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DIGITAL TECHNOLOGIES IN THE BANKING SYSTEM FOR RISK MANAGEMENT CONTROL

Abstract. The digitalization of the economy poses serious challenges to existing business models, including the structural divisions of the banking system, which is currently undergoing transformation worldwide. Digital banking offers customers significant advantages, such as ease of transactions and savings. By using digitalization, banks can offer customers improved services that provide convenience, save time, reduce human errors, and thereby increase customer loyalty. Digitalization will also benefit customers by facilitating cashless transactions. That is why it is important today to improve service processes in banks and implement digital transformation through the effective use of digital technologies. As a result, there is a growing trend in the number of digital banking users worldwide. Digitization also has various serious drawbacks, such as fraud cases and cyberattacks, which have increased especially in recent years. In this context, the aim of this study is to assess the status of digital banking in the world, to provide effective and secure mobile banking services in digital banking, which requires risk management. The article, also based on the latest literary sources, examines the issue of "financial risk management" on the example of the Georgian banking sector. The banking sector has a great impact on the country's economy. Difficulties in the banking business can become the cause of the country's economic crisis. These difficulties affect a large part of society. Therefore, it is necessary to analyze, develop and improve existing methods of financial risk management. The banking sector has a great impact on the country's economy. Difficulties in the banking business can become the cause of the country's economic crisis.

Keywords: *Banking Sector, Risk Management, Digitalization, Business, Financial System.*

JEL Classification: O1; R4; D8; A13.

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Introduction. The penetration of digital technologies into the banking system includes the implementation of real-time card-to-card (P2P) money transfer operations by banks to customers through mobile application programs, taxation, budgeting, micro-loans and loan repayment. The ability to make online deposits, remotely open deposits or savings and loan (credit) accounts, make payments from an international bank card account, perform online conversion operations and perform other widely used remote banking services is a fundamentally new model for creating and managing a business (Banna & Alam, 2021).

Application-based mobile banking is currently the fastest growing delivery channel (Ashish, 2024).

The tasks of the study are is to assess the status of digital banking in the world, to ensure effective and secure mobile banking services for digital banking, which requires risk management.

The subject of this study is to assess the status of digital banking in the world, to provide effective and secure mobile banking services for digital banking, which requires risk management. (Takuya et al., 2019).

The objectives of the article are to explore the issue of "financial risk management" using the example of the Georgian banking sector.

Financial innovation can contribute significantly to stronger financial regulation, which will facilitate investment in infrastructure, financial inclusion (e.g., mobile banking, digital banking), resource mobilization, and balanced economic growth. Financial innovation influences the structure of financial markets, and a well-developed financial system supports economic development. (Guo & Zhang, 2023).

In the conditions of global financial capital movement, various methods are used to prevent losses and damage. The study and implementation of these methods in Georgian practice is very important.

In the conditions of the modern global digital economy. Financial risks and management issues are becoming increasingly relevant.

This paper examines financial risks and management issues, which are becoming more relevant in the conditions of the modern global economy, it requires great effort, given the diverse nature of risks, however, today commercial banks operating in Georgia successfully operate in the market. They have developed internal policies, operate risk management departments, which daily identify, monitor and seek ways to eliminate risks. Also, risk minimization is regulated by the regulations of the National Bank of Georgia, normative acts that impose certain restrictions in order to prevent financial losses. Of the banking risks, credit risk is of particular importance, since improperly planned lending, ineffective management of the credit portfolio, a large volume of unpaid loans lead to financial risks and a commercial bank may have to cease operations.

Literature Review. The introduction of new technologies has become a prerequisite for banks to stay in business. Scientists give different definitions of mobile banking. According to the definition of Huet, Badré, and Filliol, "Mobile banking is a tool that allows banks to offer their business processes on digital platforms, providing services to users anytime and anywhere" (Kiorktsis & Dimopoulou, 2025).

I. Shermatova's research examines the main drivers of online banking adoption, including consumer demand and the spread of mobile technologies. In addition, Shermatova examines the role of private and state-owned banks in expanding digital banking services and their efforts to educate and protect consumers (Shermatova, 2024).

M. Madrakhimov examined the importance of remote banking services in banking, their delivery channels, and opportunities for further expansion, as well as analyzed the status of the development of remote banking services in the practice of commercial banks in Uzbekistan based on collected statistical data (Madraximov, 2021).

Z. Mamadyorov studied the increasing availability of remote banking services based on various banking technologies, their level of security, risk minimization, service benefits, etc., and econometrically analyzed the factors based on the conceptual model he created (Mamadiyarov, 2021).

The theoretical basis of the research is the works of Georgian and foreign academic economists and practicing specialists working in the field of corporate governance in the banking sector, analytical reports of state and public institutions, international and national normative and legal documents related to corporate governance, decisions and recommendations of international financial and economic organizations.

Summarizing the processes studied and the opinions expressed above, practical work is needed to implement the digital transformation of banks through the effective use of digital technologies, simplifying the process of working with customers, saving time and costs, and improving banking operations (Xiaohong et al. 2010).

Research Methodology. During the research process, statistical, analytical, comparative, observational, inductive, monitoring, assessments, and other methods of analysis are used. As a result, the topic of the literature being studied was fully disclosed. Reforms carried out during the digitalization efforts by numerous foreign countries are considered.

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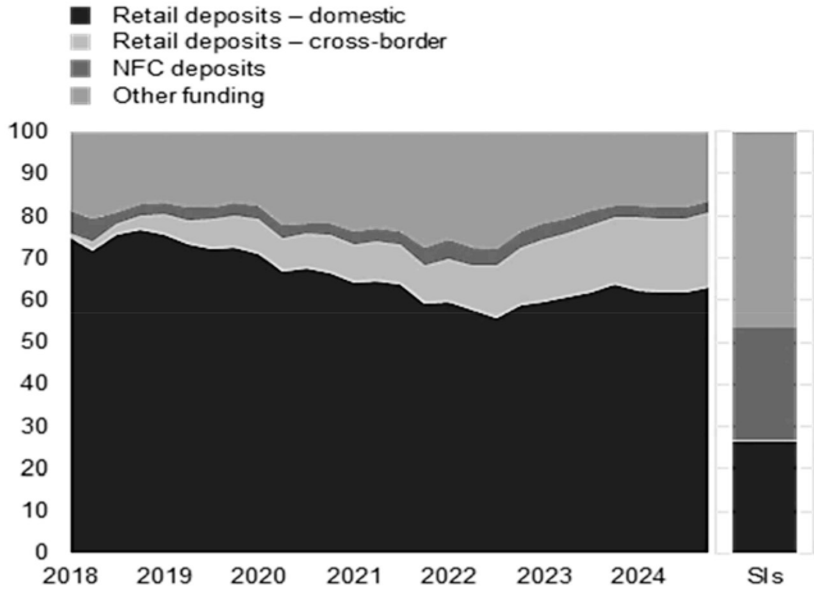

Fig. 1. Panel A

Sources: Company announcements and ECB (supervisory data)

The research methodology is based on the fundamental general philosophical principle of the unity of the historical and logical, a systematic scientific approach.

In Georgia, the concept of corporate governance is used by various businesses, especially in the banking system, although it requires methodical and systematic improvement and integration into a unified legal framework to increase business efficiency and provide greater credibility to shareholders and other interested parties.

Main results. The number of banks using digital technology is increasing worldwide (Wang et al, 2020).

Over the past 20 years, technology has brought incredible changes to banking around the world. For example, major US banks such as Bank of America, JPMC, Wells Fargo, U.S. Bank, Capital One, Truist, and PNC Bank offer a mobile payment service called Zelle. By 2025, 87% of the US population was connected through the Zelle mobile banking app, which was supported by over 2,000 financial institutions. Mobile banking is also one of the most popular banking services in India, with over 85% of banks offering the service to their customers. Analysts expect this figure to continue to grow. However, as the number of mobile banking users increases, it can lead to an increase in fraud, which can be detrimental to business owners and service users (Anthony & Marcia, 2021).

The asset mix of digital banks reveals two main types of business models (Fig. 1, panel b). Many digital banks have chosen a lender business model that transforms retail deposits collected online into loans, often also disbursed through digital channels. All digital banks operate with unusually high liquidity buffers, which may be due to the fact that digital banks' limited lending franchises prevent them from deploying funds more productively (Garcia et al, 2025).

Panel a: in Q4 2024 the median return on equity of traditional banks stood at 9.9%, 2.9 percentage points higher than that of digital banks.

Digital banks also operate with significantly higher capital ratios, which mechanically reduces returns on equity.

The growing relevance of the issue in our society and the need to implement effective banking business make it urgent to conduct a comprehensive study of the challenges and prospects of corporate governance in the Georgian banking system in order to identify risk factors associated with the use of modern financial technologies by traditional banks in global and, in particular, emerging markets such as Georgia.

There are many risks in the modern world. Due to the loss caused by risk, great importance is attached to protection from it, prevention of its negative consequences.

Risk management is an important component of any economic process, since the level of risk affects both the consumer and the income of the banking sector (Berger, 2003.) The goal of risk management is to actively control the threats affecting society or financial organizations. It allows minimizing the damage caused by the impact of various risks and the likelihood of catastrophic

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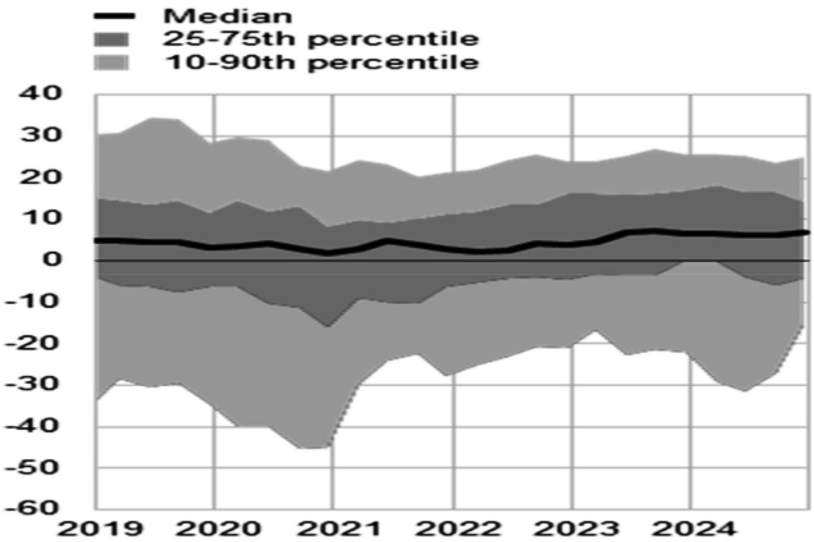

Fig. 2. **Panel B**

Sources: Company announcements and ECB (supervisory data)

losses. The more unexpected the risk, the more resources are needed to prevent its consequences. The more effectively the risk management process is planned, the more effective the activities of society or financial organizations.

The following principles of corporate governance related to risk management in commercial banks can be distinguished: Risk management department; Risk identification, monitoring and control; Risk reporting (Bielecki & Rutkowski, 2002).

To implement these principles, banks should have an independently operating risk management department with appropriate status, resources and ability to communicate with management. In addition, risk identification, monitoring and control should be carried out continuously at the level of the bank and its individual departments. The risk management and internal control infrastructure should be subject to continuous improvement. Effective risk management principles also require the effective dissemination of risk information among various structural divisions in the bank (Turmanidze, 2023).

Research. In order to summarize the issues discussed in the paper, a study was conducted to show the real situation of commercial banks. 96 credit experts working in different commercial banks were selected for the study, who have direct contact with the credit portfolio and have to determine risks in the lending process.

The results are as follows:

1. How many years have you been employed in the banking sector? (The majority of respondents have been employed in the banking sector for more than 5 years).

2. Has the volume of overdue loans increased in 2025 compared to previous years? (About half of respondents believe that their volume has increased, 29.5% believe that it has increased slightly, and 20% believe that it has not changed.).

3. In conditions of overindebtedness, additional loan financing of existing business borrowers will lead to: (52.1% of respondents believe that it will allow businesses to overcome the financial crisis).

4. How are financial risks determined and is there an appropriate service? (The bank has a financial risk management department that works to minimize financial risks) (Tsabadze & Magrakvelidz, 2021).

5. Which banking risks do you place at the highest level? (Identified fraud, credit risks, financial risks, operational risks, risks caused by software bugs and system failures).

6. Is financial risk analysis performed? (Risk analysis is constantly performed by the relevant departments of the bank).

7. Which problem worries the banking business the most? (The impact of global and local economic crises)[1].

The results of our research confirm the relationship between corporate governance and its variables (Magrakvelidze, 2025).

Finally, as it turns out, the Georgian

1 National Bank of Georgia, 2025, Decision of the Financial Stability Committee, 2025. URL: https://www.nbg.gov.ge/uploads/finstability/pr/2020/pressreleasefscfinalgeo.0212.pdf (date of access: 10.03.2026).

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banking sector employee feels that commercial banks attach special importance to transparency. Accordingly, the annual report of the commercial bank includes a section that reflects the bank's activities in implementing the principles of corporate governance (Pachkoria, 2024).

Conclusion. Today, serious work is being carried out by banks on the implementation of large projects related to digital development programs. Mobile banking is expected to continue to grow due to wider use of all types of mobile services. However, this service is not without risks. Mobile banking services have received negative publicity due to fraud incidents where bank customers' accounts were compromised through social engineering tactics or lack of financial literacy among users. Financial institutions are challenged to ensure their mobile banking services are designed and offered securely, and customers are made aware of the steps they can take to protect the integrity of their mobile banking transactions (Kuznietsova et al, 2021).

Implementation of the strategic goals of digital technologies in the banking system as well as the entire financial market will increase competition, expand the availability, quality, and types of financial services, and reduce the costs of digital technologies in the financial sector. However, more needs to be done to alleviate the customer concerns associated with the risks of using this new technology.

Based on the research and study-analysis of systemic financial risk management and related issues, the following conclusions and recommendations can be made:

As a result of the financial stability policy implemented by the National Bank, the financial sector is resilient and will continue to provide credit to the economy smoothly in 2025. Similar to last year, the banking system is highly capitalized, liquid, and profitable.

The research revealed the current real situation of commercial banks, and it turned out that the disruption of the business sector's activities had a negative impact on the demand for credit products. Therefore, the state should facilitate the recovery of businesses from the crisis, on which the proper functioning of the banking sector depends. Banks should provide additional financing to business clients in crisis based on need, in order to facilitate the return of the business sector to the usual regime, so that they become solvent, emerge from the crisis and be able to repay their bank obligations (Matten, 2000).

The study also found that the volume of overdue loans in the credit portfolio has increased. To solve this problem, the bank should implement long-term restructuring of existing overdue loans and increase the maturity of new loans. Also, to promote business, lower interest rates to help overcome the financial crisis.

The research found that credit experts are actively considering the use of insurance products in the lending sector as an important method of insuring bank risks. The introduction of new products and their improvement will significantly reduce financial risks.

To reduce risks, banks must constantly improve software systems, develop new products and introduce innovations, as well as constantly retrain staff, refine existing procedures and create financial reserves to compensate for possible losses.

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ЦИФРОВІ ТЕХНОЛОГІЇ В БАНКІВСЬКІЙ СИСТЕМІ ДЛЯ КОНТРОЛЮ УПРАВЛІННЯ РИЗИКАМИ

Цифровізація економіки ставить серйозні виклики перед існуючими бізнес-моделями, зокрема перед структурними підрозділами банківської системи, яка наразі переживає трансформацію в усьому світі. Цифровий банкінг пропонує клієнтам значні переваги, такі як зручність здійснення операцій та економія коштів. Завдяки цифровізації банки можуть пропонувати клієнтам вдосконалені послуги, що забезпечують зручність, економлять час, зменшують кількість людських помилок і, таким чином, підвищують лояльність клієнтів. Цифровізація також принесе користь клієнтам, спрощуючи безготівкові операції. Саме тому сьогодні важливо вдосконалювати процеси обслуговування в банках та впроваджувати цифрову трансформацію шляхом ефективного використання цифрових технологій. Як наслідок, у всьому світі спостерігається тенденція до зростання кількості користувачів цифрового банкінгу. Цифровізація також має низку серйозних недоліків, таких як випадки шахрайства та кібератаки, кількість яких особливо зросла в останні роки. У цьому контексті метою даного дослідження є оцінка стану цифрового банкінгу у світі, а також забезпечення ефективних і безпечних послуг мобільного банкінгу в рамках цифрового банкінгу, що вимагає управління ризиками. У статті, що також ґрунтується на найновіших літературних джерелах, розглядається питання «управління фінансовими ризиками» на прикладі банківського сектору Грузії. Банківський сектор має великий вплив на економіку країни. Труднощі в банківській діяльності можуть стати причиною економічної кризи в країні. Ці труднощі зачіпають значну частину суспільства. Тому необхідно аналізувати, розвивати та вдосконалювати існуючі методи управління фінансовими ризиками. Банківський сектор має великий вплив на економіку країни. Труднощі у банківській справі можуть стати причиною економічної кризи в країні.

Ключові слова: *банківський сектор, управління ризиками, цифровізація, бізнес, фінансова система.*

JEL Classification: O1; R4; D8; A13.

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Конфлікт інтересів: автори повідомляють про відсутність конфлікту інтересів.
Автори підтверджують, що при написанні наукової статті ресурс штучного інтелекту не використовувався.

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