Corporate income tax	(2,301)	(3,584)	(3,716)	(132)	4%	54%
Other income/expenses	1,458	1,419	695	(724)	-51%	16%
Net income from discontinued activities	379	720	686	(34)	-5%	60%
Net Income	**7,415**	**9,880**	**10,597**	**717**	**7%**	**48%**
Net Margin	*17.7%*	*22.6%*	*22.2%*			

Source: Company data

BNP Paribas' resilient business model delivered a substantial 7.5% increase in net income year-on-year, maintaining a stable net margin of 22.2%. This disciplined growth, accompanied by a jaws effect[4] of 0.7 points (1.5 points excluding the contribution to the Single Resolution Fund, i.e. €1,256 million), Additional cost savings of approximately €500 million in 2022 and the benefits of an optimized operating model helped counterbalance the SRF yearly expense.

The group's prudent risk management policy is displayed in its low cost of risk-to-revenues ratio, which stands around 19%, significantly reduced since the pandemic's impact on 2020 results and ranking amongst the lowest in Europe. Furthermore, the business model demonstrated resilience in the face of rising inflationary pressures, particularly in personnel expenses, which constitute nearly 37% of total revenues and have grown at a CAGR of 37% between 2020 and 2022.

[4] The jaws ratio factors a bank's income and operation expense growth, leading to a positive jaws effect if income growth exceeds expense growth.

5.2 Balance Sheet – Asset Base

As of year-end 2022, the BNP Paribas Group reported a total consolidated balance sheet valued at €2,666 million, reflecting a modest year-on-year increase of 1%. The primary components of the group's asset base are cash and balances held at central banks, financial instruments, loans and advances to customers, debt securities, and assets associated with insurance activities, collectively accounting for 91% of total assets.

Figure 5.3: BNP Paribas breakdown of Assets

€ billions	2019	2020	2021	2022	yoy Δ (%)	Total (%)
Cash and balances at central banks	**155**	**309**	**348**	**319**	**-8.3%**	**12.0%**
Financial instruments	**588**	**705**	**691**	**709**	**2.6%**	**26.6%**
Securities	*132*	*168*	*192*	*166*	*-13.5%*	*6.2%*
Loans and repurchase agreements	*197*	*245*	*250*	*191*	*-23.6%*	*7.2%*
Derivative financial instruments	*247*	*277*	*240*	*327*	*36.3%*	*12.3%*
Derivatives used for hedging purposes	*12*	*15*	*9*	*25*	*177.8%*	*0.9%*
Financial assets	**988**	**1,005**	**986**	**1,042**	**5.7%**	**39.1%**
Securities at fair value (through equity)	*50*	*56*	*39*	*36*	*-7.7%*	*1.4%*
Equity securities	*2*	*2*	*2*	*2*	*0.0%*	*0.1%*
Loans and advances to credit institutions	*22*	*19*	*22*	*33*	*50.0%*	*1.2%*
Loans and advances to customers	*806*	*810*	*814*	*857*	*5.3%*	*32.1%*
Debt securities at amortised cost	*108*	*118*	*109*	*114*	*4.6%*	*4.3%*
Financial investments from insurance activities	**258**	**265**	**281**	**247**	**-12.1%**	**9.3%**
Accrued income	**114**	**141**	**179**	**209**	**16.8%**	**7.8%**
Current and deferred tax assets	**7**	**6**	**6**	**6**	**0.0%**	**0.2%**
Other assets	**55**	**57**	**53**	**47**	**-11.3%**	**1.8%**
Assets held for sale	**-**	**-**	**91**	**87**	**-4.4%**	**3.3%**
Total Assets	**2,165**	**2,488**	**2,635**	**2,666**	**1.2%**	**100.0%**

Source: Company data

5.3 Balance Sheet – Liabilities and Equity

As of year-end 2022, the bank's liabilities predominantly consisted of deposits from customers, representing approximately 38% of the total balance-sheet, and liabilities to credit institutions, accounting for approximately 5%. Additionally, derivative instruments, including hedging derivatives, constituted approximately 13% of the liabilities.

The bank's amounts due to credit institutions primarily consist of interbank loans, demand deposits, and repurchase agreements. Notably, there was a decrease of approximately 25% year-on-year in these deposits, representing a total of €125 billion. Deposits from customers, include on-demand deposits, term accounts, savings accounts, and repurchase agreements.

Figure 5.4: BNP Paribas breakdown of Liabilities and Equity

€ billions	2019	2020	2021	2022	yoy Δ (%)	Total (%)
Total Equity	**112**	**117**	**123**	**127**	**3.3%**	**4.8%**
Shareholder's equity	*108*	*113*	*118*	*122*	*3.4%*	*4.6%*
Minority interests	*4*	*4*	*5*	*5*	*0.0%*	*0.2%*
Deposits from central banks	**2**	**1**	**1**	**3**	**200.0%**	**0.1%**
Financial instruments	**596**	**743**	**722**	**743**	**2.9%**	**27.9%**
Securities at fair value (through equity)	*65*	*94*	*112*	*99*	*-11.6%*	*3.7%*
Deposits and repurchase agreements	*215*	*289*	*293*	*234*	*-20.1%*	*8.8%*
Issued debt securities	*64*	*64*	*70*	*70*	*0.0%*	*2.6%*
Derivative financial instruments	*238*	*283*	*237*	*300*	*26.6%*	*11.3%*
Derivatives used for hedging purposes	*14*	*13*	*10*	*40*	*300.0%*	*1.5%*
Financial liabilities	**1,098**	**1,259**	**1,299**	**1,311**	**0.9%**	**49.2%**
Deposits from credit institutions	*85*	*148*	*166*	*125*	*-24.7%*	*4.7%*
Deposits from customers	*835*	*941*	*958*	*1,008*	*5.2%*	*37.8%*
Debt securities at amortised cost	*158*	*148*	*150*	*154*	*2.7%*	*5.8%*
Subordinated debt	*20*	*22*	*25*	*24*	*-4.0%*	*0.9%*
Technical reserves and other insurance	**237**	**241**	**255**	**227**	**-11.0%**	**8.5%**
Accrued expenses	**103**	**108**	**145**	**185**	**27.6%**	**6.9%**
Current and deferred tax liabilities	**4**	**3**	**3**	**3**	**0.0%**	**0.1%**
Provisions for contingencies and charges	**9**	**10**	**10**	**10**	**0.0%**	**0.4%**
Adj. on interest-rate risk hedged portfolios	**4**	**6**	**2**	**(20)**	**-1100.0%**	**-0.8%**
Liabilities from assets held for sale	**-**	**-**	**75**	**77**	**2.7%**	**2.9%**
Total Liabilities	**2,053**	**2,371**	**2,512**	**2,539**	**1.1%**	**100.0%**
Total Liabilities and Equity	**2,165**	**2,488**	**2,635**	**2,666**	**1.2%**	**100.0%**

Source: Company data

5.4 Balance Sheet – Solvency

Historically, the BNP Paribas group has consistently maintained a solid financial structure, demonstrated by a Common Equity Tier 1 (CET1) ratio of 12.3% at the end of 2022, strongly contrasting a ratio below 10% in 2011. On a yearly timeframe, the CET1 ratio decreased by approximately -60 basis points from the previous year, summarized as follows:

- A positive increase of +30 basis points, given a 60% retention of the yearly 2022 results, while considering organic growth in risk-weighted assets.
- A decrease of -20 basis points due to accelerated growth.
- A decline of -40 basis points attributed to the impact on Other Comprehensive Income (OCI) resulting from market price fluctuations.
- A reduction of -30 basis points stemming from updates in models and regulatory changes.

Additionally, at the end of 2022, the bank's leverage ratio stood at 4.4%, coupled with a readily accessible liquidity reserve of €461 billion, providing over one year's worth of flexibility (underlining the institution's robust liquidity position).

Figure 5.5: BNP Paribas key solvency ratios

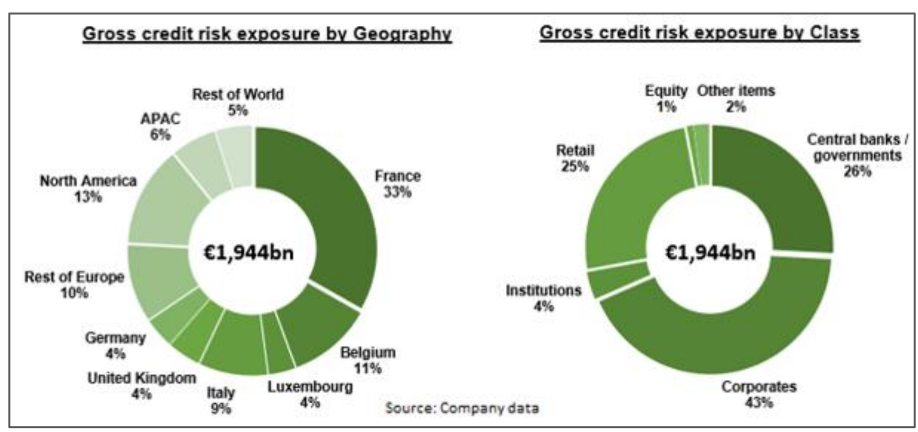
Solvency Ratios

Ratio	Value (€m) 2021	Value (€m) 2022	Ratio (%) 2021	Ratio (%) 2022	Minimum Requirement
CET1 Capital	91,976	91,828	12.89%	12.33%	4.50%
Tier 1 Capital	100,255	103,445	14.05%	13.89%	6.00%
Total Capital	117,256	120,562	16.43%	16.19%	8.00%
Leverage Ratio	2,442,524	2,373,844	4.10%	4.36%	3.75%
Risk-Weighed Assets (RWA)	713,671	744,851	-	-	-
Credit Risk RWA	*553,861*	*579,635*	*77.61%*	*77.82%*	-
Counterparty Risk RWA	*40,437*	*42,320*	*5.67%*	*5.68%*	-
Operational Risk RWA	*63,209*	*61,656*	*8.86%*	*8.28%*	-
Market Risk RWA	*24,839*	*25,543*	*3.48%*	*3.43%*	-
Other RWA	*31,326*	*35,697*	*4.39%*	*4.79%*	-

Source: Company data

At of the end of 2022, BNP Paribas' gross exposure to credit risk had increased to €1,944 billion in comparison to the previous year's €1,897 billion. This increase reflects the bank's expanding day-to-day operations on a broad scale. The credit risk exposure encompasses all credit risk exposures and displays a good degree of diversification, with domestic activity constituting approximately one-third of the total exposure, while the rest is spread across various geographical regions. Nevertheless, there is a substantial concentration in Europe, representing 76% of the overall exposure. In terms of external class mitigation, the majority of exposures maintain a reasonably sound diversification between Retail, Corporate, and Central Banks.

Figure 5.6: BNP Paribas breakdown of gross risk exposure



It is important to note, the exposure amounts are based on the gross carrying value of financial assets, thus do not account for collateral obtained by the group during its standard credit risk management procedures. The bank risk diversification strategy prevents any single counterparty from posing an excessive concentration of credit risk due to the diversified client base in terms of size, industry, and geography.

5.5 SWOT analysis

Figure 5.7: BNP Paribas SWOT analysis

Credit Strengths

- Strong retail and commercial banking franchises mainly in advanced economies / well-diversified business model.
- Good regulatory capitalisation underpinned by strong earnings generation capacity and resilience to most plausible stress scenarios.
- Strong liquidity, supported by a well-diversified and stable deposit base and lengthening maturity of wholesale market funding

Weaknesses

- Pressure on earnings from persistent inflationary environment in Europe and ongoing geopolitical conflicts.
- Large global Capital Markets segment exposed to volatile risks.
- Leverage ratio lower than its peers.

Opportunities

- Capitalizing on solid asset quality and low cost of risk to gain market share as the economic and banking environment stabilizes post several crises.
- The group's medium-term plan (GTS) focusing on disciplined organic growth while gaining market share at marginal cost - generating new growth opportunities and potential economies of scale.

Threats

- Material deterioration in the bank's main markets (France, Italy, Benelux).
- Inflationary and interest-rate pressures leading to lower levels of business as households hold lower disposable income and businesses might be under government imposed caps on commodity volumes..

SECTION 6

NPL Management Strategies

Effective NPL management requires a meticulous set of strategies aimed at prevention, resolution, and recovery. Banks employ a wide range of techniques, including loan restructuring, collateral liquidation, and debt write-offs. Furthermore, proactive risk management, early intervention, and adequate provisioning are essential components of successful NPL management.

Best practices incorporate clear internal process, dedicated NPL management teams, data-driven and decision-making procedures, and close collaboration between departments such as credit risk, legal, and collections. Strategies such as securitization, asset management companies, and loan sales have been employed by global banks to optimize NPLs and improve their balance sheets.

6.1. ECB Guidance on Managing Non-Performing Loans

In 2017, the ECB published a report providing a comprehensive set of guidance and best practices for managing a bank's NPL portfolio, in an effort to improve asset quality issues in the European banking system. Joint supervisory teams (JSTs) were formed to conduct a holistic assessment around two focus areas: asset quality review and stress testing. The study represented an effort to increase regulatory engagement on rising levels of NPLs, posing significant risks towards the euro area banks. The JSTs observed, compiled and analyzed different approaches from banks in regards to the identification, measuring, management and write-off of NPLs, with the data subsequently used to develop a more extensive and consistent supervisory approach to tackling NPLs. As per the report, the bank's strategic internal objectives should cover four main axes:

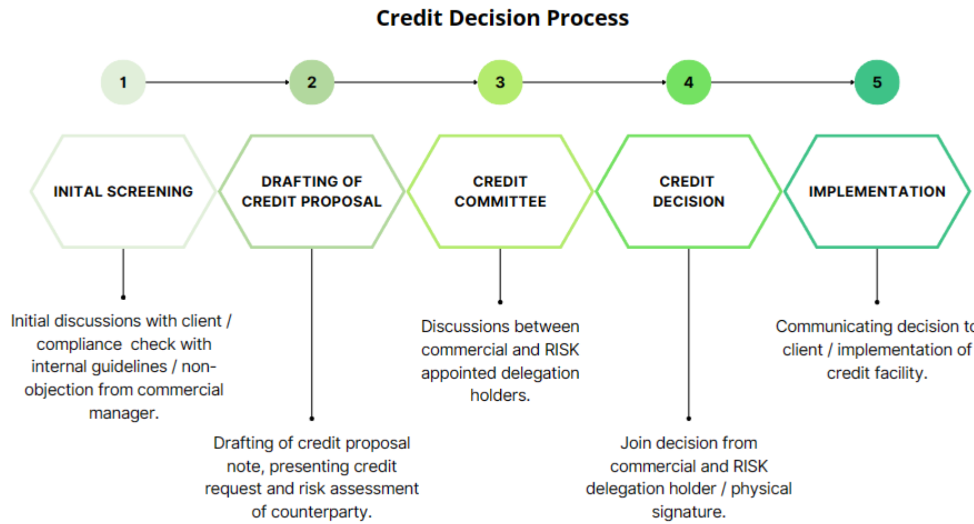
- Overall assessment of the operating environment in terms of internal efficiency for managing NPLs (maximizing recovery), and external factors impacting NPLs and capital base.
- Designing coherent targets in terms of operational capabilities (qualitative), and gradual reduction of NPLs (quantitative) over different time-horizons.
- Overhauling organizational structure of the bank in order to improve operational efficiency.
- Implementing and regularly reviewing NPL strategy into daily management processes, on top of independent monitoring of practices and targets.

The overall strategic framework should include specific time-bound NPL targets embedded in a comprehensive operational plan, subject to internal approval from management and a periodic (preferably annual) review.

6.2 Risk Assessment and Monitoring Practices at BNP Paribas

BNP Paribas enacts a structured Global Credit Policy across all activities generating credit or counterparty risk. These guidelines outline risk assessment practices, ethical standards, and compliance requirements. It also covers targeted risks depending on country, economic sector, client type or nature of the transaction. All lending decisions within the bank are subject to approval by a manager or representative from the commercial/business team as well as a designated RISK representative based on a credit delegation framework.

Figure 6.1: BNP Paribas internal credit decision process (standard corporate request)



A comprehensive monitoring structure based around control units is tasked with ensuring compliance with credit decisions and the reliability of the various credit risk reports produced across the credit spectrum. Daily reports and early warning algorithms identify deteriorating credit profiles which should be closely supervised by the Risk teams. Non-performing loans and those under credit watchlist undergo increased scrutiny with quarterly committees, whilst doubtful debt committees are held on a monthly basis to adjust provisioning for doubtful loans. Additionally, in accordance with ECB guidelines implemented in 2018, punctual checks are performed surrounding loans granted to highly leveraged client.

In order to attribute a visual and quantitative risk metric to each counterparty, BNP Paribas has a comprehensive internal rating system in line with regulatory requirements from the ECB. For loans to financial institutions, sovereign entities and corporates, the algorithm is based on three main parameters: (i) the counterparty's probability of default (PD) materialized into a rating ranging from 12 (default) to 1+ (highest), (ii) the Global Recovery Rate (GRR) estimating the percentage of recovery excluding any security packages, (iii) the Loss Given Default (LGD) projecting the expected loss amount in case of default, and Credit Conversion Factor (CCF) integrating the off-balance sheet exposure. These

indicators undergo confirmation or adjustments during the presentation of each new transaction or the annual review process, during which a full reevaluation of the counterparty's credit profile, commercial strategy, financial performance, and internal rating is performed based on the latest available data. Whilst at retail counterparty level the rating methods are applied automatically, at corporate level the proposed rating metrics are subject to a common approval from both Commercial and Risk divisions.

6.3 Credit Risk Mitigation and Diversification

Central to BNP Paribas' NPL management strategy is its focus on proactive risk mitigation and cooperation with the borrower. The bank places strong emphasis on early identification of potential NPLs through thorough credit risk assessment and continuous monitoring of a borrower's financial health. By detecting signs of distress at an early stage, BNP Paribas aims to intervene with loan restructuring programs tailored to the individual borrower's circumstances. Through open dialogue with distressed borrowers, the bank seeks to explore viable solutions, such as maturity adjustments and interest rate modifications, to enhance the likelihood of successful loan recovery and reduce the probability of default. Overall, BNP Paribas closely follows regulatory requirements and international best practices, ensuring a comprehensive approach to managing its loan portfolio.

6.4 Stress Testing Methodology

BNP Paribas has established a comprehensive stress testing framework that plays a significant role in its risk management and financial monitoring system. This framework serves multiple purposes, including forward-looking risk management, and optimization of resources employed. Two primary types of stress tests are conducted: regulatory stress tests, mandated by supervisory authorities, and internal stress tests. Internal stress tests, designed for risk anticipation, are crucial for forward-looking risk management, including credit, market, counterparty, interest rate, operational, activity, and liquidity risks. Their results contribute to defining the bank's risk appetite and ongoing risk profile assessments. They are presented to Group Executive Management and the Board of Directors' Internal Control, Risk Management, and Compliance Committees. Stress tests also form an integral part of the annual budget process and are consolidated at the group level to assess their impact on capital, liquidity, and earnings. These budget stress tests involve baseline and adverse macroeconomic scenarios and result in a range of projected solvency ratios. In addition to budget scenarios, the bank conducts reverse stress tests to identify factors that could lead to a drop in solvency ratios and how to remedy those scenarios.

SECTION 7

Regulatory and Economic Context

The subprime mortgage crisis of 2007 exposed critical vulnerabilities in the global financial system, including a lax lending system and the overtrade of complex financial instruments without a proper understanding of the underlying risks. Prior to this global crisis, the international banking supervision framework had been reviewed in 2004 with the implementation of the Basel II accords aiming at improving control and transparency of capital requirements for banks. Nevertheless, the drastic overhaul forcing banks to develop new sophisticated models, prompted some pushback given the complexity of the new railguards which did not successfully identify and mitigate the subprime crisis. Thus, a new framework was drafted in the form of the Basel III convention, aiming at addressing the shortcomings of the previous accords, presenting a more comprehensive structure.

Figure 7.1: BNP Paribas internal credit decision process (standard corporate request)

Pillar 1			Pillar 2	Pillar 3
Capital	Risk coverage	Containing leverage	Risk management and supervision	Market discipline
Quality and level of capital • **Raising minimum common equity** to 4.5% of risk-weighted assets, after deductions. • **A capital conservation buffer** comprising common equity of 2.5% of risk-weighted assets brings the total common equity standard to 7%. Constraints on a bank's discretionary distributions will be imposed when it falls into the buffer range. • **A countercyclical buffer** within a range of 0–2.5% comprising common equity will apply when credit growth is judged to result in an unacceptable build-up of systematic risk. **Capital loss absorption at the point of non-viability** Allowing capital instruments to be written off or converted to common shares if the bank is judged to be non-viable. This will reduce moral hazard by increasing the private sector's contribution to resolving future banking crises.	**Revisions to the standardised approaches** for calculating • **credit risk;** • **market risk;** • **credit valuation adjustment risk;** and • **operational risk** mean greater risk-sensitivity and comparability. **Constraints on using internal models** aim to reduce unwarranted variability in banks' calculations of risk-weighted assets. **Counterparty credit risk** More stringent requirements for measuring exposure; capital incentives to use central counterparties for derivatives; a new standardised approach; and higher capital for inter-financial sector exposures. **Securitisations** Reducing reliance on external ratings, simplifying and limiting the number of approaches for calculating capital charges and increasing requirements for riskier exposures. **Capital requirements for exposures to central counterparties (CCPs) and equity investments in funds** to ensure adequate capitalisation and support a resilient financial system. A **revised output floor**, based on Basel III standardised approaches, limits the regulatory capital benefits that a bank using internal models can derive relative to the standardised approaches.	A non-risk-based **leverage ratio** including off-balance sheet exposures is meant to serve as a backstop to the risk-based capital requirement. It also helps contain system-wide build-up of leverage.	**Supplemental Pillar 2 requirements** address firm-wide governance and risk management, including the risk of off-balance sheet exposures and securitisation activities, sound compensation practices, valuation practices, stress testing, corporate governance and supervisory colleges. **Interest rate risk in the banking book (IRRBB)** Extensive guidance on expectations for a bank's IRRBB management process: enhanced disclosure requirements; stricter threshold for identifying outlier banks; updated standardised approach.	**Revised Pillar 3 disclosure requirements** Consolidated and enhanced framework, covering all the reforms to the Basel framework. Introduces a dashboard of banks' key prudential metrics.

Source: Bank for International Settlements (BIS) website

7.1. Basel III: Pillar 1 – Minimum Capital Requirements

The Basel Committee on Banking Supervision (BCBS) is a global standard regulator comprised of several central banks in different jurisdictions under the regulatory zeal of the Bank for International Settlements (BIS), regarded as the "central bank of central banks". As a response to the aftermath of the subprime crisis, in 2010 the BCBS introduced the Basel III agreements, a comprehensive set of reform measures and directives, developed to strengthen the regulation, supervision and risk management of the banking sector (source: European Banking Authority). The reforms were grouped into 3 distinct segments (i.e. pillars), with the first one holding a particular focus on minimum capital requirements for individual banks. Pillar 1 (Minimum Capital Requirements) defines eligible capital and the methodology for measuring capital requirement adequacy in the framework of risk assessment (credit, market, operational risks). The calculations were tightened through the establishment of two separate capital categories:

- Tier 1 capital comprises a bank's fundamental capital, including its equity and reserves disclosed in its financial statements. These core funds, represent a liquidity cushion to absorb adverse conditions, without having to cease operations.
- Tier 2 capital represents supplementary capital such as undisclosed reserves and unsecured subordinated debt instruments (considered less liquid than Tier 1 capital) used to absorb losses in a liquidation scenario.

The bank's overall capital adequacy (minimum capital ratio) is determined by combining both tiers, having to comply with a minimum threshold of 8% (minimum of 6% for Tier 1 capital) relatively to the bank's risk-weighted assets (RWA). Revisions in this policy from Basel II to Basel III include the introduction of a CET1 ratio, the rise in minimum Tier 1 capital ratio from 4% to 6%, and the suppression of Tier 3 capital which was deemed too risky to be included in the model (such as low-quality, subordinated, and unsecured debt).

Figure 7.2: Key minimum requirement ratios embedded in Basel III framework

		Nature of capital	Formula	Minimum requirement Basel II	Minimum requirement Basel III
Tier 1 capital (CET1 + AT1)	Common Equity Tier 1 (CET1)	Sum of common shares and stock surplus, retianed earnings, other comprehensive income, qualifying minority interest and regulatory adjustments.	$\frac{CET1}{Total\ RWAs}$	-	≥ 4.5%
	Additional Tier 1 (AT1)	Less permanent instruments such as certain types of preferred shares and contingent convertible bond.	$\frac{CET1 + AT1}{Total\ RWAs}$	≥ 4.0%	≥ 6.0%
Minimum Capital Requirement	Tier 2 capital	Tier 2 - less secure capital such as revaluation reserves, hybrid instruments, and subordinated term debt.	$\frac{CET1 + AT1 + Tier\ 2}{Total\ RWAs}$	≥ 8%	≥ 8%

Source: BIS

7.2 Basel III: Pillar 2 – Risk Management and Supervision

The second pillar of the Basel III framework establishes additional capital requirements for banks, supplementary to Pillar 1 minimum capital requirements in order to cover a wider range of risks. This guidance outlines the capital levels necessary for banks to withstand periods of financial stress. These include the risk of off-balance sheet exposures, securitization activities, reasonable compensation schemes, valuation practices, stress testing, adequate corporate governance and supervisory frameworks. These amounts are established during the annual SREP assessment performed by the ECB at an individual level, with the following thresholds for the main French banks (all fully compliant):

Figure 7.3: Pillar 2 requirements imposed by ECB on main French banks

Name of institution	2020 P2R applicable in 2021		2021 P2R applicable in 2022		P2R applicable in 2023	
	Total	of which minimum CET1	Total	of which minimum CET1	Total	of which minimum CET1
BNP Paribas S.A.	1.25%	0.70%	1.32%	0.74%	1.57%	0.88%
BPCE S.A.	1.75%	0.98%	2.00%	1.13%	2.00%	1.13%
Crédit Agricole S.A.	1.50%	0.84%	1.50%	0.84%	1.50%	0.84%
HSBC Group in Continental Europe	3.00%	1.69%	3.24%	1.82%	n.a.	n.a.
La Banque Postale	2.00%	1.13%	2.00%	1.13%	2.00%	1.13%
Société Générale S.A.	1.75%	0.98%	2.12%	1.19%	2.14%	1.20%

Source: ECB data published 06/10/2023

7.3 Basel III: Pillar 3 – Disclosure Requirements

Under the third pillar of the Basel III accords, credit institutions must adhere to a comprehensive set of public disclosure requirements, aiming at providing external stakeholders with sufficient information and transparency to assess a bank's material risks and capital adequacy. The mandatory disclosure data focuses on three main axes:

- Credit risk, operational risk, the leverage ratio, and credit valuation adjustment (CVA) risk.
- Risk-weighted assets (RWAs) as calculated by the bank's internal models and according to the standardized approaches.
- Overview of risk management, RWAs and key prudential metrics.

At the level of French banking groups, these mandatory disclosure requirements are published in a fully dedicated section in the yearly Universal Registration Document publications.

7.4 Single Resolution Fund (SRF)

The Single Resolution Fund (SRF) is a core component of the European banking union's framework establishing financial stability. It was implemented to ensure the efficient support of failing banks within the eurozone, contributing to the overall stability and resilience of the banking system. More precisely, the SRF was created in response to the global financial crisis to prevent taxpayer-funded bailouts of troubled banks. It shifts the burden of salvaging failing banks from taxpayers to the financial industry itself. As such, major European banks are required to pay yearly contributions to the SRF based on their size and risk profile. These contributions are determined to ensure that the fund has adequate resources to handle bank resolutions. The SRF has been gradually expanding over an 8-year period, spanning from 2016 to 2023. During this timeframe, the fund is expected to reach a minimum level of 1% of the total covered deposits of credit institutions in all twenty-one Banking Union countries. As of July 2021, the SRF had accumulated a fund size of approximately €52 billion.

SECTION 8

Solvency and Non-Performing Loan Benchmark

8.1. Benchmark data for BNP Paribas and French Peers

In order to establish a coherent comparison basis, three main French banking groups have been selected alongside BNP Paribas (i.e. Credit Agricole, Groupe BPCE, Societe Generale), bearing a similar profile in terms of scope and activity.

Figure 8.1: Overview of key risk determinants

	BNP PARIBAS	CRÉDIT AGRICOLE	GROUPE BPCE	SOCIETE GENERALE
Activity portfolio % of revenues	Corporate Institutional Banking (CIB): 32% Retail Banking: 55% Investment and Insurance: 13%	Corporate Institutional Banking (CIB): 30% Retail Banking: 30% Investment and Insurance: 40%	Corporate Institutional Banking (CIB): 28% Retail / Insurance: 70% Corporate Center: 2%	Corporate Institutional Banking (CIB): 36% Retail Banking: 50% Investment and Insurance: 14%
Scope of operations % of revenues	EMEA: 78% Americas (North and South): 13% APAC: 10%	France: 52% Rest of europe: 37% Americas: 5% Africa and Middle-East: 1% APAC: 5%	France: 82% Rest of Europe: 4% North America: 11% Rest of World: 3%	France: 49% Rest of europe: 32% Americas: 7% Africa: 7% APAC: 5%
Risk exposure	Global and international economic conditions due to extensive global operations / risks associated with currency fluctuations, geopolitical events, and regulatory changes.	High exposure to the French market, neertheless also facing several risks associated with its European operations.	Predominantly tied to the domestic French market, influenced by the economic conditions and regulatory environment within France.	Exposure to various international economic and financial risks, including currency fluctuations, geopolitical events, and regulatory changes.

In the benchmark of activity and scope, BNP Paribas stands out as a globally diversified banking conglomerate across a wider spectrum of services including domestic / foreign retail, corporate banking, asset management and investment banking. Its international presence spans across Europe, North America, and the Asia-Pacific region, solidifying its status as one of Europe's largest and most globally expansive banking groups. Société General shares a similar profile across a resembling service and geographical spectrum. In contrast, Groupe BPCE maintains a primary focus on retail banking within the domestic French market generating 82% of revenues in 2022. Through the Banque Populaire and Caisse d'Epargne networks, the BPCE group mainly operates in savings, mortgages, and consumer loans. While it does have limited international operations, Groupe BPCE primarily caters to the domestic customer base, ranking as the third-largest banking group in France and the sixth-largest in Europe. Similarly, Credit Agricole is predominantly active in the French retail market, providing retail banking services, insurance, and asset management. While it has a notable presence in corporate and investment banking, it is relatively minor in comparison to its retail business.

In terms of risk exposure, BNP Paribas faces global and international economic risks due to its extensive global operations. These risks include currency fluctuations, geopolitical events, and regulatory changes across multiple countries. Societe Generale, with a resembling activity array and geographical footprint, faces similar risk factors. Credit Agricole and Groupe BPCE's risk exposure is

predominantly tied to the domestic French market, closely influenced by the economic conditions and regulatory environment within France. Credit Agricole, however, also faces material risks associated with its European operations (to a minor extent).

It is important to note that risk management internal data is in many areas omitted from financial publications. A more comprehensive and holistic comparison basis would require access to internal guidelines and algorithms from all institutions. Therefore, the above points merely provide a general overview of potential divergences in risk management approaches based on their publicly available information and known characteristics.

Figure 8.2: Solvency and capital benchmark from leading French banking institutions

Indicator name (figures in m)		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	CAGR 2011-22
CET1 Capital	[average]	**62,702**	**64,119**	**62,087**	**57,551**	**53,933**	**52,693**	**51,644**	**48,091**	**45,119**	**50,334**	**64,700**	**58,900**	**0.52%**
1. BNP Paribas		91,828	91,976	88,800	81,200	76,200	76,760	74,075	69,562	64,519	66,408	64,700	58,900	3.77%
2. Credit Agricole		40,615	44,900	44,180	39,211	35,352	34,769	36,300	33,000	30,456	-	-	-	-
3. Groupe BPCE		69,665	69,800	68,969	65,992	62,178	59,042	55,300	50,900	46,600	-	-	-	-
4. Societe Generale		48,700	49,800	46,400	43,800	42,000	40,200	40,900	38,900	38,900	34,260	-	-	-
Tier 1 Capital	[average]	**69,694**	**69,439**	**68,276**	**63,135**	**60,235**	**58,830**	**58,915**	**54,740**	**51,290**	**48,309**	**49,543**	**46,739**	**3.39%**
1. BNP Paribas		103,445	100,255	98,800	90,315	84,900	85,140	82,152	76,854	70,427	72,944	74,806	70,993	3.19%
2. Credit Agricole		46,865	49,800	50,027	44,311	42,116	41,791	45,400	41,800	40,162	32,739	36,358	37,400	1.90%
3. Groupe BPCE		69,665	69,800	68,977	66,015	62,522	59,490	56,607	52,207	49,969	47,289	46,507	41,100	4.50%
4. Societe Generale		58,800	57,900	55,300	51,900	51,400	48,900	51,500	48,100	44,600	40,263	40,499	37,464	3.83%
Total Capital	[average]	**83,965**	**83,868**	**80,806**	**75,659**	**72,917**	**70,938**	**72,214**	**67,953**	**61,451**	**56,117**	**53,263**	**54,323**	**3.70%**
1. BNP Paribas		120,562	117,256	113,800	103,700	97,200	95,460	92,454	85,920	77,217	77,972	85,452	85,962	2.86%
2. Credit Agricole		63,073	67,000	64,489	56,510	54,684	54,245	60,500	62,000	57,548	47,341	38,588	44,800	2.89%
3. Groupe BPCE		82,424	82,715	78,234	79,325	76,882	74,047	72,300	65,791	60,537	53,195	47,703	45,100	5.15%
4. Societe Generale		69,800	68,500	66,700	63,100	62,900	60,000	63,600	58,100	50,500	45,960	41,308	41,428	4.44%
Risk Weighted Assets	[average]	**481,778**	**473,950**	**453,667**	**439,819**	**430,830**	**420,258**	**421,347**	**420,827**	**413,384**	**385,918**	**381,401**	**421,126**	**1.13%**
1. BNP Paribas		744,852	713,672	695,000	669,000	648,000	645,000	638,207	629,626	614,449	559,632	527,462	589,943	1.96%
2. Credit Agricole		361,000	377,400	336,045	323,678	306,900	296,400	300,700	305,600	293,000	299,569	293,100	333,700	0.66%
3. Groupe BPCE		460,858	441,428	431,222	421,599	392,420	386,331	390,981	391,382	392,887	368,977	380,951	411,585	0.95%
4. Societe Generale		360,400	363,300	352,400	345,000	376,000	353,300	355,500	356,700	353,200	315,495	324,092	349,275	0.26%
CET1 Ratio %	[average]	**13.05**	**13.57**	**13.78**	**13.15**	**12.58**	**12.58**	**12.40**	**11.55**	**10.72**	**10.23**	**11.20**	**9.10**	**3.05%**
1. BNP Paribas		12.33	12.89	12.80	12.10	11.80	11.90	11.60	11.00	10.50	10.70	11.70	9.60	2.11%
2. Credit Agricole		11.24	11.90	13.10	12.10	11.50	11.70	12.10	10.80	10.40	10.00	-	8.60	2.26%
3. Groupe BPCE		15.12	15.80	16.00	15.70	15.80	15.30	14.10	13.00	11.86	-	-	-	-
4. Societe Generale		13.50	13.70	13.20	12.70	11.20	11.40	11.80	11.40	10.10	10.00	10.70	-	-
Tier 1 Ratio %	[average]	**14.57**	**14.74**	**15.20**	**14.50**	**14.10**	**14.13**	**14.25**	**13.18**	**12.63**	**11.80**	**12.50**	**11.03**	**2.35%**
1. BNP Paribas		13.89	14.05	14.20	13.50	13.10	13.20	12.90	12.20	11.50	11.70	13.60	11.60	1.51%
2. Credit Agricole		12.97	13.20	14.90	13.70	13.70	14.10	15.10	13.70	13.70	10.90	11.70	11.20	1.23%
3. Groupe BPCE		15.12	15.80	16.00	15.70	15.90	15.40	14.50	13.30	12.70	12.80	12.20	10.60	3.00%
4. Societe Generale		16.30	15.90	15.70	15.10	13.70	13.80	14.50	13.50	12.60	11.80	12.50	10.70	3.57%
Total Capital Ratio %	[average]	**17.73**	**17.91**	**18.15**	**17.53**	**17.28**	**17.33**	**17.75**	**16.75**	**15.48**	**14.03**	**13.48**	**12.73**	**2.80%**
1. BNP Paribas		16.19	16.43	16.40	15.50	15.00	14.80	14.50	13.60	12.60	12.50	15.50	14.00	1.22%
2. Credit Agricole		17.46	17.70	19.20	17.50	17.80	18.30	20.10	20.30	19.60	15.80	13.20	13.40	2.23%
3. Groupe BPCE		17.88	18.70	18.10	18.80	19.60	19.20	18.50	16.80	15.40	14.40	12.50	11.60	3.67%
4. Societe Generale		19.40	18.80	18.90	18.30	16.70	17.00	17.90	16.30	14.30	13.40	12.70	11.90	4.16%
Total Loans	[average]	**682,324**	**649,471**	**614,081**	**594,805**	**568,044**	**551,796**	**545,145**	**518,815**	**500,503**	**483,275**	**491,617**	**517,763**	**2.33%**
1. BNP Paribas		890,183	844,144	839,577	838,349	800,510	769,405	775,219	735,023	714,999	684,592	683,118	727,501	1.70%
2. Credit Agricole		493,370	464,885	411,805	400,323	376,035	366,942	353,599	337,211	323,012	312,630	325,294	362,490	2.60%
3. Groupe BPCE		838,318	789,768	753,447	699,500	663,380	654,438	634,319	602,119	592,737	574,320	586,479	583,063	3.07%
4. Societe Generale		507,426	499,086	451,494	441,046	432,249	416,399	417,442	400,905	371,263	361,559	371,575	397,996	2.04%
Total Loans / Total Assets	[average]	**36.53%**	**35.16%**	**34.43%**	**36.70%**	**36.86%**	**36.93%**	**35.52%**	**35.14%**	**32.89%**	**34.82%**	**34.19%**	**35.74%**	**0.18%**
1. BNP Paribas		33.42%	32.04%	33.74%	38.73%	39.22%	39.46%	37.32%	36.86%	34.41%	37.81%	35.82%	37.02%	-0.85%
2. Credit Agricole		22.76%	22.42%	21.00%	22.65%	23.15%	23.67%	23.20%	22.05%	20.33%	20.58%	20.11%	21.03%	0.66%
3. Groupe BPCE		55.75%	52.09%	52.10%	52.93%	52.07%	51.95%	51.35%	51.62%	48.45%	51.12%	51.11%	51.22%	0.71%
4. Societe Generale		34.17%	34.08%	30.88%	32.51%	33.01%	32.66%	30.20%	30.04%	28.38%	29.78%	29.70%	33.69%	0.12%
Total NPLs (estimated)	[average]	**17,510**	**17,952**	**18,940**	**18,640**	**19,789**	**22,029**	**26,174**	**25,929**	**26,459**	**27,188**	**26,381**	**28,203**	**-3.89%**
1. BNP Paribas		19,300	21,800	23,300	23,100	26,200	28,600	41,779	41,251	42,896	43,585	42,453	43,696	-6.58%
2. Credit Agricole		13,339	11,907	13,859	13,661	13,454	15,697	15,591	14,769	16,322	16,936	17,349	24,759	-5.02%
3. Groupe BPCE		21,500	21,600	21,600	21,700	21,500	22,918	23,427	23,098	22,919	23,330	21,921	20,255	0.50%
4. Societe Generale		15,900	16,500	17,000	16,100	18,000	20,900	23,900	24,600	23,700	24,900	23,800	24,100	-3.41%
Total NPLs / Total Loans %	[average]	**2.64**	**2.80**	**3.19**	**3.23**	**3.56**	**4.13**	**4.80**	**4.99**	**5.33**	**5.68**	**5.42**	**5.59**	**-6.05%**
1. BNP Paribas		2.17	2.58	2.78	2.76	3.27	3.72	5.39	5.61	6.00	6.37	6.21	6.01	-8.14%
2. Credit Agricole		2.70	2.56	3.37	3.41	3.58	4.28	4.41	4.38	5.05	5.42	5.33	6.83	-7.43%
3. Groupe BPCE		2.56	2.73	2.87	3.10	3.24	3.50	3.69	3.84	3.87	4.06	3.74	3.47	-2.50%
4. Societe Generale		3.13	3.31	3.77	3.65	4.16	5.02	5.73	6.14	6.38	6.89	6.41	6.06	-5.34%
Loan Loss Reserve / NPLs	[average]	**73.91%**	**73.72%**	**72.39%**	**70.60%**	**70.82%**	**67.26%**	**61.65%**	**62.41%**	**61.96%**	**60.67%**	**62.47%**	**62.44%**	**1.41%**
1. BNP Paribas		94.72%	91.45%	92.04%	91.67%	91.91%	95.84%	64.73%	63.50%	61.59%	58.13%	62.48%	63.98%	3.32%
2. Credit Agricole		70.01%	74.70%	69.13%	67.44%	71.02%	63.57%	69.30%	72.73%	67.55%	66.38%	70.64%	66.38%	0.44%
3. Groupe BPCE		66.02%	63.56%	62.68%	59.03%	58.68%	51.39%	52.41%	53.29%	53.62%	52.66%	53.02%	55.21%	1.50%
4. Societe Generale		64.89%	65.17%	65.72%	64.24%	61.66%	58.24%	60.14%	60.10%	65.07%	65.51%	63.72%	64.20%	0.09%

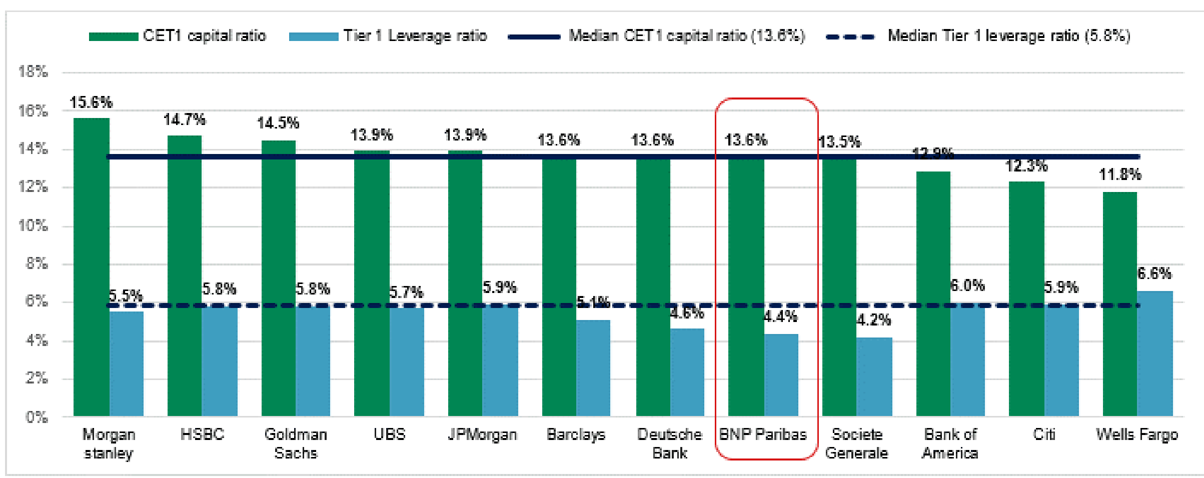
Source: Company Data, Bloomberg

The table presented above contains a set of financial indicators offering insights into the capital strength, risk management, and asset quality of the benchmarked institutions. Nevertheless, it is important to preface stating that each banking groups follows a distinct business strategy designed for its specific individual risk profile. Historical data spanning over a decade has been collected to discern the primary evolutionary patterns from each financial model.

As of the fiscal year-end in 2022, BNP Paribas presented a solid financial profile, underlined by the lowest NPL-to-loans ratio (2.17%), coupled with the highest loan loss reserve-to-NPL ratio (94.7%), amongst the benchmarked data. Furthermore, BNP Paribas demonstrated the most pronounced improvement in its NPL portfolio following the subprime crisis, illustrated by a compounded portfolio reduction of -6.6% during the period spanning from 2011 to 2022. This performance surpasses the peer average of -3.9% and underscores the bank's commitment to disciplined and risk-mitigating growth in its total loan portfolio, which expanded by a modest 1.7% over the same duration (+2.3% peer average).

Nevertheless, BNP Paribas lags behind its counterparts regarding its capital base, as all capital requirement ratios (CET1, Tier 1, and Total capital) stood below the French peer average. Furthermore, BNP Paribas faces an additional constraint in the form of an underwhelming leverage ratio, which was reported at 4.36% as of the fiscal year-end of 2022. This ratio remains below the levels of its peers, highlighting a restricted margin. This constraint is particularly significant in light of new regulatory minimum requirements, which mandate a minimum leverage ratio of 3.75%. A similar pattern is noticeable at a broader global scale, based on data from the first quarter of 2023. BNP Paribas stands at the peer median for its CET1 ratio, while ranking below the median for Tier 1 leverage (cf Figure 8.3 below).

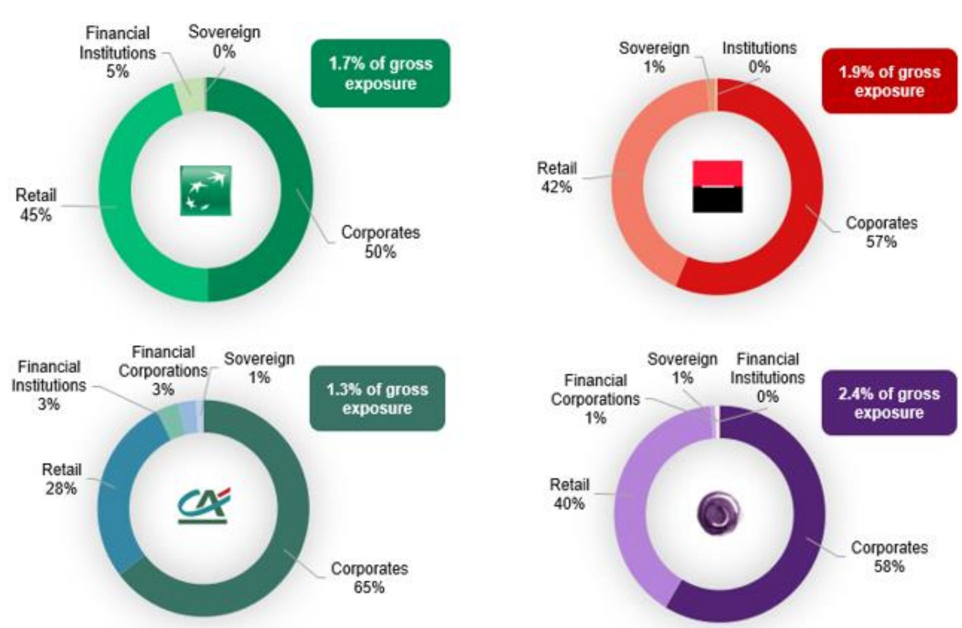
Figure 8.3: Solvency and capital benchmark from global leaders



Source: Company data, Moody's

In terms of doubtful loan exposure, BNP Paribas displays a neatly balanced split between retail and corporate customers, in light of its diverse activity portfolio, geographical footprint, and a strategic transition from traditional retail activity towards higher commission / fees activities namely in global capital markets (hedging, FX and commodity derivatives). At peer level, we notice a higher tendency of non-performing assets linked with corporate clients. At a broader level, all benchmarked banks maintain a disciplined amount of non-performing exposure, below the 2% of gross exposure threshold for most banks (except Groupe BPCE).

Figure 8.4: French peer breakdown of non-performing exposure (stage 3)



Source: Company Universal Registration Documents for the year of 2022

BNP Paribas and Société Générale stand out as globally diversified banking groups, whereas Credit Agricole and Groupe BPCE are more oriented towards the domestic French market. The divergent scopes and activities lead to variations in risk exposure, with global banks facing a broader array of international risks and domestic-focused banks being more sensitive to local economic conditions and regulations.

In summary, BNP Paribas has effectively managed non-performing loans and maintained a strong position in asset quality, although it faces challenges related to its capital structure. The bank's strategic diversification and global reach have influenced its risk profile, which differs significantly from its more domestically focused peers. Understanding these distinctions in solvency, risk exposure, and operational scope is crucial for assessing how BNP Paribas navigates the complex landscape of non-performing loans in comparison to its French banking peers.

SECTION 9

Conclusion

9.1. Key Takeaways

In the context of examining BNP Paribas' approach to non-performing loans (NPLs), the study discussed a multi-layered ecosystem of precautionary tactics. The bank distinguishes itself with strong deleveraging and disciplined NPL management since the subprime crisis, highlighting a low NPL-to-loans ratio and high loan loss reserve-to-NPL ratio in comparison to its peers, reflecting a risk-aware management strategy. However, this success is underpinned by the bank's capital structure (considered below industry average) and risk exposure characteristics (given bigger size and scope of activities). The benchmark generated by this study carries implications not only for BNP Paribas but also for other financial institutions seeking to navigate the complex topic of non-performing loans and risk management in the ever-evolving banking sector. Nevertheless, the study was limited by several restrictions, namely the lack of long-term standardized historical data published by banks (Basel III implemented as recently as 2018 in most French banks' reporting standards), as well as a lack of data standardization across banks. Within the confinements of the imposed minimum mandatory disclosure requirements, each banking institution is able to "cherry pick" the data presented, as the main disclosure requirements are mostly narrowed down to minimum capital structure data. Non-performing loan data remains highly sensitive, and in many cases opaque in bank's publications. Overall, it is difficult to gather harmonized and precise data across multiple banks linked with non-performing loans.

Nevertheless, the compiled research literature substantiates that effective NPL management demands a meticulous set of strategies that encompass prevention, resolution, and recovery. BNP Paribas, in line with sectorial best practices, employs various techniques, including loan restructuring, collateral liquidation, and debt write-offs. The bank's NPL management strategy integrates proactive risk assessment and early intervention, emphasizing the importance of clear internal processes, dedicated NPL management teams, data driven decision-making, and close collaboration between business lines. Strategies such as securitization, asset management companies, and loan sale in secondary markets have been adopted to optimize NPLs and enhance the bank's balance sheet.

Further enriching this topic is the evolving regulatory framework, notably the transition from Basel II to Basel III, designed to enhance capital requirements, risk assessment, and supplementary capital for banks. In addition, the establishment of the Single Resolution Fund (SRF) within the European banking union's framework is an important backup structure that reallocates the burden of bank rescues from taxpayers to the financial industry. Major European banks, including those included in

this study, contribute on a yearly basis to the SRF to ensure the overall stability and resilience of the banking system.

Moreover, BNP Paribas is not only navigating these regulatory requirements but is also reinforcing its risk assessment and monitoring practices. A comprehensive internal rating system, credit risk assessment, and continuous monitoring are integral to its strategy. These practices enable early identification of potential NPLs, allowing the bank to intervene through loan restructuring and tailored solutions. Scrutiny is applied to deteriorating credit profiles, and regular committees are organized to adjust provisions for doubtful loans. The bank's enforcement of these principles is aligned with recommended practices and regulatory requirements, ensuring a holistic approach to NPL portfolio management.

In summary, BNP Paribas' management of non-performing loans integrates strategic risk mitigation, early intervention, and proactive communication with distressed borrowers. A similar trend was identified at the broader industry level, as all major French baking institutions studied in this report implemented the same general practices. The evolving regulatory landscape and the bank's dedication to risk management strategies contribute to its leading position in the industry, emphasizing the importance of aligning with regulatory frameworks while remaining internally proactive in structuring additional measures for asset quality and risk management.

9.2 Limitations

The presented study aimed at providing a holistic analysis of BNP Paribas' risk management practices and handling of its non-performing loan portfolio, within the context of the broader French banking sector. While the research efforts attempted to offer valuable insights into critical aspects of these topics, several limitations were encountered, which merit consideration.

The main challenge during the study was the scarcity of in-depth data pertaining to non-performing loan portfolios and similar data from French banking institutions. The opacity surrounding internal models and risk management structures coupled with strict confidentiality constraints on proprietary internal guidelines restricted the access to viable data. The analysis was consequently constricted to a more surface level analysis.

Another noteworthy limitation was linked to the lack of harmonization in data publication among French banks included in the benchmark. Despite strong improvements being identified in the harmonization of reporting standards (namely in capital requirement metrics), several variations in definitions and methodologies introduced an element of heterogeneity to the analysis.

In the framework of exploring the current regulatory framework, several boundaries were observed in the Basel III accords, adding an additional layer of complexity to the data compilation and

subsequent analysis. The Basel III foundational pillars, while designed to enhance risk and prudential oversight, tend to have a lighter focus on in-depth NPL topics. Furthermore, differences in interpretation of Basel III requirements can deteriorate the quality of comparative data between institutions.

In the course of this research case, a questionnaire was drafted and circulated to internal stakeholders within BNP Paribas (Risk and Commercial teams). However, it is important to acknowledge the absence of value-added responses to the questionnaire, attributed to the sensitive and confidential nature of the subject matter, namely the management and handling of Non-Performing Loans (NPLs). In order to ensure strict compliance with internal guidelines, the stakeholders are subject to rigorous confidentiality and privacy constraints. Consequently, the lack of valuable data provided internally led to the questionnaire being omitted from this report, underpinning the rigid treatment of NPL topics within the bank.

Overall, the limitations encountered in this study emphasize the necessity for further research and collaboration between the financial industry and regulatory bodies. Future investigations should aim to address the challenges associated with data availability, harmonization, and the effectiveness of regulatory frameworks. Such efforts would not only enhance the transparency and understanding of risk management practices but also contribute to more informed decision-making by market participants, regulators, and policymakers.

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