



Article

Prospects for the Application of Financial Technologies in the Economic Activities of Commercial Banks

Temurbek Sheralievich Normominov*¹

1. Independent researcher Tashkent International University

* Correspondence: temurbeknormominov909@gmail.com

Abstract: This article examines the prospects for applying financial technologies in the economic activities of commercial banks in the context of digital transformation. It analyzes the main areas of FinTech implementation and their impact on operational efficiency, revenue structure, and risk management. It demonstrates that the economic impact of applying financial technologies is gradual and depends on the level of digital maturity, management quality, and human capital development. Practical recommendations are provided for the phased implementation of FinTech to improve the economic efficiency of commercial banks.

Keywords: Financial Technologies, Fintech, Commercial Banks, Digitalization, Economic Efficiency, Banking

1. Introduction

In the context of the digital transformation of the economy, financial technologies are becoming a key factor in changing the operating models of commercial banks. The active implementation of FinTech solutions—including remote banking, digital payments, automated lending, big data, and artificial intelligence—is having a significant impact on banks' operations, increasing operational efficiency, reducing costs, and expanding the range of services provided.

For commercial banks, financial technologies are not only a tool for technological modernization but also an important source of competitive advantage. The use of digital service channels and analytical platforms allows banks to optimize business processes, accelerate management decision-making, and improve customer interactions. As a result, the structure of banks' revenues and expenses is changing, and the role of non-banking financial services and digital ecosystems is increasing.

At the same time, the use of financial technologies in commercial banks' operations is accompanied by a number of challenges, including increased operational and cyber risks, the need for significant investments in digital infrastructure, and a shortage of qualified personnel. These circumstances necessitate a comprehensive analysis of the prospects for FinTech implementation, taking into account economic, institutional, and organizational factors. Despite the rapid development of financial technologies, their potential application in the economic activities of commercial banks remains insufficiently systematized in academic research. This is particularly relevant for the banking systems of

Citation: Normominov T. S. Prospects for the Application of Financial Technologies in the Economic Activities of Commercial Banks. American Journal of Economics and Business Management 2025, 8(12), 6516-6520.

Received: 20th Nov 2025

Revised: 30th Nov 2025

Accepted: 21st Dec 2025

Published: 31th Dec 2025



Copyright: © 2025 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

emerging market countries, where the digitalization of the banking sector is taking place in the context of institutional reforms and structural changes.

The purpose of this article is to examine the prospects for the application of financial technologies in the economic activities of commercial banks and to substantiate key areas for their further development in the current digital economy.

Literature Review

In international studies, the prospects for the application of financial technologies in commercial banks are considered primarily through the prism of improving efficiency and transforming business models. For example, Li analyzes the impact of FinTech on the profitability of commercial banks and shows that digital technologies can improve the economic performance of banks upon reaching a certain level of digital maturity [1]. Ayadi emphasizes that the impact of digitalization on bank efficiency is uneven and depends on the scale of the bank and the structure of its operations [2].

Nguyen notes that financial technologies contribute to a reduction in commercial banks' operating costs and improved risk management through process automation and the use of analytical tools [3]. He considers digital transformation as a key factor in improving banking performance, noting its impact on return on assets and capital [4].

Research on CIS countries focuses on the transformation of the economic model of commercial banks under the influence of digital technologies. Thus, Kurmanova notes that the implementation of FinTech leads to a change in the structure of banks' revenues and an increase in the share of commission transactions [5]. Razygraev considers digitalization as a tool for increasing the competitiveness of commercial banks and optimizing their economic activities [6].

A separate area of research is related to the analysis of the institutional and regulatory aspects of bank digitalization. Analytical materials from the Bank of Russia emphasize that the development of financial technologies in commercial banks requires the adaptation of risk management and internal control systems [7].

In the national and regional context, the role of FinTech in expanding financial services and improving the efficiency of banking activities is emphasized. For example, a report by Mastercard notes that digital financial technologies contribute to the growth of non-cash transactions and increased operational efficiency of banks [8]. KPMG indicates that the prospects for the application of FinTech in commercial banks are associated with the development of digital service channels and platform solutions [9]. Applied research on commercial banks in Uzbekistan emphasizes that digital technologies are becoming an important factor in modernizing the economic activities of banks and increasing their competitive positions [10].

2. Methodology

The study studied the processes of introducing artificial intelligence technologies in commercial banks, their impact on efficiency and the role of the human factor in this process. For this, theoretical materials, practical experiences and statistical data on the digital transformation of banks were analyzed. Comparative analysis, a systematic approach and empirical evaluation methods were used as methods. These methods made it possible to identify the impact of AI technologies on banking activities, the results of automation and existing problems.

3. Results and Discussion

Current practice shows that financial technologies have a complex impact on the economic activity of commercial banks, affecting both the revenue and expenditure sides of the banking business. Unlike traditional approaches, where efficiency was increased primarily through scaling the branch network and increasing transaction volume, the use

of FinTech enables banks to achieve economic results by optimizing processes, digitalizing customer channels, and improving risk management.

The economic impact of implementing financial technologies manifests itself in stages. Initially, banks face increased investment costs associated with developing IT infrastructure, implementing digital platforms, and training staff. However, as digital solutions mature, operating expenses decrease, business processes accelerate, and revenues, primarily commissions, increase. FinTech is thus transforming the structure of commercial banks' economic activity, shifting emphasis from traditional interest income toward digital and service sources.

The differences in the economic impact of individual FinTech trends are particularly significant. Some technologies are focused on immediate financial results (payments, remote services), while others focus on sustainable long-term efficiency gains (back office automation, risk analytics, platform solutions). In this regard, it is appropriate to consider the key areas of application of financial technologies and their associated economic impacts in a generalized manner.

Table 1. Economic effects of FinTech application in commercial banking activities.

FinTech direction	Economic effect	Result for the bank
Digital payments and mobile banking	Increased commission income, reduced costs	Expansion of the customer base, growth of transactions
Remote maintenance	Reducing operating expenses	Lower CIR, higher productivity
Online lending and scoring	Improving the speed and quality of credit decisions	Growing the loan portfolio while controlling risks
Anti-fraud and AML analytics	Reducing financial losses	Building resilience and trust
Back office automation	Optimization of processes and costs	Speed up operations, reduce errors
Platform solutions (API)	Diversification of income sources	New products and partner services

Source: compiled by the author based on a summary of scientific and analytical sources.

The data presented in the table suggest that digital payments and remote service channels provide the greatest short-term economic impact for commercial banks. These technologies enable rapid growth in transaction volumes, reduce the cost of servicing a single client, and increase fee income without a proportional increase in costs.

The medium-term impact is driven by the implementation of online lending and digital scoring models. The use of analytical tools and automated solutions accelerates credit decision-making, expands borrower reach, and simultaneously improves credit risk management. However, the economic impact in this segment directly depends on the quality of data and the effectiveness of risk management.

Back-office automation and the development of platform solutions have a long-term impact on banks' economic performance. These technologies provide a sustainable foundation for reducing operating costs, increasing process transparency, and diversifying revenue. The introduction of API solutions and partner services allows commercial banks to move beyond the traditional banking model and develop an ecosystem approach to providing financial services. Overall, the analysis confirms that financial technologies improve the economic efficiency of commercial banks not in isolation, but as part of a systemic transformation of their business model. Maximum economic impact is achieved through the comprehensive implementation of FinTech solutions, aligned with the development of internal processes, risk management, and the bank's strategic goals.

Despite the significant economic potential of financial technologies, their implementation in the economic activities of commercial banks is accompanied by a

number of limitations. One key barrier is the high initial investment associated with the development of digital infrastructure, the implementation of software solutions, and the modernization of internal processes. For some commercial banks, especially medium and small ones, these costs can temporarily reduce economic efficiency and increase the burden on financial resources.

A shortage of qualified personnel with digital and analytical competencies is also a significant constraint. Insufficient personnel training reduces banks' ability to effectively utilize FinTech solutions and slows the transformation of business processes. Furthermore, the active use of digital technologies increases cybersecurity and data protection risks, requiring additional expenditures on information security and internal control systems.

Institutional and regulatory factors are particularly important. Insufficient adaptation of the regulatory framework to new digital products and services can limit the scalability of financial technologies and reduce the expected economic impact of their implementation.

Analysis shows that the economic impact of applying financial technologies to commercial banks is gradual. During the first stage of FinTech implementation, investment costs associated with the development and implementation of digital solutions, staff training, and restructuring organizational processes predominate. During this period, the economic impact may be limited or delayed.

In the second stage, as business processes adapt and the use of digital channels increases, banks begin to realize benefits in the form of reduced operating expenses, faster operations, and increased productivity. It is at this stage that the main effect of digitalization manifests itself in the form of improved cost efficiency.

The third stage is characterized by the formation of sustainable revenue sources through digital services, platform solutions, and partnership models. In the long term, FinTech becomes not only a cost optimization tool but also a factor in structural change in the economic activities of commercial banks. Thus, the analysis results indicate that financial technologies have significant potential to improve the economic efficiency of commercial banks. However, their practical implementation is determined by a combination of technological, human resource, and institutional factors, as well as the maturity stage of digital solutions. The economic impact of FinTech emerges gradually and requires a systematic approach to implementation, necessitating the development of substantiated conclusions and practical recommendations, as presented in the final section of this study.

4. Conclusion

The study found that financial technologies are becoming a key factor in improving the economic efficiency of commercial banks in the context of digital transformation. Their implementation has a comprehensive impact on both revenue and expenditure, helping to optimize business processes, reduce operating costs, and expand revenue sources. However, the analysis confirms that the economic impact of FinTech implementation is gradual and depends on the maturity of digital solutions, the quality of management, and the institutional environment.

It was found that commercial banks achieve the greatest short-term benefits through the digitalization of payment services and remote service channels. Medium-term results are achieved through the implementation of online lending, digital scoring models, and the automation of internal processes. Long-term prospects lie in the development of platform solutions, an ecosystem approach, and partnerships with fintech companies. However, insufficient attention to human resource development and risk management can significantly reduce the expected economic impact of digitalization. Based on the analysis results, it is advisable to formulate the following practical recommendations for commercial banks:

First, the implementation of financial technologies should be based on a phased strategy, providing for a consistent transition from the digitalization of client channels to the automation of internal processes and the development of platform solutions. This approach minimizes investment risks and ensures sustainable economic impact.

Second, commercial banks are advised to prioritize the development of human capital, including enhancing staff digital competencies, training programs, and adapting organizational culture to the conditions of digital change. HR support is essential for the effective use of FinTech solutions.

Third, when implementing financial technologies, it is necessary to strengthen operational and cyber risk management systems and ensure the integration of digital solutions with internal control and compliance mechanisms. This will reduce potential financial losses and improve the resilience of banking operations. Fourth, commercial banks should develop partnership models with fintech companies and utilize open platform solutions, which facilitate revenue diversification and expand the range of banking services without significantly increasing costs.

Overall, the study's results confirm that financial technologies have significant potential for improving the economic efficiency of commercial banks. Their consistent and systematic application, taking into account organizational, personnel, and institutional factors, could become an important area for the sustainable development of the banking sector in the digital economy.

REFERENCES

- [1] Y. Li, "FinTech and commercial bank performance: Evidence from China," *Finance Research Letters*, vol. 35, art. no. 101532, 2020.
- [2] R. Ayadi, V. Pesic, and E. Sessa, "Digitalisation and bank efficiency: Evidence from European banks," *Journal of Banking Regulation*, vol. 23, no. 2, pp. 89–105, 2022.
- [3] T. H. Nguyen, "The impact of FinTech on bank efficiency and risk-taking," *International Journal of Financial Studies*, vol. 9, no. 3, pp. 1–18, 2021.
- [4] Q. He, J. Liu, and J. Lu, "Digital transformation and firm performance: Evidence from commercial banks," *Technological Forecasting and Social Change*, vol. 174, art. no. 121225, 2022.
- [5] G. K. Kurmanova, "Digital transformation of commercial banks: Economic aspects," *Bankovskoe Delo*, no. 8, pp. 22–28, 2019.
- [6] A. V. Razygraev, "Financial technologies and transformation of the business model of commercial banks," *Finansy i Kredit*, no. 6, pp. 1341–1354, 2020.
- [7] Central Bank of Russia, *Main Directions for the Development of Financial Technologies in the Financial Market of the Russian Federation*. Moscow, Russia: Bank of Russia, 2021, 64 p.
- [8] Mastercard Incorporated, *FinTech in Central Asia: Opportunities for Digital Banking Development*. New York, NY, USA: Mastercard, 2021, 36 p.
- [9] KPMG, *Pulse of FinTech H2 2022*. London, U.K.: KPMG International, 2022, 98 p.
- [10] Sh. A. Akhmedov, "Digitalization of commercial banks and its impact on economic activity," *Iqtisodiyot va Innovatsion Texnologiyalar*, no. 4, pp. 45–53, 2022.