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A Multiple Case Study of Bank Credit Risk Disclosure: Evidence from European and US Banks

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Master's in Accounting and Management Control

Supervisor:
PDH, Isabel Maria Estima Costa Lourenço, Professora Catedrática,
ISCTE – IUL

September, 2025

BUSINESS SCHOOL

Department of Accounting

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Dedication and Acknowledgments

Dedico esta tese, em primeiro lugar, à minha mãe, aos meus irmãos, à minha avó, à minha namorada e aos meus amigos, pelo apoio incondicional, carinho e incentivo constante ao longo de toda a minha vida académica. Em especial ao amigo Diogo Leonardo, pelo apoio e ajuda durante o processo de obtenção dos resultados. À minha orientadora, a Professora Isabel Lourenço, pela orientação rigorosa e motivadora, agradeço à University of Texas Rio Grande Valley, especialmente pelo Ph.D. Christian Sobngwi, pela oportunidade de aprendizagem e crescimento que me proporcionou. Um agradecimento especial à Fundação Luso-Americana para o Desenvolvimento (FLAD) e aos professores do ISCTE que me ajudaram a ter esta incrível oportunidade.

Resumo

Esta dissertação analisa as divulgações de risco de crédito das principais instituições financeiras (bancos) na Europa e nos Estados Unidos entre 2019 e 2023, por meio de um estudo de múltiplos casos focado na análise detalhada de um grupo selecionado de instituições financeiras. Para contextualizar o tema, o estudo discute a relevância do risco de crédito no âmbito dos quadros regulamentares de Basileia II e Basileia III, bem como os diferentes ambientes contabilísticos e de supervisão (IFRS/BCE na Europa e US GAAP/CECL nos Estados Unidos).

Uma análise de conteúdo de métodos mistos, combinando técnicas qualitativas e quantitativas, foi aplicada a uma amostra de sete bancos europeus e cinco bancos norte-americanos, cada um tratado individualmente como um estudo de caso, representando mais de metade do mercado europeu e cerca de 90% do mercado norte-americano. Esta abordagem permitiu uma comparação aprofundada das práticas de divulgação do risco de crédito em diferentes contextos regulatórios.

Os resultados mostram que os bancos norte-americanos analisados tendem a dar prioridade à divulgação quantitativa, focada principalmente em imparidades e cenários macroeconómicos, enquanto os bancos europeus analisados enfatizam aspetos relacionados com a governação, a gestão do risco de concentração e a integração progressiva de fatores ESG e relacionados com o clima.

O estudo conclui que os dois modelos são amplamente complementares: o contexto norte-americano analisado destaca-se pela sua clareza quantitativa e reconciliação explícita das imparidades, enquanto o contexto europeu se distingue pela incorporação de dimensões qualitativas e prospectivas na gestão do risco de crédito.

Palavras-chave:

Banca, bancos europeus, risco de crédito, divulgação, bancos americanos

Abstract

This dissertation analyzes credit risk disclosures of leading financial institutions (banks) in Europe and the United States between 2019 and 2023, through a multiple-case study focused on the detailed examination of a selected group of financial institutions. To contextualize the topic, the study discusses the relevance of credit risk within the scope of the Basel II and Basel III frameworks, as well as the different accounting and supervisory environments (IFRS/ECB in Europe and U.S. GAAP/CECL in the United States).

A mixed-methods content analysis, combining qualitative and quantitative techniques, was applied to a sample of seven European banks and five U.S. banks, each treated individually as a case study, representing more than half of the European market and around 90% of the U.S. market. This approach enabled an in-depth comparison of credit risk disclosure practices across different regulatory contexts.

The results show that the U.S. banks under analysis tend to prioritize quantitative disclosure, mainly focused on impairments and macroeconomic scenarios, whereas the European banks under analysis emphasize governance-related aspects, the management of concentration risk, and the progressive integration of ESG and climate-related factors.

The study concludes that the two models are largely complementary: the U.S. context analyzed stands out for its quantitative clarity and explicit reconciliation of impairments, while the European context is distinguished by the incorporation of qualitative and forward-looking dimensions in credit risk management.

Keywords:

Banking, European banks, credit risk, disclosure, American banks

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Glossary

1. Introduction

Several years after the mandatory implementation of the Basel II Accord and with Basel III already in force, the issue of credit risk disclosure has become a fundamental component of the risk management and control policies of Credit Institutions. At present, transparency in the financial sector has gained growing relevance, not only due to the regulatory framework but also because of the pressures exerted by investors, supervisors, and society at large, who demand compliance with high reporting standards and the reduction of information asymmetry. Credit risk disclosure, therefore, assumes heightened importance in the contemporary context, marked by systemic shocks such as the COVID-19 pandemic, the war in Ukraine, and the intensification of climate-related risks.

The literature has consistently emphasized that greater transparency contributes to reducing the cost of capital (Barth & Schipper, 2008; Botosan, 1997), acts as an external monitoring mechanism for managerial conduct (Eng & Mak, 2003; Ratnovski, 2013), and provides essential support for investors in assessing the performance and governance of financial institutions (Bisoni et al., 2012; Nadotti, 2004; Rutigliano, 2020; Tutino et al., 2005). Given the centrality of credit risk to the stability and profitability of commercial banks (Sironi & Resti, 2008; Tutino, 2015), the quality and depth of disclosure practices are critical to the resilience of the sector.

Although the European and North American banking systems share a harmonized regulatory framework under the Basel Committee, significant differences remain in terms of reporting and supervision. In Europe, disclosure is shaped by International Financial Reporting Standards (IFRS) and the oversight of the European Central Bank, which ensures relatively standardized formats. In the United States, the U.S. GAAP framework predominates, favouring a more quantitative and technical orientation, combined with strong regulatory supervision based on instruments such as the Federal Reserve's stress tests under CCAR. These structural differences influence not only the form but also the substance of disclosure practices.

Academic literature on the subject has expanded in recent decades, covering various types of banking risks (Birindelli & Ferretti, 2017; Drago & Mazzucca, 2005; Malinconico, 2007) and exploring diverse methodologies, ranging from quantitative analyses based on binary indicators or disclosure dictionaries (Nahar et al., 2016; Loughran & McDonald, 2011; Farina et al., 2019) to studies that integrate graphical and visual elements in reports (Jones et al., 2018). However, works specifically focused on credit risk remain scarce, despite this being widely recognized as the most relevant risk for commercial banks. Among the few contributions, Frolov (2006) examined the Japanese context, while Scannella and Polizzi (2019, 2021) investigated the Italian sector, exploring in depth the effects of the supervisory regime on disclosure practices.

This study seeks to fill this gap by analysing credit risk disclosure practices in two of the most influential banking systems worldwide: Europe and the United States. Using a mixed content analysis approach—both qualitative and quantitative aims to assess consistency and temporal evolution of reporting practices, identifying similarities and differences between the two contexts.

The sample focuses on a restricted group of large systemically important banks in each region, which allows for a representative view of the reality of both sectors. In both Europe and the United States, the banking sector is highly concentrated, meaning that the analysis of a limited number of institutions is sufficient to capture the main patterns. Thus, beyond contributing to the literature on credit risk, this study also offers a rare comparative perspective, examining how different regulatory regimes influence transparency strategies and risk communication among the world's leading financial institutions.

2. Theoretical Framework

Before starting the study and delving into the topic, it is first necessary to explain the concept of risk and credit risk, including the notions of risk and the various risk categories.

Additionally, it is important to present the standards used for preparing credit risk disclosures in the regions to be analysed and their respective regulators.

2.1 Risk

The concept of risk has naturally evolved over time and is currently, in advanced societies, a basic principle in decision-making for politicians, managers, and entrepreneurs in crisis management programs. This concept is now associated with a new paradigm in which technological, social, economic, legal, ethical, and communication aspects gain prominence and merit consideration (Ramos, 2014).

According to Matias-Pereira (2006), all organizations are subject to various types of risks, which may be endogenous, generated by their own activities, or exogenous, arising from external activities.

Financial companies are risk management entities, as their main business involves taking risks and providing liquidity (Maffei, 2014).

Amaral (2015), citing Alcarva (2011), defines risk in the banking context as the probability of loss, meaning risk encompasses anything that impacts the institution's capital value, whether from expected or unexpected events.

2.1.1 Credit Risk and Risk Categories

The Office of the Comptroller of the Currency has defined nine categories of risk for bank supervision purposes. These risks are Credit, Interest Rate, Liquidity, Price, Foreign Exchange, Transaction, Compliance, Strategy, and Reputation. These categories are not mutually exclusive; any product or service may expose the bank to multiple risks. (OCC, 1996)

In turn, the Bank of Portugal, in the application of RAM (Risk Assessment Models), involves the assessment of nine risk categories divided into 2 groups, financial risks (credit risk, market risk, interest rate risk, and exchange rate risk), and non-financial risks (operational risk, information systems risk, strategic risk, compliance risk, and reputation risk).

The European Central Bank has four capital-related risks: credit risk, market risk, operational risk, and interest rate risk in the banking book. (European Central Bank, 2024)

Concerning credit risk, RAM defines credit risk as the probability of negative impacts on results or capital due to a counterparty's inability to fulfil its financial commitments to the institution, including potential restrictions on payment transfers from abroad. Credit risk mainly exists in credit exposures (including securitized ones), credit lines, guarantees, and derivatives.

For the Office of the Comptroller of the Currency, credit risk is the risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise fail to perform as agreed. Credit risk is found in all activities where success depends on counterparty, issuer, or borrower performance. It arises any time bank funds are extended, committed, invested, or otherwise exposed through actual or implied contractual agreements, whether reflected on or off the balance sheet. (OCC;1996)

Also, Credit risk is the most recognizable risk associated with banking. This definition, however, encompasses more than the traditional definition associated with lending activities. Credit risk also arises in conjunction with a broad range of bank activities, including selecting investment portfolio products, derivatives trading partners, or foreign exchange counterparties. Credit risk also arises due to country or sovereign exposure, as well as indirectly through guarantor performance.

According to the Basel Committee on Banking Supervision in Basel II, credit risk is "the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms."

The IASB, in International Financial Reporting Standard IFRS 7 – Financial Instruments: Disclosures (IFRS 7, 2005: Appendix A), defines credit risk as the risk that one party to a financial instrument may fail to meet an obligation, thereby causing a financial loss to the other party.

Credit risk disclosure plays a critical role in the functioning of modern banking systems, as it enhances transparency, reduces information asymmetry, and strengthens market discipline. Greater transparency in risk reporting lowers the cost of capital by improving investor confidence and facilitating more efficient allocation of resources (Botosan, 1997; Barth & Schipper, 2008).

In the context of banking, where credit exposures represent the largest share of risk-weighted assets, the disclosure of credit risk is particularly relevant for both prudential oversight and stakeholder decision-making (Linsley & Shrives, 2006; Nier, 2005).

Moreover, timely and comprehensive disclosure provides an external monitoring mechanism for bank managers, mitigating agency problems and aligning managerial incentives with those of investors and regulators (Eng & Mak, 2003; Ratnovski, 2013).

The literature further emphasizes that high-quality credit risk disclosure contributes to financial stability by reducing uncertainty in periods of stress, thereby preventing excessive pro-cyclicality and fostering trust in the resilience of the banking sector (Bushman, 2014; Beretta & Bozzolan, 2004). In this sense, disclosure is not only a regulatory requirement but also a fundamental tool for ensuring the accountability and long-term sustainability of financial institutions.

2.1.2 European and American Banking System Regulators

In the United States of America, the regulation and supervision of the banking system are carried out by three main federal agencies: the Federal Reserve, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation, along with the fifty-state banking departments (Gosh et al, 2024).

The Federal Reserve is responsible for supervising a wide spectrum of financial institutions, from relatively small and simple commercial banks, savings and loan associations, and their associated bank and thrift holding companies, to large and complex institutions and the U.S. operations of foreign banks, to ensure they comply with rules and regulations. It is also responsible for establishing the rules within which financial institutions must operate. The Board of Governors of the Federal Reserve System oversees the entire banking system (FED, 2024).

The Office of the Comptroller of the Currency regulates and supervises the national banks and federal savings associations, as well as branches and federal agencies of foreign banks, and they are an independent bureau within the U.S. Department of the Treasury (OCC, 2024).

The Federal Deposit Insurance Corporation is an independent agency created by Congress to maintain stability and public confidence in the nation’s financial system. They regulate and supervise the state-chartered banks that aren’t members of the Federal Reserve System, and all the banks that accept insured deposits (FDIC,2024).

There are also other regulators in the banking sector; however, these do not only regulate the banking sector: the Securities and Exchange Commission and the Consumer Financial Protection Bureau (Gosh et al, 2024).

The Securities and Exchange Commission oversees securities exchanges, securities brokers and dealers, investment advisers, and mutual funds to promote fairness by issuing guidance and regulations on the accounting methods to be used in financial statements that are filed by publicly traded companies under federal securities laws (SEC,2024).

The Consumer Financial Protection Bureau is an independent agency that was created after 2009 to implement and enforce Federal consumer financial law and ensure that markets for consumer financial products are fair, transparent, and competitive, regulating and overseeing the consumer-related activities of banks that influence risk management and internal control systems and practices (CFPB,2024).

In Europe, the regulation and supervision of the banking system are carried out by three institutions: the European Union, the European Central Bank, and the Single Resolution Board (Lobo et al, 2024).

The European Union supervises banks through the European Banking Authority (EBA), which is responsible for establishing a harmonized set of rules for the regulation and supervision of the banking sector across the European Union (EU, 2024).

The European Central Bank supervises banks through European banking supervisors to ensure that banks can weather a crisis (ECBBS, 2024).

The Single Resolution Board's mission is to ensure an orderly resolution of failing banks, protecting the taxpayer from state bailouts, which promotes financial stability (SRB,2024).

Regarding the standards used by the American banking industry, the OCC's Bank Accounting Advisory Series indicates which Accounting Standards Codification (ASC) should be used to ensure that banks comply with current accounting standards and maintain transparency in the management of their assets, liabilities, and regulatory compliance. The main ASCs used to prepare credit risk disclosures are the following: (Bank Accounting Advisory Series, 2024).

ASC 326: Credit Losses deals with the measurement of credit losses on financial instruments. It provides guidance on how entities should measure credit losses on financial assets.

ASC 310: Accounts Receivable guides the recognition, measurement, presentation, and disclosure of accounts receivable, including loans and leases receivable. This standard is widely used by financial institutions to manage and disclose information about loans and related financial assets.

ASC 320: Investments – Debt and Equity Securities provides guidance for accounting and reporting investments in debt and equity securities. The standard covers how to classify, measure, recognize, and disclose these financial instruments, considering the investment purpose and the impact of changes in value.

ASC 820: Fair Value Measurement provides guidelines for measuring the fair value of financial and non-financial assets and liabilities. This standard is essential for companies and financial entities, as it defines how to calculate and present fair value in financial reports.

In the European context, the main standards used in credit risk disclosures are:

IFRS 7 - The objective of this IFRS is to require entities to provide disclosures in their financial statements that enable users to assess:

The significance of financial instruments to the entity's financial position and performance.

The nature and extent of the risks arising from financial instruments to which the entity is exposed during the reporting period and at the end of the reporting period, and how the entity manages those risks.

IFRS 9 - The objective of this Standard is to establish principles for the financial reporting of financial assets and liabilities that will present relevant and useful information to users of financial statements for their assessment of the amounts, timing, and uncertainty of the entity's future cash flows.

IAS 32 – Financial Instruments: Presentation aims to establish principles for the presentation of financial instruments as liabilities or equity or for the offsetting of financial assets and financial liabilities. It applies to the classification of financial instruments, from the perspective of the issuer, into financial assets, financial liabilities, and equity instruments; to the classification of related interest, dividends, losses, and gains; and to the circumstances in which financial assets and financial liabilities should be offset.

The principles of this Standard complement the principles for the recognition and measurement of financial assets and financial liabilities in IFRS 9 – Financial Instruments, and for the disclosure of information about them in IFRS 7 – Financial Instruments: Disclosures.

2.1.3 Basel agreement

The Basel Committee on Banking Supervision, created in 1974, introduced the first Basel Accord in 1988. This Accord has two main objectives: first, to strengthen the soundness and stability of the international banking system, and second, to reduce sources of competitive inequality among international banks across countries. To achieve these objectives, the Accord sets minimum capital levels for banks, allowing central authorities freedom to adopt more stringent measures. The focus of the Accord is primarily to evaluate capital concerning credit risk. Over time, it was understood that other equally important risks also needed attention; although not included in the initial Accord, market risk and operational risk were later addressed by the Basel Committee.

In 2004, the Basel II Accord was published, introducing three fundamental pillars. The first pillar covers credit, market, and operational risks, establishing procedures to manage these three risk types (the first two risks had already been evaluated in Basel I). The second pillar indicates that each institution should have its own processes to assess the adequacy of capital to meet its obligations. Lastly, the third pillar requires banks to provide more information to ensure safer, healthier practices regarding risk management and capital allocation.

As these Accords failed to prevent risky practices, the Basel III Accord was published in 2010. It introduced a set of measures proposed by the Basel Committee in the post-crisis era, primarily outlined in two documents: "Basel III: A Global Regulatory 5 Framework for More Resilient Banks and Banking System" and "Basel III: International Framework for Liquidity Risk Measurement, Standards and monitoring." The major innovation in this Accord was the introduction of new standards: the Liquidity Coverage Ratio (LCR), which measures asset liquidity, and the Net Stable Funding Ratio (NSFR), aimed at promoting funding stability.

At this moment, the Basel Committee comprises 45 members from 28 jurisdictions, consisting of central banks and authorities with formal responsibility for the supervision of banking business. Additionally, the Committee has eight observers, including central banks, supervisory groups, international organizations, and other bodies, including the United States and the European Union. (BIS,2024)

2.1.4 Credit Risk and Risk Studies

Numerous researchers conducted studies worldwide to understand the evolution in risk disclosures and the impact of these new practices on banks' reports. For example:

Fethi Saidi (2022) highlights the importance of the banking sector transparently conveying all information in its reports, particularly risk-related information, focusing on the top 50 banks listed in the Gulf Cooperation Council region.

Ahmed Barakat and Khaled Hussainey (2013) investigated the direct and combined effects of governance, regulation, and banking supervision on the quality of risk reporting in the banking sector, as reflected by the quality of operational risk disclosure.

Also, Ahmed Barakat and Khaled Hussainey (2020) provided an analysis of the informative influence of risk disclosures on banks' credit ratings, which will consequently also assess whether governance structures can moderate such an association.

Marco Maffei et al. (2013) analysed reports from 66 Italian banks, which follow the guidelines of the Italian central bank, to understand the differences in these reports.

Rihab Grassa, Nejia Moumen, and Khaled Hussainey examined the impact of ownership concentration and deposit structure on risk disclosure, providing valuable insights for regulators, policymakers, and annual report users.

Still, Rihab Grassa, Nejia Moumen, and Khaled Hussainey, in this article, examined and compared the relationship between the disclosure of risk and corporate attributes in Islamic banks and conventional banks. Using a comprehensive risk disclosure index covering nine dimensions, we analyzed the level of risk-related disclosure (RRD) in a sample of 72 Islamic banks and 97 conventional banks in 11 countries.

The existing literature reveals that risk disclosure in the banking sector has been widely examined from multiple perspectives, ranging from transparency and the quality of information provided (Saidi, 2022; Barakat & Hussainey, 2013) to its impact on credit ratings and governance structures (Barakat & Hussainey, 2020). Other studies highlight geographical specificities, as in the case of Italian banks (Maffei et al., 2013), or differences between Islamic and conventional banks (Grassa, Moumen & Hussainey, 2013, 2020), revealing that institutional, ownership, and market factors shape the extent and quality of disclosure.

This study contributes to this literature by offering a systematic comparative analysis between US and European banks over a recent time horizon (2019–2023), assessing methodological advances for new challenges in credit risk reporting.

3. Methodology

3.1 Research context

In this section, we explain the methodology adopted to analyse the credit risk disclosure of the European and the United States of America banking sectors. We use an extended version of the content analysis methodology proposed by Scannella and Polizzi (2021), which we tailor to fit the credit risk disclosure requirements of large banks with consolidated financial statements prepared in accordance with IAS/IFRS and US GAAP. The content analysis is carried out by means of a scoring model that draws on the methodological framework described by Krippendorff (2004). We use this approach to examine the bank's annual reports. The metric developed using this approach is split into two parts.

The first part of the metric (see Table 1) represents an array of disclosure indicators grouped under four sections and subject to a binary and objective valuation method. These indicators include: the definition of credit risk and its components, the calculation of loan losses and their limitations, the provision of loan losses and loan loss models used, and the presence of other key disclosure parameters. We assign a score of 1 when banks provide the information represented by the indicator, and 0 otherwise.

This binary disclosure part of the metric is entirely objective and captures the presence or absence of specific pieces of information and therefore is not affected by the subjective evaluation of the researchers. The second part of the metric (see Table 2) is divided into 11 sections that relate to different aspects of credit risk as they relate to credit risk management strategies, credit risk components, exposure, mitigation and transfer instruments, loan loss and measurement models, credit rating disclosure items, and capital requirements. Unlike the first part of the metric, the evaluation of the items in each section is judgment-based. Specifically, we assign a score from 0 to 3 for each item, according to four qualitative characteristics of the “Conceptual Framework for Financial Reporting” of the International Accounting Standard Board. These are: relevance, understandability, comparability, and reliability. A score of 0 means that the information provided on the item represented by the disclosure parameter is entirely inadequate or that no information is provided. A score of 3 means that the disclosure is fully informative for the users of the reports, a score of 1 represents that there is a note or a reference in the report, and a score of 2 represents that the information given is incomplete. To ease the interpretability of the empirical results, equal weights are assigned to all sections of the scoring rule.

Our final credit risk disclosure index is equal to the sum of sections one and two of the metrics developed, rescaled on a 0 to 100-point scale.

TABLE 1. First section of the metric (0-1)

SECTION 1- Definitions
Credit risk definition
Expected loan loss definition
Unexpected loan loss definition
Credit risk components definition (PD, LGD, EAD)
Credit risk-weighted assets definition
Back testing definition
Non-performing loans definition
SECTION 2– Calculations and limitations
Amount of expected loan loss
Amount of unexpected loan loss
Amount of credit risk-weighted assets
Limitations of expected loan loss calculation
Limitations of unexpected loan loss calculation
Limitations of internal credit rating system
Limitations of loan loss provisioning methodologies
Potential credit risk exposures (on-balance sheet)
Potential credit risk exposures (off-balance sheet)
SECTION 3– Explanations
Explanation of expected loan loss models used
Explanation of unexpected loan loss models used
Explanation of provisioning for loan losses
Explanation of credit risk-weighted assets calculation
Explanation of back-testing models used
Qualitative disclosure on non-performing loans portfolio
Explanation of credit risk mitigation/transfer instruments
SECTION 4– Other key disclosure parameters
Presence of graphs about expected and unexpected loan loss
Stress testing explanations
Stress testing results

Credit risk aggregation reported
Risk-adjusted performance indicators
Credit risk exposure limits and tolerance
Scenario analysis

TABLE 2. Second section of the metric (0-3)

SECTION A- Key aspects of credit risk management in banking
Explanation of credit risk management strategies
Explanation of credit risk management goals, procedures, processes, and policies
Explanation of credit risk measurements
Explanation of credit risk control systems
SECTION B- Credit Risk Management Decision Disclosure
Information on credit risk assumption and retention
Information on credit risk prevention and protection
Information on credit risk transfer
Information on credit risk elimination and avoidance
SECTION C- Credit Risk Components
Insolvency risk
Migration risk
Recovery risk
SECTION D- Information on credit risk exposures
Current credit risk exposures (on-balance sheet)
Potential credit risk exposures (on-balance sheet)
Current credit risk exposures (off-balance sheet)
Potential credit risk exposures (off-balance sheet)
Accuracy of potential credit risk exposures assessment
SECTION E– Loan Losses and Measurement Models
Credit risk: expected loss
Credit risk: unexpected loss
Measurement models for expected loss
Measurement models for unexpected loss
Model risk

SECTION F– Credit risk mitigation/transfer instruments
Information on collateral
Information on personal guarantees
Information on insurance contracts
Information on credit derivatives
Information on loan securitization
SECTION G– Other key elements of bank credit risk
Provisioning for loan losses
Analysis of non-performing loans
Information on specialized lending
Credit Risk: Balance Sheet Ratios
SECTION H- Bank loan portfolio disclosure
Loan portfolio composition
Loan portfolio correlation
Loan portfolio concentration
Credit risk aggregation and methodologies
SECTION I- Credit rating disclosure issues
Information on internal/external credit rating
Rating assignment
Rating quantification
Rating validation
Information on the accuracy of internal credit rating models
Implications of internal credit rating for bank management
SECTION L- Bank Credit Risk Capital Requirements disclosure
Credit risk-weighted assets (on- and off-balance sheet)
Measurement models for credit risk capital requirements
Capital adequacy for credit risk (regulatory perspective)
Economic capital for credit risk (internal and managerial perspective)
SECTION M- General Credit Risk Disclosure Issues
Backward-looking information on bank credit risk
Forward-looking information on bank credit risk
Provision of an integrated perspective on bank credit risk
SECTION N- Qualitative evaluation of binary indicators
Quality of definitions (section 1)
Quality of calculations and limitations (section 2)

Quality of Explanations (section 3)
Quality of other key disclosure parameters (section 4)

Although the analysis of the first part of the metric is objective, this part of the metric cannot capture several qualitative aspects related to credit risk disclosure. The second part of the metric is affected by the subjective evaluation of the research analyst (Krippendorff, 2004). Still, it captures numerous aspects that cannot be examined using binary indicators. Given that the concepts of disclosure quantity and disclosure quality are totally different (Beretta & Bozzolan, 2008), the qualitative approach of the second part of the scoring rule is crucial to examining various aspects of disclosure that would be otherwise overlooked.

In line with previous studies (Polizzi & Scannella, 2020), and to enhance the replicability and reliability of our empirical analysis and strengthen the analysis across time and across series, we adopt a methodological expedient. This expedient consists of the following steps.

Although previous research indicated that bank size and the extent of its disclosure are positively related (Woods et al., 2008), we began by evaluating the report provided by UniCredit in 2019, using it as a reference since it has already been analysed by the authors of this methodology. Secondly, we analysed the 2019 disclosure of all other banks in our sample, using UniCredit 2019 as a benchmark. Thirdly, we conducted a year-on-year disclosure analysis for the period from 2019 to 2023, using each bank's previous year's disclosure as a reference.

3.2 Sample and Sampling Method

The selection of the sample was guided by the criterion of market share, ensuring the inclusion of the most representative institutions within each territory. Market share percentages were determined using data from the ADV Ratings database, which provides both the total market value of the banking sector in each region and the individual market value of each institution.

For the European sample, seven banks were selected, jointly representing 51% of the total market:

- BNP Paribas (14%)
- Crédit Agricole (10%)
- Banco Santander (7%)
- Société Générale (6%)
- ING Group (5%)
- Intesa Sanpaolo (5%)
- UniCredit (4%)

For the United States sample, five banks were included, covering 90% of the national market:

- JPMorgan Chase (30%)
- Bank of America (25%)
- Citigroup Inc. (18%)
- Wells Fargo & Co. (15%)
- Goldman Sachs (12%)

This composition ensures a high level of sector representativeness, capturing the disclosure practices of the largest and most systemically important institutions in both regions.

4. Results

4.1 Overall analysis

Figure 1 presents the overall results of the disclosure scores for the banks in the sample. It emerges that, although some banks are better than others, all of them tend to improve over the period considered. BNP Paribas is the bank that received the highest score (more than 95/100 at the end of the sample period), while the best American bank is JPMorgan Chase & Co.

Based on a comparison of aggregate disclosure indices by region (see Figure 2), it can be concluded that the overall quality of credit risk reporting among US and European banks is generally comparable, albeit with quite different approaches. Throughout the period studied, American banks closed the gap with European banks, reducing the difference between them from 25 points to 20 points.

Figure 1. Evolution of disclosures by region

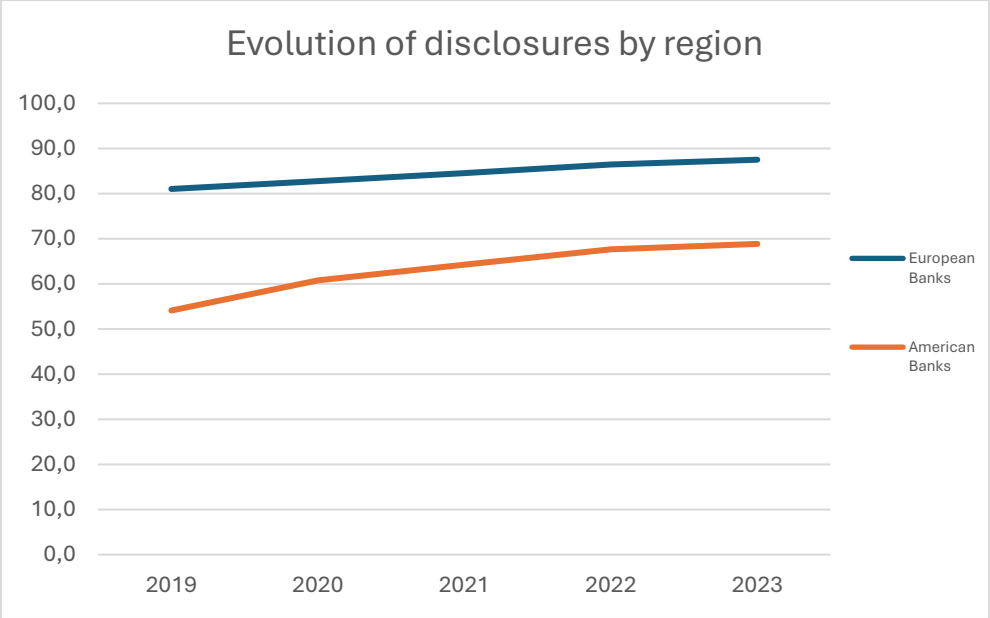
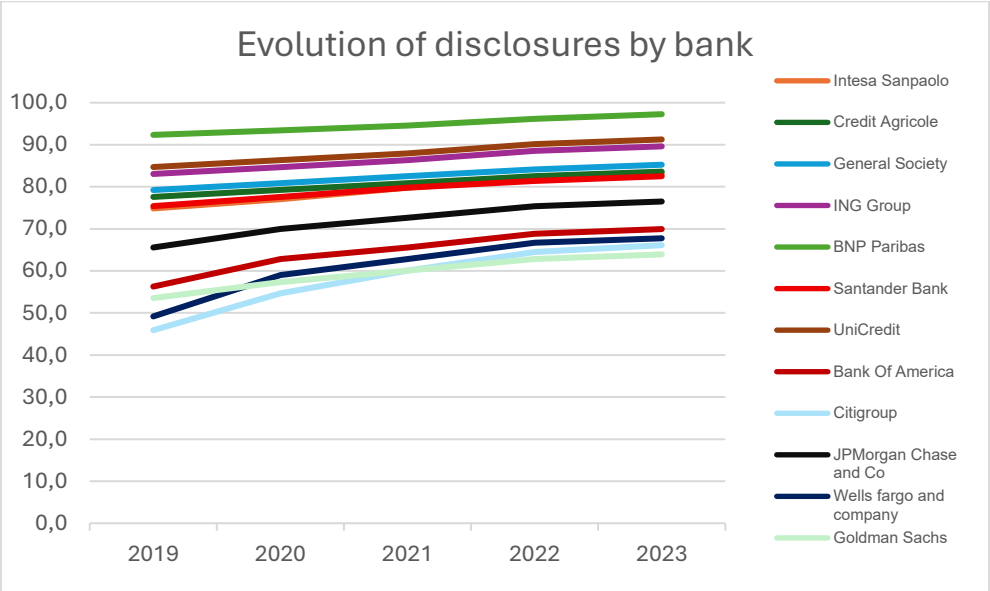


Figure 2. Evolution of disclosures by the bank



The next section provides the detailed results of the content analysis of each bank in the sample.

4.2 Detailed analysis of each bank

Intesa Sanpaolo

From 2019 to 2023, Intesa Sanpaolo's credit risk reporting disclosures were placed in Part E of the consolidated financial statements, which ensured structural coherence and comparability across time. The reports regularly stressed the alignment of the bank's credit strategy with its Risk Appetite Framework (RAF), the diversification of the loan portfolio, and the proactive monitoring of exposures, highlighting a cautious and forward-looking stance.

In the pre-pandemic period (2019–2020), attention was centred on the governance structure of credit risk and on the bank's systematic de-risking strategy. The roles of the Chief Lending Officer, Chief Risk Officer, and Chief Financial Officer were described in detail with respect to defining the RAF, setting exposure limits, and ensuring effective oversight. The use of internal rating models (PD, LGD, EAD), early-warning systems, and stress testing was reported as central to credit risk measurement and control. In line with the 2018–2021 Business Plan, significant attention was devoted to reducing non-performing loans (NPLs) through large-scale disposals and securitizations.

The COVID-19 crisis (2020–2021) marked a turning point in disclosure practices. The bank dedicated sections of its reports to the effects of the pandemic, outlining customer support measures (moratoria, state-guaranteed loans, and SACE-backed financing), as well as methodological adjustments to credit risk assessments. Management overlays were introduced into Expected Credit Loss (ECL) calculations, staging triggers were recalibrated, and vulnerability indicators were developed to prevent pro-cyclical tightening of credit. In the same period, the reports documented the development of machine learning models designed to detect early signs of deterioration, reflecting the adaptive use of technology. Also in 2021, the report marked the explicit integration of ESG and climate-related risks into credit risk governance. ESG and climate factors were embedded in corporate rating models, while a top-down sectoral ESG scoring system was introduced to identify segments most exposed to transition or physical risks.

In 2022, the war in Ukraine reshaped disclosure practices. The bank provided a detailed breakdown of its exposures to Russia and Ukraine, distinguishing between gross and net exposures, outlining prudential valuation choices, and openly reporting impairments exceeding €1.4 billion. At the same time, consistent with the narrative of previous years, the bank reported on the final phase-out of pandemic-related moratoria and the monitoring of repayment resumptions.

In 2023, the themes of resilience, structural de-risking, and ESG integration were further reinforced, with disclosure underlining both the long-term stability of the credit portfolio and the bank's ability to absorb external shocks.

Taken as a whole, Intesa Sanpaolo's disclosure strengths are the systematic integration of exogenous shocks (COVID-19, the war in Ukraine), the explicit articulation of prudential overlays in ECL calculations, the adoption of advanced analytical tools, and the early inclusion of ESG factors. Weaknesses lie primarily in the highly technical nature of certain sections—often heavily reliant on IFRS 9 references without full operational translation—and in the still-limited quantification of climate-related risks.

ING Group

The ING Group's credit risk disclosures between 2019 and 2023 were systematically presented in the risk management chapters of the annual report, ensuring, as with the previous bank, both structural coherence and comparability. The overarching narrative consistently underlined the alignment of lending with the Risk Appetite Framework (RAF), the use of internal models (PD, LGD, EAD) across retail and wholesale portfolios, and the active management of concentration risk by country, sector, and single name, reflecting a prudent and forward-looking orientation.

In the pre-pandemic years (2019–2020), the focus was on credit risk governance and the disciplined application of model oversight and limit frameworks. Detailed descriptions were provided of delegated authorities, the supervision of rating systems, and the monitoring of sectoral and country exposures through stress testing and early-warning indicators. In 2020, the outbreak of COVID-19 led to specific adjustments in underwriting and monitoring, with the design of scenarios and management overlays used to capture the heightened uncertainty in expected loss estimates.

During the COVID-19 crisis (2020–2021), dedicated sections were devoted to customer support initiatives and to methodological responses in credit risk measurement, including the recalibration of staging indicators and the introduction of sectoral vulnerability filters. The 2021 report also explicitly brought ESG and climate considerations into credit risk governance. Climate factors were incorporated—at this initial stage in a qualitative, policy-driven manner—into sector frameworks and into top-down portfolio steering, consistent with the bank's "Terra" approach.

Against the backdrop of the war in Ukraine, ING presented a structured assessment of affected exposures, set out de-risking actions and provisioning decisions, and linked these measures to concentration controls and reinforced model governance. The bank also reported on the gradual phase-out of pandemic-related support, the normalization of staging practices, and the ongoing monitoring of energy-sensitive industries in an environment of inflation and monetary tightening.

By 2023, the emphasis was placed on resilience, structural de-risking, and ESG integration. Model redevelopment programmes, consistency in rating scales (the obligor master scale), and climate-related steering were presented as routine features of risk governance, rather than as exceptional, event-driven responses.

Taken as a whole, ING's disclosure key strengths include the explicit articulation of model governance (development, validation, performance monitoring), the transparent use of overlays and sectoral vulnerability analysis, and the early inclusion of climate considerations in credit steering. Weaknesses lie primarily in the highly technical register—dense with methodological detail—and in a still-limited quantification of climate-related credit risks relative to the sophistication of policy descriptions.

BNP Paribas

The analysis of BNP Paribas' credit risk disclosure between 2019 and 2023 shows a highly structured, policy-anchored approach, accompanied by a steady intensification of ESG and climate integration. Disclosures were systematically embedded in the Group's risk chapters and in Pillar 3, ensuring structural coherence and comparability. Central features included reliance on advanced IRB models for a large share of exposures, a Group-wide Global Credit Policy, and rigorous concentration-risk controls.

In the pre-pandemic period (2019–2020), emphasis was placed on governance and model coverage, with explicit articulation of PD-based assessments, delegation frameworks, and early-warning processes. In 2020, the onset of COVID-19 led to disclosures on moratoria, state-guaranteed lending, and the incorporation of pandemic scenarios into expected-loss estimates and monitoring. Although technical in tone, the

reporting sought to reconcile impairment movements with macroeconomic assumptions and portfolio-specific overlays.

During the COVID-19 crisis (2020–2021), the Group introduced a systematic ESG Assessment for corporate clients, embedding environmental and social analysis directly into credit files and decision-making processes. At the same time, COVID-affected sectors were monitored under heightened scrutiny, and staging criteria were refined to strike a balance between prudence and the avoidance of mechanical pro-cyclicality.

In 2022, the share of exposures under the IRB increased, and ESG policies were extended to additional segments. The bank addressed geopolitical shocks by disclosing enhanced monitoring of energy-sensitive sectors and the prudential treatment of exposures indirectly affected by the war in Ukraine. Allowance dynamics were presented together with scenario-weighting choices, supported by the continued use of early-warning indicators, quarterly committee reviews, and sector analyses.

By 2023, disclosure reflected a phase of consolidation. The ESG Assessment was fully embedded for large corporates, with a roadmap for wider rollout, reliance on IRB models remained central, and concentration-risk management (by country, sector, and counterparty) was emphasized against a backdrop of portfolio rebalancing.

Overall, BNP Paribas' disclosure strengths are the global credit policy structure, the explicit operationalization of ESG within credit files, and clear governance through recurring committees and early-warning processes. Their weaknesses lie in the technical density of the presentation and in the relatively modest quantification of climate-risk impacts, compared to the sophistication of the process descriptions. Relative to its peers, BNP Paribas appears among the most advanced in integrating ESG into day-to-day credit decisions, albeit with a disclosure style primarily oriented towards regulatory audiences.

Crédit Agricole

The analysis of Crédit Agricole's credit risk disclosure between 2019 and 2023 highlights a strong emphasis on regulatory alignment and quantitative transparency, accompanied by a gradual expansion of the narrative context around macroeconomic and ESG themes. Disclosures were consistently presented within the "Risks and Pillar 3" architecture of the Universal Registration Document, ensuring structural coherence and comparability. The overarching narrative consistently situated credit risk within the Group's universal and mutualist model, supported by extensive tabular disclosures by asset class and approach (IRB versus standardized), reflecting a process-driven and prudential orientation.

In the pre-pandemic years (2019–2020), particular importance was attached to the high share of IRB-covered exposures, robust governance and internal controls, and the detailed disaggregation of exposures across corporates, retail, sovereigns, and institutions. In 2020, the onset of COVID-19 shifted disclosure toward customer support measures (state-guaranteed loans, moratoria) and prudential overlays for vulnerable sectors, while maintaining a predominantly regulatory and quantitative tone. Although this approach ensured comparability and completeness, the interpretive layer—linking sectoral narratives to stress-test outcomes—was less developed than in some peers.

The COVID-19 crisis (2020–2021) marked a more explicit connection between systemic shocks and the provisioning framework. Reports described the treatment of moratoria and the calibration of macroeconomic scenarios for expected-loss models, alongside reminders of cooperative governance and solvency buffers as stabilising factors.

The 2021 report signalled the integration of ESG and climate considerations into credit policy. Qualitative criteria were embedded in origination standards and sectoral policies (notably in agriculture and real estate), and transition objectives were framed within Group commitments. Although the approach remained largely qualitative, it aligned the Group with supervisory expectations and positioned climate risk as a constraint on future origination and portfolio steering.

In 2022, against the backdrop of the war in Ukraine and the energy price shock, the disclosure narrative was reshaped. The bank reported the prudential implications of geopolitical risk, inflation, and rapid monetary tightening, with provisioning dynamics and cost of risk directly tied to these exogenous pressures. At the same time, the “Ambitions 2025” plan extended sectoral decarbonization roadmaps, reinforcing the link between ESG commitments and credit steering.

By 2023, disclosure will be consolidated around themes of resilience and ESG integration. The Group underlined its strong solvency and capacity to absorb shocks, while expanding sectoral transition roadmaps and explicitly referencing climate steering within the risk appetite framework.

Crédit Agricole’s disclosure strengths include the systematic IRB coverage, clear exposure taxonomies, and the integration of ESG commitments at policy level. Weaknesses are in limited qualitative insight into sectoral sensitivities and in the modest prominence of scenario-based stress narratives within the credit-risk chapter itself.

Santander

The analysis of Santander’s credit risk disclosure between 2019 and 2023 shows that it was systematically embedded in the Group’s risk management framework, with dedicated sections on Credit Risk, strengthened references to governance, and cross-references to quantitative notes, thereby ensuring structural coherence and comparability. The narrative repeatedly emphasized alignment with the Risk Appetite Framework (RAF), portfolio segmentation by business line and geography, and the proactive monitoring of exposures, reflecting a prudent and forward-looking stance.

In the pre-pandemic period (2019–2020), greater attention was given to credit risk governance and to the codification of origination, approval, and recovery processes. Internal models (PD, LGD, EAD) were described in detail, alongside the use of early-warning indicators, stress testing, and limits by counterparty, sector, and country. In 2019, the Group consolidated a transversal operating model for credit risk, with standardized practices and growing digitalization of decision-making flows. In 2020, disclosures reinforced the balance between commercial objectives and risk tolerance, underlining concentration discipline and the role of risk committees in escalation and oversight.

During the COVID-19 crisis (2020–2021), the bank devoted extensive sections to customer support measures (moratoria, state-guaranteed loans, and payment holidays) and to methodological adjustments in expected credit loss calculations, including management overlays, scenario reweighting, and recalibration of staging triggers to avoid pro-cyclicality. At the same time, sectoral surveillance was intensified (for example, in tourism, transport, and consumer finance) and watch lists were strengthened, with explicit reconciliation between impairment movements and macroeconomic shocks. Santander distinguished itself by embedding sectoral insights into the credit narrative while maintaining consistency with the RAF.

In 2022, disclosure was shaped by the war in Ukraine, inflation, and monetary normalization. With no significant direct exposures to the jurisdictions in conflict, the Group focused on monitoring indirect channels (such as energy and commodities) and on vulnerable portfolios, particularly specific geographies and consumer segments.

By 2023, the emphasis shifted to consolidation. Structural de-risking, portfolio stability, and ESG integration into the credit cycle were reinforced, with references to relief policies for vulnerable borrowers in certain jurisdictions and tactical adjustments in more sensitive segments (such as cards and selected retail portfolios). Impairment attribution continued to be anchored in scenario analysis and selective overlays, now presented as a routine governance practice.

Overall, Santander's disclosure strengths include end-to-end structuring of the credit cycle, transparency in moratoria and restructuring during the pandemic, and the consolidation of a transversal credit risk operating model with digitalization and ESG references. Weaknesses include a technically dense style, largely regulatory in orientation, that may reduce accessibility for non-specialist readers, and a still-limited quantification of climate-related risk relative to the detailed process descriptions.

UniCredit

The analysis of UniCredit's credit risk disclosure between 2019 and 2023 shows a gradual evolution in the articulation of governance, methodology, and emerging themes. Disclosures were consistently included in Part E: Information on risks and hedging policies (with cross-references to Pillar 3), ensuring coherence and comparability. The narrative consistently highlighted alignment with the RAF, discipline in concentration management, and continuous monitoring of exposures, underpinning a prudent and forward-looking stance.

In the pre-pandemic period (2019–2020), emphasis was placed on the governance architecture—namely, the separation between origination and independent control functions—and on the codification of general principles for credit activity, with centralized model development and validation, and dedicated oversight of NPEs. Measurement relied on expected-loss methodologies and CRR-compliant mitigation techniques, together with RAF thresholds and early-warning metrics. The disclosure stood out for its granularity in assigning responsibilities and escalation channels, as well as for the systematic linkage between processes, limits, and IFRS 9 staging.

With the COVID-19 crisis (2020–2021), the bank began to describe in detail the implementation of moratoria (both legislative and non-legislative), the use of IFRS 9 overlays, staging recalibrations, and sectoral vulnerability filters to avoid pro-cyclicality. Provisioning decisions were anchored in extended macro scenarios and intensive model governance with frequent reviews, documenting the interaction between regulatory relief, model performance, and impairment outcomes.

The 2021 report also marked the explicit integration of ESG and climate-related risks into credit governance. Although still largely qualitative, references included sectoral alignment, climate risk heat maps, and reinforced due diligence in more exposed sectors, anticipating European supervisory expectations and positioning ESG as a transversal constraint on origination and steering.

In 2022, the war in Ukraine prompted a reconfiguration of disclosure: the bank presented assessments of impacted exposures, de-risking actions, and prudential reinforcements, linking these to concentration discipline and sectoral monitoring in the face of inflation and the energy shock. Pandemic-related measures and staging adjustments were also normalized.

By 2023, practices introduced during the crisis—such as scenarios, overlays, and sectoral monitoring—had become routine, while climate integration advanced within the RAF and sectoral policies, rendering the report more consolidated. The narrative emphasized resilience, structural de-risking, and the bank’s capacity to absorb shocks.

UniCredit’s Strengths include RAF articulation, detailed overlays and staging adjustments, and progressive ESG/climate integration. Weaknesses stem from its dense technical register—with numerous regulatory references—and the still-limited quantification of climate-related risk relative to process maturity.

Société Générale

The analysis of Société Générale's credit risk disclosure between 2019 and 2023 reveals a comprehensive, governance-oriented, and highly structured approach, consistently embedded in the "Credit Risk" sections of its Universal Registration Documents. Over the years, disclosures emphasized the Group's governance framework, the role of the Risk Department in defining and monitoring risk appetite in cooperation with Finance, and the balance between first-line business accountability and second-line independent risk control.

In the pre-pandemic period (2019–2020), Société Générale presented its credit approval process around three guiding principles: independence between business lines and risk units, systematic use of internal ratings, and delegation of authority based on counterparties' ratings. Concentration risk monitoring was a central theme, with explicit reporting on compliance with the large regulatory exposure limit (25% of equity) and the stricter internal limit of 10%. Portfolios under scrutiny included retail housing loans (backed by Crédit Logement guarantees), leveraged finance, oil and gas, commercial real estate, hedge funds, and shadow banking. Detailed stress testing procedures were also reported, combining macroeconomic shocks with sector-specific scenarios.

During the pandemic (2020–2021), disclosure was adapted to highlight COVID-related risks and the role of state-guaranteed loans in France. Retail portfolios were managed through statistical scoring systems and industrialized processes, while provisioning followed IFRS 9 staging rules, with expected loss models calibrated to macroeconomic forecasts. The governance narrative stressed permanent controls by the Risk Department and quarterly reporting to CORISQ and the Board.

In the post-pandemic years (2022–2023), disclosures expanded the treatment of concentration, sectoral, and country risks. The 2022 report documented the impact of the Russia-Ukraine crisis, with specific monitoring of the European energy sector. Stress tests combined recurring portfolio analyses with ad hoc crisis scenarios. Credit risk mitigation was presented with notable granularity, including data on guarantees and collateral (€388.5 billion in 2022), detailed breakdowns between retail and corporate segments, and the widespread use of Crédit Logement guarantees on French mortgages. The 2023 report introduced explicit references to ESG risk factors, treated not as a separate category but as an aggravating element of credit risk, embedded within identification, quantification, and monitoring processes. This marked a convergence with evolving European regulatory expectations on climate and sustainability risks.

Société Générale's disclosure is distinguished by the clear articulation of governance, integration of stress testing and sector analysis, and progressive incorporation of ESG factors. Weaknesses lie in the technical density of the disclosure, which may limit accessibility for non-specialist stakeholders, and in the limited forward-looking quantification of climate-related exposures.

Bank of America

The analysis of Bank of America's credit risk disclosure between 2019 and 2023 reveals a stable reporting framework, aligned with U.S. GAAP, with its evolution shaped by the adoption of CECL and subsequent macroeconomic shocks. Disclosures were systematically presented in the MD&A ("Managing Risk — Credit Risk Management") and in the notes on portfolios and allowances, ensuring structural coherence and comparability. Key themes included alignment with the Risk Framework, the segmentation of consumer and commercial portfolios, and the monitoring of criticized and nonaccrual exposures.

In the pre-pandemic years (2019–2020), the focus was on governance and the methodological transition to CECL, effective from January 1, 2020, which shifted the allowance framework from an incurred-loss approach to lifetime expected losses. In 2019, underwriting practices, early-warning indicators, and escalation to independent special assets teams were consolidated. In 2020, disclosures detailed the design of macroeconomic scenarios, trajectory weightings, and the introduction of management overlays, as well as the reconciliation of allowance changes across consumer and commercial segments.

During the COVID-19 crisis (2020–2021), the bank devoted extensive sections to customer accommodation programs (deferrals and modifications) and to methodological adjustments under CECL. Scenario weightings were recalibrated, vulnerability indicators introduced, and intensified monitoring applied to sensitive sectors such as leisure, energy, and leveraged finance. In 2021, as macroeconomic conditions improved, part of the reserves were released, though the discipline of scenario design and selective overlays was retained as a governance tool.

In 2022, the narrative shifted to the challenges of inflation, monetary tightening, and geopolitical shocks. Disclosure emphasized the continued use of scenarios and overlays, with particular focus on macro-sensitive portfolios, most notably commercial real estate (CRE) and credit cards—presented in a prudential manner and supported by roll-forwards and detailed asset-quality disclosures.

By 2023, the reporting architecture remained stable, with emphasis on consolidation: reinforcing resilience, maintaining disciplined credit selection, and ensuring structural portfolio stability, alongside recurring references to heightened monitoring of vulnerable segments (CRE offices and credit cards). CECL disclosure maintains transparency in scenario design and allowance attribution, now fully embedded as a routine practice.

Overall, Bank of America's disclosure Strengths are the explicit articulation of CECL mechanics (scenarios, overlays, sensitivities), segment-level allowance attribution, and clarity of governance structures. Their weaknesses lie in the technically dense reporting—rich in accounting references—which can reduce accessibility for non-specialists, and in the cautious integration of climate-risk quantification within the core credit-risk narrative.

Citigroup Inc

The analysis of Citibank's credit risk disclosure between 2019 and 2023 was systematically embedded in the risk management framework of the Form 10-K—principally in the "Credit Risk" section of the MD&A and in the notes on loans, allowances, and credit quality—thereby ensuring coherence and comparability. Notable throughout was the consistent emphasis on alignment with the Risk Appetite Framework (RAF), the clear segmentation between institutional and consumer books, and the proactive monitoring of criticized and nonaccrual exposures.

In the pre-pandemic period (2019–2020), detailed descriptions were provided of the roles of first-line business units and independent risk management, escalation through credit committees, and concentration limits by obligor, sector, and country. In 2020, the adoption of CECL shifted the allowance framework to lifetime expected losses, with reserve changes explicitly attributed to scenario paths and portfolio-specific overlays.

During the COVID-19 crisis (2020–2021), the bank devoted extensive sections to customer support initiatives—such as deferrals and other accommodations across cards, mortgages, and small business—and to CECL-based methodological adjustments. Management overlays were introduced into allowance calculations, scenario weightings recalibrated, and vulnerability indicators developed for sectors such as aviation, hospitality, commercial real estate, and energy, to avoid pro-cyclical tightening while maintaining prudence. At the same time, reports documented intensified surveillance, including expanded criticized/watch lists, sectoral heat maps, and country limits, underscoring adaptive model governance.

The 2021 report also marked the explicit integration of ESG and climate-related considerations into credit risk governance. Climate and broader sustainability factors were incorporated—initially in a qualitative, policy-driven manner—into origination standards, sector frameworks, and top-down portfolio steering, with references to client engagement and transition pathways. Although still largely qualitative at this stage, these disclosures demonstrated responsiveness to supervisory expectations and began to link sectoral strategy to the bank's risk appetite.

In 2022, the war in Ukraine prompted further adjustments in disclosure. Citibank provided a detailed assessment of exposures linked to Russia and Ukraine, distinguishing between local banking positions, cross-border claims, and trade finance. The assessment outlined de-risking actions and described additional provisioning and valuation choices. At the same time, the bank reported the wind-down of pandemic accommodations, the normalization of delinquency flows in consumer cards, and the continued strengthening of sectoral monitoring amid inflation and monetary tightening.

By 2023, themes of resilience, structural de-risking, and ESG integration were reinforced, with disclosure underlining both the long-term stability of the credit portfolio and the bank's capacity to absorb shocks in a higher-rate environment. Allowance governance—now less crisis-driven—retained scenario-based elements and selective overlays as permanent features. Commercial real estate and consumer segments with heavy use of revolving credit received enhanced and recurring attention, alongside the updated U.S. GAAP treatment of loan modifications, moving beyond legacy TDR conventions.

Citibank's strengths include the explicit articulation of CECL mechanics (scenario sets, overlays, and attribution), the clear separation of institutional versus consumer credit dynamics, and the early inclusion of climate considerations in sector policy and portfolio steering. Weaknesses lie primarily in the technical density of certain sections—rich in accounting and regulatory cross-references—which may limit accessibility for non-specialists, and in the still-limited quantification of climate-related credit risks relative to the maturity of process descriptions.

Goldman Sachs

The analysis of Goldman Sachs' credit risk disclosure between 2019 and 2023 appeared each year in a dedicated "Credit Risk Management" section, ensuring comparability and alignment with the firm's broader risk management framework. The narrative remained focused on exposures arising from OTC derivatives, loans and lending commitments, securities financing transactions, and cash placements with central banks, reflecting the firm's business model as a global market intermediary.

In the pre-pandemic years (2019–2020), disclosures systematically explained the internal counterparty review process, annual credit evaluations, and internal rating methodologies. The bank provided detailed accounts of exposure measurement, combining "current" and "potential" exposure metrics, and explicitly reported on the use of collateral, guarantees, and netting agreements. Stress testing procedures were described extensively, with scenarios covering sovereign default shocks, cross-risk factor stresses, and concentrations across industries and geographies.

During the pandemic (2020–2021), reporting was adapted to expand coverage of counterparty credit quality, with particular attention to sovereign exposures and central bank deposits, which rose sharply as part of the liquidity build-up. Non-investment-grade exposures decreased in relative terms, with the bank highlighting the mitigating effect of collateral arrangements and daily margining. At the same time, Goldman Sachs incorporated COVID-related risks into its stress testing framework but refrained from introducing management overlays in expected credit loss (ECL) calculations like those adopted by European banks under IFRS 9.

In the post-pandemic years (2022–2023), disclosure reinforced themes of concentration risk management and sectoral monitoring. The 2022 report provided granular tables on net OTC derivatives exposure by rating bucket and maturity, alongside methodologies for credit valuation adjustment (CVA), offering investors a precise view of counterparty risk dynamics. By 2023, disclosures emphasized reductions in aggregate credit exposure driven by declines in clearinghouse receivables, while lending commitments rose moderately. The treatment of risk mitigants, particularly collateral valuation and haircuts, was systematically explained.

Overall, Goldman Sachs' disclosure stands out for its precision, quantitative detail, and consistent framing of credit risk within a market-intermediation business model. Strengths lie in the systematic stress testing framework, disaggregation of exposures, and clarity in describing netting and collateral practices. Weaknesses are observed in the absence of forward-looking ESG risk integration and in the limited accessibility of disclosures, which remain technical and heavily data-driven.

Wells Fargo

The analysis of Wells Fargo's credit risk disclosure between 2019 and 2023 reveals a data-rich reporting framework aligned with U.S. regulatory standards, progressively adapted to extraordinary shocks such as the COVID-19 pandemic and subsequent macro-financial pressures. Disclosures were presented in the "Risk Management – Credit Risk Management" section of the annual report, supported by extensive portfolio tables and narrative explanations. Commercial and consumer portfolios were clearly distinguished, with oversight responsibilities emphasized for Independent Risk Management (IRM) and the Board's Risk Committee.

In the pre-pandemic period (2019–2020), Wells Fargo's disclosure highlighted governance and the adoption of the new CECL standard in 2020. The 2019 report described the central role of disciplined underwriting, risk rating systems, and independent oversight in monitoring credit exposures. With the shift to CECL in January 2020, the bank underlined the forward-looking nature of the provisioning methodology, explicitly linking allowance estimates to macroeconomic scenarios. The 2020 annual report introduced expanded disclosures on COVID-related credit accommodations and TDR exemptions under the CARES Act, detailing how deferrals and government-guaranteed lending programs were treated for accounting and risk purposes.

During the pandemic, the 2020 and 2021 filings provided extensive coverage of customer support programs, loan deferrals, and the exemption of certain modifications from TDR classification under the CARES Act and interagency guidance. Reports were explicit in describing the weighting of base and downside scenarios in allowance estimates and in attributing portfolio trends to pandemic dynamics.

In 2022, the annual report described relatively stable asset quality but acknowledged inflationary pressures, rising interest rates, and mounting stress in commercial real estate (CRE). Disclosures highlighted the build-up of allowances for CRE exposures, particularly offices and retail, while also noting the normalization of consumer credit card delinquencies. Governance narratives reaffirmed the role of the Board's Credit Subcommittee and IRM in the continuous review of scenarios and overlay factors. The 2022 disclosure also integrated more systematic discussions of country risk exposures, with detailed breakdowns of non-U.S. loans and top sovereign exposures.

By 2023, climate considerations were explicitly referenced as being integrated into credit risk management activities, although quantification remained limited. Portfolio reviews included granular industry-level disclosures, state-level segmentation of CRE, and tables of the top 20 country exposures, underscoring continuity in the bank's detailed approach.

Taken as a whole, Wells Fargo's credit risk disclosure key strengths include the clear separation of commercial and consumer portfolios, detailed reporting on criticized assets and nonperforming loans, and explicit explanations of CECL scenario weightings and overlays. And during COVID-19, they were particularly comprehensive, integrating customer accommodation programs with risk measurement. Weaknesses lie in the technical nature of the reports—dense with tables and accounting references—which may limit accessibility to non-specialist readers, and in the relatively limited forward-looking integration of ESG/climate risks compared to leading European peers.

JPMorgan Chase & Co.

The analysis of JPMorgan Chase's credit risk disclosure between 2019 and 2023 was systematically embedded in the bank's risk management architecture—principally in the "Credit (and Investment) Risk Management" section of the MD&A and in the related notes. The overarching narrative consistently emphasized the alignment of the credit strategy with the Risk Appetite Framework (RAF), the segmentation of exposures between wholesale and consumer portfolios, and the proactive monitoring of criticized and nonaccrual categories.

In the pre-pandemic years (2019–2020), detailed descriptions were provided of the roles of first-line business units and independent risk management, supported by credit committees and a firm-wide limit framework—covering the definition of the RAF, the setting of obligor, industry, and country limits, and ensuring effective escalation. The use of internal rating systems (obligor grades and facility ratings), early-warning indicators, and stress testing (including CCAR) was reported as central to measurement and control. Beginning in 2020, the adoption of CECL shifted the allowance methodology from incurred losses to lifetime expected losses, and reports explicitly linked reserve dynamics to scenario design and portfolio-specific overlays.

During the COVID-19 crisis (2020–2021), the bank reported extensively on customer support initiatives—including deferrals and other accommodations across cards, mortgages, and small business, as well as participation in government-backed programs—and on methodological adjustments to credit risk assessment under CECL. Management overlays were added to expected loss calculations, scenario weights recalibrated, and vulnerability indicators developed for sectors such as aviation, hospitality, commercial real estate, and energy, to avoid pro-cyclical tightening while maintaining prudent risk management. At the same time, reports documented intensified surveillance, including expanded criticized/watch lists, sectoral heat maps, and country limits, underscoring the adaptive use of model governance.

The 2021 report also marked the explicit integration of ESG and climate-related considerations into credit risk governance. Climate and broader sustainability references were incorporated—initially in a qualitative, policy-driven manner—into origination standards, sectoral frameworks (for example, energy, autos, and real estate), and top-down portfolio steering, with references to client engagement and transition pathways. Although still predominantly qualitative, these disclosures reflected responsiveness to emerging supervisory expectations on climate risk and began to link sectoral strategy more systematically to the credit risk appetite.

In 2022, against the backdrop of the war in Ukraine, disclosures presented a structured assessment of exposures linked to Russia and Ukraine, distinguishing local banking positions, cross-border claims, and trade finance, outlining de-risking actions, and describing additional provisioning and valuation choices. At the same time, the bank reported the wind-down of pandemic accommodations, the normalization of delinquency flows in consumer cards, and the continued reinforcement of sectoral monitoring amid inflation and rapid monetary tightening, ensuring continuity with the narrative developed in prior years.

By 2023, themes of resilience, structural de-risking, and ESG integration were reinforced, with disclosure underlining both the long-term stability of the credit portfolio and the bank's capacity to absorb shocks in a higher-rate environment. Allowance governance—now less crisis-driven—retained scenario-based elements and selective overlays as standing features. Commercial real estate (particularly offices) and consumer segments with heavy use of revolving credit received enhanced and recurring attention. In line with changes in U.S. GAAP presentation, the treatment of loan modifications evolved beyond legacy TDR conventions toward a more effects-based narrative, without altering the underlying emphasis on early detection and remedial action.

Taken as a whole, JPMorgan Chase's disclosure strengths were the explicit articulation of CECL mechanics (scenario sets, overlays, and segment-level attribution), the clear separation of wholesale versus consumer credit dynamics, and the early inclusion of climate-related considerations in sector policy and portfolio steering. Their weaknesses were the highly technical nature of certain sections, often dense with accounting and regulatory cross-references, which may limit accessibility for non-specialist readers, and in the still-limited quantification of climate-related credit risks relative to the sophistication of process descriptions.

Overall content analysis

At the beginning of the period under review, US banks scored slightly higher in terms of quantitative transparency, largely due to the introduction of CECL in 2020 and the extensive use of impairment roll-forwards and scenario sensitivity tables. However, by the end of the period, European banks had gradually overtaken their US counterparts in qualitative dimensions, due to the integration of ESG and climate factors into credit governance and industry guidance.

Although the overall results are similar between the two banking systems, content analysis reveals significant differences. One of the most obvious is that US banks favour disclosure that is heavily focused on impairments, providing a detailed numerical breakdown of changes in provisions between consumer and wholesale portfolios. In contrast, European banks emphasise governance structures, Risk Appetite Frameworks, and the incorporation of ESG factors into origination and monitoring processes.

During the pandemic years, these differences became particularly visible. US banks framed COVID-19 through the construction and subsequent reversal of CECL provisions, accompanied by detailed discussions on overlays, voluntary moratoriums, and specific sensitivities by segment, such as commercial real estate or credit cards. European banks, on the other hand, have focused on moratoriums — both legislative and non-legislative — in conjunction with state-guaranteed credit programmes, while also emphasising the recalibration of staging to avoid procyclicality. In both cases, disclosures expanded, but with a distinct national flavour: in the US, the focus was on the mathematics of provisions; in Europe, on the governance of support measures and staging policies.

In 2022, with the Russia-Ukraine conflict and inflationary shocks, the divergence became apparent once again. US banks focused their reporting on macro-sensitive domestic portfolios, particularly commercial real estate (offices) and revolving consumer credit, while European banks systematically disclosed direct exposures to Russia and Ukraine, sanctions risks and de-risking strategies, often linking these factors to broader vulnerabilities in the energy sector. Finally, in 2023, ESG integration became a differentiating factor: European banks such as BNP Paribas, ING and UniCredit disclosed structured frameworks that incorporate climate considerations directly into sectoral credit policies, while US banks addressed the issue mainly in parallel reports, with limited quantification in the core narrative of credit risk.

In summary, comparative evidence suggests that US banks are particularly effective at explaining what has changed in numbers and why, providing stakeholders with granular analyses of provision dynamics. European banks, on the other hand, stand out for showing how credit risk is governed and guided, especially as ESG and climate risk become an operational part of credit processes. The most informative model would therefore be one that combines the quantitative and scenario-based approach typical of the US with the ESG governance and operationalization typical of Europe, offering disclosure that is both transparent in terms of figures and solid in terms of strategic framework.

5. Conclusion

Over time, many examples of financial crises and significant losses have exposed serious deficiencies in the transparency of credit institutions, demonstrating the importance of clear and effective communication with the market. Risk disclosure allows us to understand how banks balance the need to inform investors and stakeholders with the obligation to protect strategic information, thus avoiding the risk of compromising their competitive position.

In this study, the disclosure practices of a sample of European and North American banks were examined, using a mixed content analysis methodology that combines both qualitative and quantitative approaches. This methodology made it possible to capture not only the breadth of the information disclosed but also its depth, consistency, and responsiveness to external shocks. In the case of credit risk, the analysis proved particularly relevant, since this is the most critical risk for banking activity, directly linked to the core function of credit institutions and to their impact on financial stability (Tutino, 2015).

The results highlighted significant differences between the two systems. European banks provided more detailed and structured disclosures, strongly shaped by IFRS standards and by the supervisory framework of the European Central Bank. The information was generally more extensive, though at times redundant, reflecting the formalistic and regulatory orientation of the European model. By contrast, North American banks, subject to U.S. GAAP and the scrutiny of federal regulators, adopted a more quantitative and objective style of disclosure, focused on metrics, macroeconomic scenarios, and provisioning dynamics. Although less detailed from a narrative perspective, these disclosures proved more consistent and more oriented toward comparability across institutions.

It was also observed that both systems reacted differently to external shocks such as the COVID-19 pandemic and the war in Ukraine. In Europe, reports emphasized prudential overlays, staging mechanisms, and the progressive integration of ESG factors. In the United States, the use of CECL as a tool for adapting to adverse scenarios was particularly emphasized, along with detailed disclosure of reserves by segment and sector. These differences may be seen as evidence of the influence of regulatory and cultural frameworks on how information is communicated.

In summary, this study showed that credit risk disclosure, although mandatory in both contexts, varies in form, depth, and emphasis. European banks would benefit from greater simplification and integration of information, reducing redundancies and increasing clarity, while North American banks could improve the qualitative dimension of their disclosures by better contextualizing the figures presented. Improvements in these practices would lead to greater overall transparency, reduced information asymmetries, and strengthened investor confidence, thereby contributing to the more efficient functioning of global financial markets.

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