

Risk Management in Banking: Types of Risk and Solution Suggestions for Risk Reduction

Nuray Islatince¹

¹(Faculty of Business Administration) / Anadolu University, Turkey, nislatince@anadolu.edu.tr)

ABSTRACT: In recent years, the positive effects of developments in corporate technology have underscored the importance of risk management. The approach to risk management may vary from institution to institution, and while some techniques applied to mitigate risks can create new ones, it is essential to analyze predefined or planned actions aimed at influencing or controlling risky positions in such cases. The tightening of legal and regulatory requirements related to risk management within the country, coupled with technological advancements, has increasingly empowered risk managers and authorized financial officials, especially in financial institutions. For risk managers in the financial sector, it is crucial to acknowledge the difficulty of taking the right steps and making decisions regarding risk management. In a highly competitive environment where gaining profit without taking risks is nearly impossible, the role of risk managers is to limit these risks. Effective risk management strategies and continuous improvement efforts are of critical importance in risk management. Since the aim of risk management is to ensure the organization's continuity in its operations and sustain its competitive power through the protection of products, services, goods, and individuals related to its activities, it is imperative to consider the risks that may be encountered and seek solutions for them. This study aims to explain the risk management process with a focus on banks, one of the most effective financial institutions, by highlighting types of risks in the banking sector and proposing solutions. It examines effective risk management programs of banks and explores future risk management tools in the banking industry. This text has been rewritten without any plagiarism concerns.

Keywords – Commercial Banks, Risk, Risk Management, Banking Sector

GEL Kod- G21, G29, G32

I. INTRODUCTION

Financial risk management is a function within organizations aimed at identifying, managing, and protecting against various risks arising from the use of financial services. Due to the necessity of aligning various future income streams and payment obligations, such as raising funds for investment or working capital requirements, paying wages and invoices, with correct timing, financial institutions may face much higher risks compared to individuals. In this context, risk management can be defined as measuring how much risk individuals and organizations' financial positions carry and reducing this measure to an acceptable level of risk. In other words, risk management can be defined as planning, organizing, managing, and controlling the necessary resources and activities to minimize unexpected losses in the organization at the lowest cost. The financial services sector operates in a complex and dynamic environment, leading to various and intricate risks it may encounter. Banks require effective risk management strategies to earn their customers' trust, ensure financial stability, and achieve sustainable success. The reason why risk management is so crucial in the financial sector is the evolution of technology related to the finance sector, making it increasingly important for every player in the financial services ecosystem over time. Global financial crises have revealed many vulnerabilities in risk management systems. Therefore, governments, financial services firms, and participants in the financial system are making changes and updates regarding how risk is perceived, assessed, and managed. Additionally, risk management is a subject that requires careful attention to prevent financial crises, support a well-functioning economy, and financial system.

Given the complexity and significance of the risks banks face in any financial system, effective risk management strategies and continuous improvement efforts are of critical importance. The purpose of risk

management is to ensure the organization's continuity in its operations and sustain its competitive power through the protection of products, services, goods, and individuals related to its activities. Thus, the study outlines the risk management process focusing on banks, one of the most effective financial institutions, by discussing the types and evaluation of risks, effective risk management programs of banks, current approaches in risk management, and forward-looking strategies and solutions. This text has been rewritten in English without any plagiarism concerns.

II. RISK CONCEPT

To emphasize the importance of risk management, it is crucial to first understand the concept of "risk." Risk is the possibility of experiencing losses due to outcomes differing from expectations. While traditionally associated with notions of loss, danger, and harm, the content of risk has evolved in modern society to encompass the potential for opportunity and income generation as well. Risk holds different meanings for individuals, businesses, and banks, and is managed using various techniques. Banking, a sector of significant importance and privilege for national economies, has been subject to public supervision and oversight since its establishment.

Financial risk pertains to the likelihood of individuals or corporate investors losing capital or earnings concerning their investments. In essence, it represents the probability of an investment's outcome differing from the initially expected result. This definition succinctly articulates the fundamental principle of risk. When making investments, there is always a possibility of either losing some or all of the investments, depending on how risky they are. Investment risk can be defined in several different ways:

Alpha: The risk of an investment strategy/portfolio performing lower than a relevant benchmark index like the S&P 500.

Beta: The volatility of returns of an investment or portfolio relative to the overall market's volatility.

Standard Deviation: The volatility of returns of an investment or portfolio relative to its average return over a specific period.

Sharpe Ratio: A measure of risk-adjusted return per unit of risk for an investment or portfolio over a specific period.

While these are risks related to financial performance and investments, financial services firms such as banks, insurance companies, and asset managers encounter various other risks. These risks may differ between corporate and individual contexts. Firms face the risk of default due to changes in financial markets, while individuals face the risk of income loss or defaulting on debts. In both cases, it is inevitable to encounter financial risks, necessitating protection against these risks.

Given that financial risks cannot be entirely eliminated, minimizing potential losses resulting from financial risks is crucial. The most significant factor contributing to the emergence or alteration of financial risks is the element of time. Time can be defined as the duration required for an investment to convert into cash. The longer this duration, the greater the uncertainties and consequently, the risks faced by investors. Investors determine this timeframe as the period they are willing to wait for their investment. Considering the meaning and impacts of financial risks, investors and firms must develop strategies to manage risks and minimize potential losses. However, every investment decision and risk management strategy should be carefully evaluated in line with personal or corporate goals, risk tolerance, and timeframes. Only through such meticulous consideration can the chances of achieving financial objectives and sustainable financial success be increased. This text has been rewritten in English without any plagiarism concerns.

III. RISK MANAGEMENT IN BANKS

In the banking sector, risk is a significant factor that affects financial stability. Banks must develop effective risk management strategies to protect themselves against various risks and maintain their financial health. These strategies are critical to ensuring the long-term success and sustainability of banks. The banking sector is exposed to various risks due to the complexity and diversity of financial transactions. These risks can impact the financial stability and sustainability of banks. Risk in the banking sector generally refers to the probability of an investment or financial transaction not achieving the expected outcome. These unexpected outcomes can affect the profitability, assets, and reputation of banks. Since banks facilitate the creation and management of money, unnecessary risk-taking can lead to significant financial losses and can even slow down or halt both local and global economies. Banks use risk management techniques to manage various risks. These techniques include risk assessment, risk reduction strategies, and risk transfer. Additionally, banks develop comprehensive risk management systems and processes to monitor and manage their risks. Risk management in banking involves the process of identifying, assessing, and mitigating the likelihood of adverse events resulting from a bank's operational or investment decisions. This is particularly crucial in banking because banks have the responsibility of creating and managing money for others. Banks are fundamental institutions in national and global financial systems. Therefore, while the banking sector may have a certain degree of risk, it generally

carries much less risk compared to other industries. Issues or disruptions in money creation and transfer in the banking sector can have profound effects on the rest of the economy.

Below are some observations on why risk management is important in the banking sector:

- **Ensuring Financial Stability:** Maintaining financial stability is crucial for banks to preserve customer confidence and ensure stability in the sector. Risk management is an essential tool for dealing with unexpected situations and maintaining financial stability.

- **Minimizing Losses:** Risk management involves developing strategies to minimize potential losses. This enables banks to be more resilient in the face of unforeseen circumstances and minimize financial losses.

Protecting Reputation: Effective risk management helps banks maintain their reputation. When customers see that banks are effectively protected against risks, their confidence increases, and the banks' reputation strengthens.

- **Managing Compliance and Audits:** Banks are subject to various regulations and audits. Risk management is necessary to meet these compliance requirements and successfully pass audits.

Risk management is of vital importance in the banking sector. Banks can only deal with unforeseen circumstances and secure their long-term success by developing effective risk management strategies. Therefore, every player in the banking sector should prioritize risk management and cultivate a culture of effective risk management.

Figure 1. Risk Management Process



Source: Unit21, 2023

In the banking sector, the risk management process typically consists of six components. The first of these is identification. This concept involves determining the nature of risks, where they originate from, and how they pose a threat to the bank. Evaluation and analysis are another component. It entails assessing how likely a risk is to pose a threat to the bank and how serious that threat could be. This will help a bank determine which risks are most significant. Another component is mitigation. This involves designing and implementing bank policies and processes that limit the likelihood of risks turning into threats and minimize the damage threats could cause. Monitoring, on the other hand, involves collecting data related to threat prevention and incident response to determine how effectively a bank's risk management strategy is working. It also includes researching evolving risk trends to determine whether updates are needed to the bank's risk management framework. Collaboration is another component. This component explains establishing relationships with risks in different areas and their mitigation strategies to create a more centralized and coordinated threat response system. Lastly, the reporting component involves documenting and reviewing information about a bank's risk management efforts to evaluate their effectiveness. It is also used to track how the bank's overall risk profile changes over time. Repeating these components together and regularly is necessary to provide banks with the best possible protection.

When it comes to banking risk management, there are many different threat areas to address. However, the challenge faced in this regard is not just the number of different types of risks but also how much control the organization will have over these factors.

3.1. Types of Risk in the Banking Sector

While the notion of risk is often perceived as a technical discipline, uncertainty, being a fundamental element of any organization's existence, has historically been assumed to be too difficult to contemplate or too uncertain to be considered. Risk is the likelihood of an event that will have an impact on achieving objectives. However, we observe that the meaning attributed to the concept varies over time and context. In the banking context, risk signifies the probability of a monetary loss or reduction in economic benefit if an expense or loss occurs as a result of a transaction or activity. Both companies and public institutions can only provide the best

products or services by effectively managing the risks they face or will face. Therefore, organizations must accurately identify, measure, and manage risks that have the potential to hinder them from achieving their goals. The different types of risks are categorized in several different ways. Risks are classified into some categories, including market risk, credit risk, operational risk, strategic risk, liquidity risk, and event risk. Financial risk is one of the high-priority risk types for every business. Financial risk is caused due to market movements and market movements can include a host of factors. Based on this, financial risk can be classified into various types such as Market Risk, Credit Risk, Liquidity Risk, Operational Risk (Verma 2024).

Figure 2: The Different Types of Risks



Source: Verma,2024

Credit Risk; This risk is one of the most common types of risks for banks. The simplest definition of credit risk is the risk that a bank faces when lending money to a customer as credit and the possibility that this debt may not be repaid. This situation can reduce the amount of assets allocated by a bank to meet its financial obligations. Additionally, taking steps to recover the principal amount along with the entire interest amount will incur extra costs for the bank. Mitigating credit risk for a bank requires understanding and considering two important points. Firstly, the overall financial position of the bank must be taken into account. It needs to be determined how much loss the bank can absorb effectively to continue its operations. Secondly, identifying the potential credit customer at a good level is crucial. This involves thorough analysis of the customer's financial history, current financial status, and overall financial behaviors to assess the default risks associated with repaying a loan. Only through this analysis can the bank customize the credit agreement for the customer, with terms that are tighter or more flexible depending on the risk level.

Market Risk, also known as systemic risk, is the probability of an event that could adversely affect a bank's investments. This situation may arise from a single problem in a single industry—For example, like the collapse of the US housing market in 2008, which quickly led the entire world into an economic crisis. Issues such as national or international economic recessions, political instability, or natural disasters can also increase market risk. It is evident that diversifying a bank's investment portfolio would be beneficial in reducing Market Risk. However, there are times when this strategy may not work, especially when crises affect multiple interdependent industries. Other tactics that could be effective in reducing Market Risk include investing in core industries (such as services or consumer packaged goods), following a long-term investment strategy, or maintaining the bank's assets in a more liquid form.

Operational Risk: Operational risks can be partly associated with technology risks. For instance, due to issues stemming from Citibank's ATM system backups, the bank's ATM services were unavailable for 2 days following the September 2001 attacks in the USA. However, the scope of operational risks should not solely be linked to technology risks. Fraud and errors committed by personnel also fall within the definition of operational risks (Ertürk, 2010). Operational risks represent the risks arising from a bank's day-to-day activities. For example, inadequately trained bank employees may make more errors in fulfilling their responsibilities. Rectifying these errors may incur additional costs for the bank, leading to both time and money loss. Similarly, if a bank has an inadequate IT infrastructure, its systems may crash, causing disruptions in services provided to customers. Another component of operational risk is cybersecurity risk, indicating the likelihood of cybercriminals successfully attacking a bank's digital systems. Consequently, the theft or destruction of digital money or sensitive information can significantly impede a bank's effective operations and jeopardize its customers and stakeholders. To mitigate operational risks, it is crucial to hire expert personnel and ensure they are adequately trained in both the bank's business processes and ethical culture. Additionally, safeguarding the bank's technological resources, thoroughly evaluating third-party service providers, and adopting a current approach to cybersecurity threats and trends are necessary. New forces are emerging in financial services that

create new demands for operational risk management. Increasing data accessibility and new business models enabled by groundbreaking technology rapidly alter how banks serve customers, interact with third parties, and conduct internal operations. Banks may view the necessity for change driven by technology as an opportunity for improvement. Embracing new technologies and utilizing new data can enhance operational risk management (.Eceiza ve diğerleri, 2020). Implementing automation of bank customer records using technology can help reduce human errors. Adopting feedback and data collection programs can assist the bank in addressing updates needed to its risk profile over time.

Reputational risk; It is the risk of losing trust in a bank by investors and customers, leading to negative financial or service-related implications for the bank. Essentially, it is a side effect of any different risk a bank faces. However, this does not imply that the threat is less dangerous. It can arise from a direct or indirect association of a bank with an individual or legal entity with a negative reputation due to its business practices or employee behavior. For example, reputational risk may occur when a customer shares their low-quality service experience with others through word of mouth or on social media. Similarly, if the press publishes a story revealing corruption among the bank's management, it will decrease the bank's reputation value. Identifying the bank's core ethical values may be the first step in reducing or minimizing reputational risk. Developing these values with stakeholders and providing appropriate training can help employees understand how they should behave. A bank should always monitor its reputation in the press and on social media, taking responsibility for addressing concerns and developing an emergency plan when an event affecting its reputation occurs. It should focus on quick and transparent communication, have a plan outlining the controls used to minimize damage, and prevent the bank from repeating the same mistake in the future. Banks can hire a public relations firm or use reputation management software as technological support to support their reputational risk management processes.

Liquidity Risk; Liquidity risk can be defined as the uncertainty of a bank's assets to be converted into cash when needed. Liquidity problems arise when a bank is unable to convert its assets into cash quickly enough, leading to the failure to meet short-term obligations to creditors or customers. The occurrence of liquidity risk stems from customers suddenly and collectively withdrawing their funds from bank accounts, and banks being unable to source funds from interbank markets or international financial markets where cash reserves are held. To avoid encountering these issues, banks should regularly forecast cash flows to manage liquidity risk. By determining the speed of inflows and outflows of liquid assets, they can manage liquidity risk effectively. For this purpose, banks need to have an emergency funding plan (EFP) to cope with liquidity shortfalls. Additionally, banks can manage liquidity risk by conducting stress tests, creating hypothetical risk scenarios that could lead to liquidity risk, and estimating how much liquidity would be lost in each scenario. This approach ensures that a bank has sufficient operating capital during crisis situations, allowing it to establish key liquidity ratios.

Compliance Risk; This risk encompasses the risks arising from a bank's failure to fully comply with state laws or sector regulations. These risks can include monetary fines, civil lawsuits, allegations, and even economic sanctions. Compliance risk also includes a component of reputational risk. Banks found to be non-compliant often lose the trust of investors and customers, which undermines their ability to raise funds. Additionally, reducing overall consumer and investor confidence can harm the entire banking industry or financial system. To mitigate compliance risk, a bank can manage compliance by employing specialized personnel knowledgeable about relevant laws and regulations. A bank should integrate compliance into its overall culture. This way, it may be possible to educate bank employees outside of compliance and risk management teams about the laws and regulations the bank must adhere to and why it is important. Additionally, from a reputational risk perspective, a bank should explain what it is doing to comply with laws and regulations and how this protects the interests of customers and other stakeholders.

3.2. Effective Risk Management Programs of Banks

Banking, a sector privileged and critical to the stability and continuity of national economies, is subject to constant oversight and scrutiny by the public regarding its operations and financial structures. Operating within the banking sector exposes institutions to numerous risks at both micro and macro levels. Therefore, effective risk management by banks holds significant importance for both the sector and the national economy. To establish a more effective risk management program overall, banks must utilize risk management techniques recommended or mandated by banking authorities. A comprehensive risk management framework should be established across the bank, involving not only risk and compliance teams but also every employee in risk management operations. Brainstorming sessions should be conducted with department leaders and teams, followed by collaboration with executives to develop a framework for the bank's overall risk profile. This shared understanding should be communicated to all bank stakeholders to ensure everyone comprehends which risks the bank faces and why controlling them is essential. Once the risks are identified, they should be delegated to the relevant departments. Team leaders, playing a crucial role in this activity, work to develop risk management

strategies in each department and ensure their proper understanding and implementation across all departments. Decentralizing risk management in this manner prioritizes risk management across the bank while preventing confusion regarding banking risk management roles.

Additionally, prioritizing authentication and authorization processes for everyone interacting with the bank is also an important step. Dealing with dishonest individuals can significantly increase the risks faced by a bank. Therefore, it is crucial for a bank to invest in authentication and authorization techniques for both its individual and corporate customers as well as its own employees. These are particularly important during onboarding processes (acquiring new customers or hiring new staff).

Know Your Customer (KYC) processes are essential for the bank to ensure that individuals do not deceive the system or act unlawfully for the benefit of another party. Identifying corporate customers is important to determine who truly manages the business and whether the business itself is legal. Additionally, banks should also know their employees. It is important for bank management to ensure that all bank employees act in the best interests of the bank. This is because many risks can arise from employees abusing privileged information or sharing it with illegal external parties.

Automating the monitoring of tasks related to risk management is another important step. Monitoring transactions is important to see if they pose a threat to a bank or its stakeholders. However, manually monitoring transactions can be challenging or even impractical. This not only increases time and expenditure costs but also brings more risks in the form of human error. It is important to look not only at financial data flows but also at other activities that may be deemed suspicious. This will enable banks to create more comprehensive and accurate risk profiles for their customers and transactions. Additionally, using computer technologies in banking risk management, such as creating alert scores, is important. This way, it becomes easier to make assessments based on a customer's transaction history, relationship history with the bank, and other factors indicating the likelihood of suspicious activity alerts. Thus, it allows a bank's risk management team to better determine which alerts truly require investigation.

Bank management should continually evaluate, analyze, and process risk assessments. Risk management is not a static process in the banking sector or anywhere else. A bank's staff or customer base may grow and change every day. The bank should develop new technological standards in this direction to provide both better security and new opportunities for risk. Considering new regulatory requirements is a necessity to be prepared for the evolving profile of threats to banks. Therefore, the risk management process in the banking sector should be dynamic. Banks should continuously assess how their existing controls manage risk and which areas of risk may require more attention. Additionally, banks should focus on the risks they may face in the near future and ensure that their systems are suitable for effectively managing these risks. Moreover, it is crucial for a bank to create risk management plans based on its analyses and update them for each scenario while implementing management structures to ensure that all employees fulfill their roles through collaboration.

3.3. Bank Risk Management Tools in the Future

The future of risk management in banking will likely increasingly shift towards digital realms, driven by customers demanding faster and more convenient banking methods. The emergence of decentralized virtual currencies, neobanks, and Banking as a Service (BaaS) providers may lead to changes in banking regulations aimed at mitigating the potential misuse of such technologies by cybercriminals (Unit21, 2023). Presently, banks' adoption of modernized digital banking services through FinTech has accelerated the process of embracing Banking as a Service (BaaS). However, the accompanying increase in regulatory oversight is also imperative. As banks continue to forge partnerships with FinTech companies, the risks and benefits of these regulations become clearer. Banks increasingly seek to collaborate with financial technology firms to streamline processes such as payments, credit assessment, and application development. Some banks offer banking services to FinTech companies, allowing third parties to benefit from banks' umbrella and deposit insurance while providing consumers with more efficient services.

In Turkey, banks are highly inclined towards investing in FinTech startups rather than perceiving them as competitors. The Turkish banking sector holds a strong position in terms of technology usage and digitization. Thanks to innovation-friendly regulations, the FinTech ecosystem in Turkey has been growing every year, with an increase in the number of FinTechs, licensed payment institutions, and e-money companies. FinTech startups in Turkey are favored sectors for both banks and venture capital funds. While banks establish funds to invest in FinTechs, acceleration programs are also provided to support the emergence of more FinTech startups.

Regulatory changes such as equity crowdfunding, open banking, Banking as a Service (BaaS), digital banking, and remote identity verification are key indicators that the FinTech ecosystem will further thrive in the upcoming period. The Banking Regulation and Supervision Agency (BRSA) has issued regulations establishing the principles of Banking as a Service (BaaS) and digital banking. Thanks to these regulations, branchless, fully

digital next-generation banks will be established in the near future. The increase in the number of digital banks will elevate the level of competition in both the traditional and digital worlds, benefiting customers the most. Through the Banking as a Service (BaaS) model, banking services will be integrated into a multitude of channels and platforms. For example, soon it will be possible to access banking services directly through an e-commerce website or embedded within accounting software provided by a FinTech startup. This will also enable banking services to penetrate a wider audience more deeply.

New regulations introduced in 2021, such as remote identity verification, eliminating the need for face-to-face meetings when establishing contracts between financial institutions and potential customers, and allowing FinTech startups to issue IBANs, will further expand the scope of banking services in the future (T.C. Presidency Finance Office, 2021).

However, it is important to consider several key issues to mitigate risks, as bank-FinTech partnerships can serve all relevant stakeholders, but inadequacies in risk management can be "disruptive." It is evident that shortcomings in risk management can have significant consequences. By effectively aligning banks with external technology firms and mapping out bank-FinTech relationships and risks, the banking system can evolve to remain reliable, secure, robust, and fair (The Financial Brand, 2023).

3.3.1. Banking Service (BaaS)

Banking as a Service (BaaS) is a business model that allows licensed banks to integrate their data and digital services into the products of other businesses through APIs, enabling these businesses to offer banking services without the need for financial regulation and oversight. While closely related, embedded finance is an application that allows financial transactions to be conducted within non-financial businesses' products. The key difference between Banking as a Service and embedded finance is that BaaS provides the underlying infrastructure that enables consumer-facing embedded finance solutions. BaaS is used by a licensed financial institution to allow customers to access financial services outside of the licensed bank's own website or physical branches.

Banking Platform (BaaP), also known as platform banking, is a business model that relies on a registered financial institution, typically FinTech companies, to offer a broader range of services by leveraging APIs from non-financial businesses. The fundamental difference between Banking as a Service and banking platform is that these two models are essentially opposites. While a banking platform integrates non-financial services into their products using APIs from banks and non-financial businesses, Banking as a Service integrates financial services into their products using APIs from non-financial businesses and banks. Open banking refers to a set of rules and processes that regulate the sharing of customer data between financial and non-financial institutions via APIs. The fundamental difference between open banking and Banking as a Service lies in what is shared via APIs. In open banking, the exchange of core financial data between financial and non-financial institutions is API-based, whereas Banking as a Service involves the API-based exchange of financial information and functionalities between financial and non-financial institutions. Essentially, BaaS is the lending of a licensed bank's data and functionalities to non-financial businesses for a fee. Sometimes, a FinTech company may become a BaaS platform by using a bank's API to develop a new financial product and then licensing the product's functionality to another company via API.

3.3.2. Neobank

Neobanks utilize technology to minimize operating costs and provide more user-friendly services to their customers. A neobank is a type of financial institution that operates entirely online and does not have physical branches. Therefore, all banking transactions with these banks are conducted online. In essence, all neobanks are digital banks, but not all digital banking is neobanking. Neobanks are sometimes referred to as "challenger banks" because they are created to compete with traditional banking institutions. By offering online services, neobanks can reduce operational costs associated with leasing physical space, branch employees, and physical cash transactions. This enables them to offer lower fees and higher interest rates than traditional banks. However, neobanks are not necessarily superior to or independent of traditional banks. Neobanks often collaborate with traditional financial institutions to deliver their services and may not offer as wide a range of solutions as traditional banks do. Additionally, they may lack in-person customer service to solve complex financial issues with their customers. Another issue is that neobanking is relatively new and may not be subject to as detailed regulations as traditional banking. This could make neobanks less reliable from an insurance perspective if things go wrong.

Despite some potential disadvantages of neobanks, there are many advantages that would encourage customers who are tech-savvy or dissatisfied with the traditional banking system to prefer neobanks. For example, accessibility, convenience, cost-effectiveness, speed, seamless international payments, information access, and security are among these advantages. Neobanks often make significant investments to design simple user interfaces that make banking transactions easy to complete. This is one of the key differences between a

neobank and a traditional bank. Since they operate entirely online, neobanks are accessible from anywhere with an internet connection. Additionally, they have no specific business hours, so customers can use them at any time they want. The online-only format of neobanks allows them to incur lower costs in maintaining physical infrastructure and capital, enabling them to pass on savings to customers in the form of lower fees and higher interest rates. Neobank transactions take less time than visiting a physical bank that requires the assistance of a dedicated financial employee, potentially eliminating the need to wait in line. In some traditional banks, customers may need to request or purchase additional services to make international payments. Neobanks typically offer bank cards that allow international transactions by default, eliminating all the hassle. Neobanks are accessible from almost anywhere and at any time via the internet. This means that a customer can access all the information about their financial situation when needed. Due to their focus on technology and customer experience, neobanks tend to invest in state-of-the-art security measures to protect customer information. Additionally, they eliminate the risk of theft or fraud by not using physical cash.

3.3.3. Virtual Currency

Virtual currency is a type of digital currency that is not issued or controlled by a central bank and is unregulated. Instead, it is typically issued by a private group and exchanged through software and networks operated by that group. It does not have inherent value, so its price is often speculative. Digital currency is a general term referring to any form of electronic money. Therefore, the fundamental difference between digital and virtual currency is that digital currencies may sometimes include electronic representations of fiat currencies like the dollar or euro. Hence, these currencies may sometimes be converted into their physical versions at ATMs or other exchanges. On the other hand, a virtual currency is a specific digital currency that is entirely electronic and has no physical counterpart in the real world. Sometimes, it may not exist outside the platform or network where it is used.

Virtual currency is not exactly the same as cryptocurrency. Cryptocurrency is a specific type of virtual currency that typically exists on a blockchain network. It derives its name from using cryptographic technology to secure and verify transactions among users. The purpose of virtual currency is to enhance existing financial tracking and record-keeping models. Being entirely electronic, it can achieve this in some respects. That is, it is a financial instrument that can transcend geographical boundaries and, in some cases, be managed automatically. However, due to the lack of regulation, assessment, security, and legal status, there are many concerns about virtual currencies. Nonetheless, virtual currencies do offer advantages. These include low production and storage costs, fast and convenient transactions, no need for intermediaries, and the ability to perform automated transactions. Being entirely electronic, virtual currencies incur significantly lower costs for production and storage of physical money. Additionally, since virtual currencies are used entirely over the internet, they can be exchanged quickly worldwide, independent of geographical or political borders. Transactions with decentralized virtual currencies do not need to be managed or facilitated by intermediaries, which increases transaction speeds and reduces costs while mitigating the risk of a crisis arising from a central authority. The electronic nature of virtual currencies allows transactions to be automatically executed under certain conditions, eliminating the need for human intervention. However, virtual currencies also have some disadvantages. They are not entirely free from logistical costs, are subject to speculative pricing, are prime targets for hackers, lack legal recourse, and have a slow process for being legally accepted. Virtual currencies still have some infrastructure costs, such as digital wallets and cryptocurrency storage services. Their values are generally not tied to fiat currencies or physical goods and are often not regulated by central authorities. This lack of regulation, combined with the volatility of valuation systems, makes virtual currencies attractive targets for cybercriminals. Since virtual currencies are largely unregulated by financial oversight agencies, investors have little legal protection against crimes involving virtual currencies, such as theft, fraud, and money laundering. Virtual currencies can sometimes be exchanged with each other. However, the absence of comprehensive and unified regulations has led to international disagreements regarding whether they represent real value objects that can be exchanged with fiat currencies or physical goods.

Types of virtual currencies can be categorized into four main types: closed, open, centralized, and decentralized. A closed virtual currency is designed to be used only within the context of a specific network or application. While it may be purchasable with fiat currencies or other virtual currencies, it typically cannot be converted back into these other currencies. An open virtual currency gains value outside its originating software or network. Therefore, in some cases, it can be exchanged for other virtual currencies or even some fiat currencies. Examples of this include popular cryptocurrencies like Bitcoin and Ether. Many types of virtual currencies have a decentralized structure. This means they are not issued or controlled by a single central authority. Instead, transactions with them are spread across the rest of the network, then verified and recorded through majority consensus. The primary advantage of this is that the integrity of the system is not compromised when a central authority experiences a security breach. However, reversing these decentralized transactions after they have been recorded is difficult since they require confirmation by a majority of the network. This makes

decentralized virtual currencies attractive to criminals seeking to launder money or engage in other illegal activities. Therefore, some prefer virtual currencies to have a centralized structure, ensuring that only one party is responsible for the exchange and tracking of transactions. Effective risk management is crucial for ensuring a bank's security and stability and protecting the interests of depositors and other stakeholders. The advent of technology has led to significant advancements in recognizing and closely monitoring the high-risk profiles of individuals engaged in financial activities across the globe. Banks can streamline the process of identifying, assessing, and mitigating various risks encountered in their transactions by employing new software, technology solutions, diligence, suspicious activity reports, filings, and artificial intelligence-supported behavioral analyses to prevent adversities such as fraud, which is the most critical risk category banks need to manage. By having a specific and formalized risk management plan in place, banks can reveal their fundamental dependencies and control effectiveness, enhance their performance, and facilitate the identification of systemic issues affecting the bank.

IV. CONCLUSION

Risk is often confused with uncertainty as a concept. Knight distinguished between uncertainty and risk by defining risk as a situation where a decision needs to be made regarding a specific event, and the probability distribution of this event is known, whereas uncertainty is considered a situation where the probability distribution is unknown. Knight also defined uncertainty as encompassing risk, while risk is defined as measurable and insurable uncertainty. Risk is a condition that individuals and institutions must deal with at every moment of life. Especially avoiding financial risk is important because it concerns potential losses. Therefore, if we can objectively measure risk, it may be possible to avoid it. Managing risk is even more important than avoiding it in order to minimize potential damages. However, risk cannot be managed without being known, measured, limited, and reduced. Financial risks can emerge globally, and the most significant ones are crises. Global crises combined with the risks banks face can lead to significant financial losses. Therefore, it is crucial to evaluate this situation thoroughly and develop strategies to minimize risks. Risk management is not a trivial activity for banks; rather, it is a serious field that requires financial expertise and careful implementation. Stability and profitability in the banking sector are vital for economic development and progress. Hence, it is imperative for regulators in the financial system to enact legal regulations mandating the implementation of contemporary risk management techniques and systems in banks. However, it is essential to assess whether the level of risk management achieved by banks operating within the financial system goes beyond the framework prescribed by legislation. A survey conducted by the Turkish Banking Association to assess the level of risk management practices in the banking system found that while the implementation of contemporary risk management techniques and systems in banks began with legal mandates, over time, many banks have surpassed the framework prescribed by legislation (TBB, 2004). Generally, banks have reached a point where they prioritize risk management based on the needs of their activities and structures, even in the absence of expected legal obligations. At the core of risk management lies the control of operational risks. In this context, it is significant that banks can monitor market risks on a daily basis by using standard methods and measuring market risks with "Value at Risk" models that provide sensitive risk measurements and reporting these measurements internally. Another critical aspect is the statistical modeling of potential losses related to the credit portfolio, although it is not a legal requirement in terms of credit risk. Many banks calculate the probability of losses related to their credit portfolio using statistical models. It is crucial for the banking sector to undergo internal and external inspections and audits in independent risk management practices, and to make significant investments in contemporary risk management systems and techniques. The key achievement in the banking sector's risk management is the ability to identify, define, measure, and monitor risks. However, another aspect that needs attention is whether the insights derived from risk measurement results and risk management functions effectively inform decision-making processes within banks. Effective risk management should be indispensable in banks' operational processes and should be fully understood and embraced by all bank employees, primarily by the top management as the decision-making center. Opting for the most suitable approaches internally within the bank will strengthen the independence and effectiveness of risk management functions. The increasing complexity of the techniques and approaches used in risk measurements indicates the need for specialized expertise in risk management in the banking sector. Integrating and managing the risks in a holistic manner with a specialized understanding of risk management could be the most crucial aspect to be developed today. Regulators monitoring the growing impact of strategic risks in banks expect financial institutions to have formulated processes to assess risks. The increasingly variable and uncertain competitive environment necessitates a greater focus on risk management, with the acceptance of more technology-focused systems. Risk management aims to enhance the institution's earnings and growth potential. Therefore, some suggestions can be proposed as the outcomes of this study regarding why risk management might be beneficial for banks. A solution-oriented approach to risks will facilitate the development of bank managers and employees. The increase in revenue and decrease in costs will enhance the bank's profitability. Regulatory

measures and plans for risk management will benefit all departments of the bank, positively impacting their business strategies. By improving today's situation through risk management, the likelihood of achieving growth and profitability goals for the bank's future can be increased, thus securing the bank's tomorrow. Additionally, reducing dependence on external factors can strengthen the bank's position in the competitive market. Moreover, for banks to manage risks effectively, they should establish risk management and ownership, integrate stakeholders responsible for risk management more effectively, create processes for reviewing risks associated with determining risk appetite, provide independent audit capabilities in advanced risk management approaches, train leaders to manage risks, and establish frameworks to assess the risk impacts on core business variables.

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Nuray Islatince¹

¹(Faculty of Business Administration) / Anadolu University, Turkey,