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## EFFICIENCY OF USING FINANCIAL TECHNOLOGIES IN BANKS

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### ABSTRACT

*This article explores the impact of financial technologies (fintech) on the efficiency of commercial banks. Through the analysis of data from various sources, including fintech reports and industry publications, the research findings indicate that the implementation of fintech can significantly improve bank efficiency. Process automation, enhanced risk management, and personalized customer services all contribute to increased profitability and competitiveness. However, successful implementation requires careful planning, adequate resources, and consideration of potential risks. Overall, fintech offers commercial banks new opportunities to optimize their operations and enhance their overall efficiency.*

**KEYWORDS:** *Fintech, commercial banks, efficiency, process automation, risk management, personalized customer services, profitability, competitiveness, implementation, planning, resources, risks, optimization.*

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### INTRODUCTION

Financial technologies, or fintech, have become an integral part of the modern financial system. They offer new opportunities for commercial banks to improve their efficiency, enhance customer service, and reduce operational costs. In this article, we will explore how the implementation of financial technologies can help increase the efficiency of commercial banks.

Digital technologies are changing the way the world interacts and deals. Everyday activities are becoming more automated and integrated, from opening bank accounts to parents enrolling their children in school and applying for new social security programs and business licenses. From digitization (i.e. digitizing existing things) to digitalization (i.e. improving existing things using digital technologies), countries are moving towards simplified interactions and transactions, paperless, cashless, data-driven, and can be accessed remotely from anywhere via the internet.

In addition to reducing costs and encouraging innovation, this creates opportunities to provide better services to more people, for example by eliminating the need to physically visit offices during business hours to fill out a paper form or hand over cash for payment. To do this, countries are reforming institutions, rules and processes, as well as creating technologies and infrastructure to build trust between parties and share information, payments and other resources.

I.M. Lycheva and A.Yu. Klimenko define bank innovation as follows: "A bank that includes the creation of new ones aimed at improving the offered products, services, practices, business processes and obtaining additional income and increasing the scope of services and the level of customer satisfaction includes the process of modernization of activities"<sup>1</sup>. This definition is

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<sup>1</sup> Licheva I.M., Klimenko A.Yu. *Sovremennye tendensii innovatsionnogo razvitiya bankovskoy deyatelnosti*//Belgorodskiy ekonomicheskiy vestnik. – Belgrad, 2019. – № 1. – S. 108-113.

broader than the definitions given above, in which banking innovation includes not only new products, services, practices, but also business processes.

Also, according to F. Yuldashev, bank innovations have the following characteristics:

- innovations have a short life cycle;
- high rate of popularization of the most successful innovations in the banking sector;
- the ability to conduct scientific, especially theoretical research related to the development of banking innovations even with minimal costs;
- the chain nature of innovation, that is, one innovation creates the need and opportunity to create another to further satisfy the needs of customers<sup>2</sup>.

According to P. Homer, J. Koch and M. Siering, financial technology innovations from the point of view of operational efficiency help commercial banks to expand their service opportunities, meet the various needs of customers and increase the opportunity for future growth and thus profitability<sup>3</sup>. This definition talks about the benefits of implementing financial technologies, but it does not take into account the results of their implementation, such as the elimination of risks caused by the human factor, the reduction of operating costs, and the increase of profits.

They also believe that financial innovation has made it possible to reduce information asymmetry between banks and borrowers, thereby making banks safer and more flexible<sup>4</sup>. In this definition, the author did not take into account that the state of digital infrastructure for digital banks and financial services is not the same for all residents.

## Methods

To conduct the research, data from various sources including fintech reports, articles and publications from industry experts, as well as statistical data on the implementation of fintech in commercial banks were utilized. Analysis and comparison of bank efficiency before and after the implementation of financial technologies were conducted.

## Results

The research findings indicate that the implementation of fintech allows commercial banks to significantly improve their efficiency. Process automation, enhanced risk management, and personalized services for customers all contribute to increased profitability and overall competitiveness of the bank.

The financial technologies market in Uzbekistan faces challenges related to efficiency, risk management, customer service, profitability, competitiveness, and the implementation of new technologies. Addressing these issues will be crucial for the continued growth and development of the sector.

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<sup>2</sup> Yuldashev F.A. Upravleniya riskami v innovatsiyax bankov Uzbekistana//Sovremennye texnologii upravleniya – Kirov, 2012. –№6 (18). – S.35-40.

<sup>3</sup> Gomber P., Koch J. A., Siering M. Digital Finance and FinTech: current research and future research directions //Journal of Business Economics. – 2017. – T. 87. – C. 537-580.

<sup>4</sup> Gomber P., Koch J. A., Siering M. Digital Finance and FinTech: current research and future research directions //Journal of Business Economics. – 2017. – T. 87. – C. 537-580.

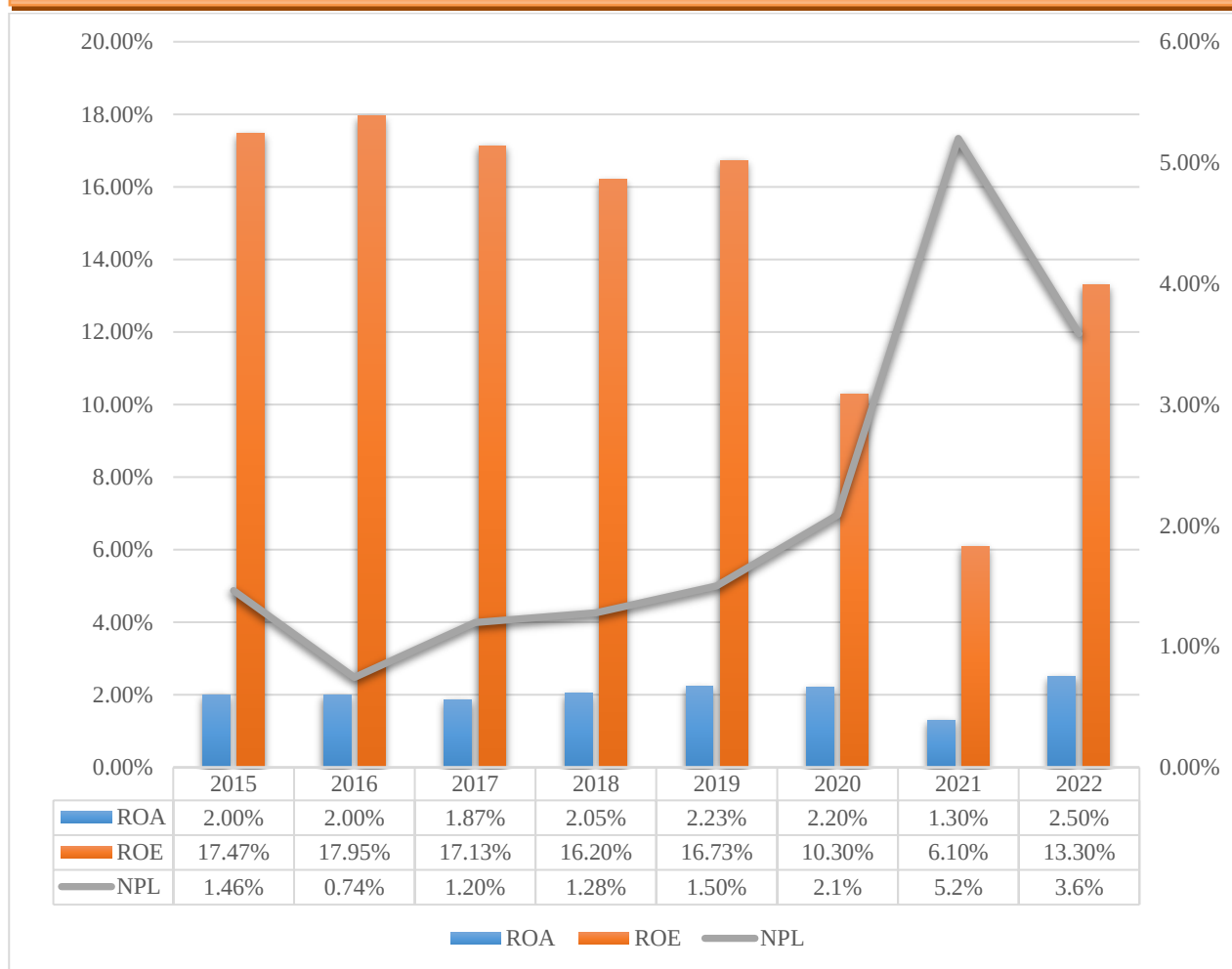


**Figure 1. Analysis of indicators of profitability and level of problem loans for the general banking system in 2015-2022**

Figure 1 shows the profitability indicators of the general banking system, that is, the indicators of asset and capital profitability, as well as the share of problem loans in the loan portfolio. The main reason for the mutual comparison of such indicators is that the bank's activity consists primarily of earning income, and the fact that a large part of its assets is mobilized at the expense of attracted funds, and taking into account the fact that it is associated with their loss and other types of risks, their stability requires not only performance indicators, but also optimized risks. From this point of view, we can see that in 2015-2020, the rate of return on assets of the banking system remained within 2 percent, and in 2021, this indicator dropped to 1.3 percent. But in 2022, this indicator is divided according to the increase of 2.5 percent. Also, we can see that the rate of return on capital was in the range of 16-18 percent in 2015-2019, but it dropped to 10.3 percent in 2020, and even 6.1 percent in 2021. Although this indicator increased to 13.3% in 2022, it did not manage to recover the level of the indicator until 2020.

In general, when talking about the level of profitability of banks, first of all, it is necessary to analyze the net profits of banks, because this indicator is an indicator of the stability of not only banks and the banking system, but also the economy.

**TABLE 1 ANALYSIS OF EFFICIENCY AND RISK INDICATORS IN COMMERCIAL BANKS**

| Name of the bank | 01.01.2023 |        |       | 01.04.2023 |       |      | difference(+/-) |       |        |
|------------------|------------|--------|-------|------------|-------|------|-----------------|-------|--------|
|                  | ROA        | ROE    | NPL   | ROA        | ROE   | NPL  | ROA             | ROE   | NPL    |
| UzSQB            | 1,4%       | 7,7%   | 2,8%  | 1,5%       | 8,6%  | 2,9% | 0,1%            | 1,0%  | 0,1%   |
| Asaka bank       | 0,1%       | 1,1%   | 3,8%  | 0,8%       | 5,5%  | 4,0% | 0,7%            | 4,4%  | 0,1%   |
| Kapital bank     | 6,1%       | 53,2%  | 1,2%  | 5,7%       | 51,5% | 0,7% | -0,3%           | -1,7% | -0,4%  |
| Hamkor bank      | 6,3%       | 33,5%  | 0,6%  | 7,5%       | 36,8% | 0,6% | 1,2%            | 3,3%  | 0,0%   |
| TBC              | -8,6%      | -30,1% | 3,7%  | 0,7%       | 2,1%  | 6%   | 9,2%            | 32,2% | 2,4%   |
| Anor bank        | 1,7%       | 16,9%  | 96,3% | 1,0%       | 9,6%  | 80%  | -0,6%           | -7,3% | -15,9% |

The data of Table 1 shows that since the beginning of this year, the performance indicators of Kapital Bank and Anor Bank have worsened, and the percentage of outstanding loans has decreased sharply. TBC bank performance has grown very fast in a very short period of time. For example, return on assets (ROA) increased by 9.2% in just one quarter, while return on equity increased by 32.2%, but the highest increase in non-performing assets (2.4%) also occurred at this bank.

Also, in order to analyze the financial stability of national banks, indicators based on Altman's Z-score model for non-producing companies were studied as part of the research:

$$Z = 6,56X_1 + 3,26X_2 + 6,72X_3 + 1,05X_4 \quad (1)$$

**TABLE 2 01.04.2023 ANALYSIS OF FINANCIAL STABILITY OF COMMERCIAL BANKS BASED ON ALTMAN'S Z-SCORE MODEL<sup>5</sup>**

| Variable | Constanta | UzMB        | UzSQB       | Aloqa bank  | Kapital bank | TBC         | Anor bank   |
|----------|-----------|-------------|-------------|-------------|--------------|-------------|-------------|
| X1       | 6,56      | 0,04        | 0,10        | 0,20        | 0,36         | 0,69        | 0,37        |
| X2       | 3,26      | 0,02        | 0,03        | 0,02        | 0,04         | -0,10       | 0,01        |
| X3       | 6,72      | 0,01        | 0,003       | 0,00        | 0,01         | 0,00        | 0,00        |
| X4       | 1,05      | 0,17        | 0,13        | 5,49        | 0,10         | 0,48        | 0,11        |
| Z        | -         | <b>0,58</b> | <b>0,88</b> | <b>7,17</b> | <b>2,70</b>  | <b>4,74</b> | <b>2,62</b> |

The data presented in Table 2 indicates that the banks are in a state of crisis because the Z indicators of Uzmilli Bank and UzSQB are less than 1.1. Anorbank with an indicator of 2.62 means that it is in a stable position. We can see that the situation in Aloqabank, Kapitalbank, TVS banks is a bit unstable, but the risks are not high. That is, according to the above table, although the NPL indicator has the highest growth (2.4%) in TBC, it is stable in terms of efficiency and problem loans indicators, it is known that it operates at a high risk level based on the Z-score model of UzSQB.

## Discussion

Financial technologies provide commercial banks with a wide range of tools to optimize their operations. However, the implementation of fintech requires significant investments and changes in

<sup>5</sup> The table was compiled by the author based on the official information of the Central Bank.

the bank's organizational culture. Additionally, risks related to cybersecurity and data protection need to be taken into consideration.

**TABLE 3 THE FINANCIAL TECHNOLOGIES MARKET IN UZBEKISTAN FACES SEVERAL CHALLENGES AND PROBLEMS**

| No. | Challenges and problems                          | Main aspects of challenges and problems                                                                                                            |
|-----|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Lack of efficiency and process automation        | Many financial institutions in Uzbekistan still rely on manual processes, which can lead to inefficiencies and errors in their operations          |
| 2.  | Limited risk management capabilities             | The lack of advanced risk management tools and practices can expose financial institutions to potential risks and vulnerabilities.                 |
| 3.  | Limited personalized customer services           | The customer experience in the financial sector is often not personalized, leading to lower customer satisfaction and loyalty.                     |
| 4.  | Profitability and competitiveness                | Many fintech companies and commercial banks in Uzbekistan struggle to maintain profitability and compete effectively in the market.                |
| 5.  | Implementation and planning challenges           | The implementation of new fintech solutions and technologies can be challenging due to limited resources and expertise.                            |
| 6.  | Optimization of resources                        | Many financial institutions in Uzbekistan struggle to optimize their resources effectively, leading to inefficiencies and higher costs.            |
| 7.  | Risks associated with technological advancements | The rapid pace of technological advancements in the financial sector can pose risks for institutions that are not able to keep up with the changes |

Based on the analysis of information on the official websites of the Central Bank and commercial banks, the results of the analysis presented in Table 3 reflect the problems in the development of the financial technology market in Uzbekistan.

However, the above analysis shows that despite the mentioned problems and shortcomings, financial technologies increase the efficiency of banking activities. In particular, the development indicators of digital banks are growing at a high rate.

## CONCLUSION

In conclusion, the implementation of financial technologies can greatly enhance the efficiency of commercial banks. However, successful implementation requires careful planning, adequate resources, and consideration of potential risks. For developing financial technology market in Uzbekistan it is necessary.

1. Invest in automation and digitalization. The government and financial institutions should invest in modernizing their processes and systems to improve efficiency and reduce errors. This could involve implementing advanced software solutions and digital platforms to streamline operations.

2. Enhance risk management practices. Financial institutions should focus on improving their risk management capabilities by adopting advanced tools and practices to identify, assess, and mitigate potential risks.
3. Personalize customer services. Fintech companies and banks should invest in customer relationship management (CRM) systems and analytics to better understand their customers' needs and provide personalized services.
4. Promote innovation and competition. The government can encourage innovation and competition in the financial technologies market by creating a conducive regulatory environment, providing support for startups, and fostering collaboration between fintech companies and traditional financial institutions.
5. Provide training and support. The government and industry stakeholders should provide training and support for financial institutions to effectively implement new technologies and solutions. This could involve partnerships with technology providers, educational institutions, and industry experts.
6. Optimize resources. Financial institutions should focus on optimizing their resources by investing in efficient processes, technology, and talent management to reduce costs and improve profitability.
7. Stay updated with technological advancements: Financial institutions should stay updated with the latest technological advancements in the industry and adapt their strategies and operations accordingly to mitigate potential risks associated with rapid changes.

Overall, addressing these challenges will require a collaborative effort between the government, financial institutions, technology providers, and other industry stakeholders to drive the growth and development of the financial technologies market in Uzbekistan.

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