

STATISTICAL ANALYSIS OF THE DYNAMICS OF TRANSACTIONS CONDUCTED THROUGH THE FAST PAYMENT SYSTEM IN COMMERCIAL BANKS

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Annotation: This study examines the dynamics of transactions carried out through the Real-Time Payment System (RTPS) in commercial banks of Uzbekistan using statistical analysis methods. The research aims to identify the growth trends in the number of transactions from 2020 to 2024 and assess the effectiveness of the digital payment infrastructure. Based on official data from the Central Bank, the study reveals the increasing role of real-time payments in enhancing the speed, transparency, and convenience of financial operations. The findings highlight that the expansion of the RTPS has significantly contributed to the development of a cashless economy and the digital transformation of the national banking system.

Keywords: Real-Time Payment System, transaction dynamics, commercial banks, digital payments, non-cash settlements, statistical analysis, financial technology, digital economy, payment infrastructure, Central Bank of Uzbekistan.

Introduction. In recent years, the broad implementation of digital technologies in Uzbekistan's economy has become one of the key priorities of state policy. In particular, the reforms carried out in the financial and banking system are aimed at improving the national payment infrastructure and providing the population and business entities with convenient, secure, and fast payment services. In this regard, the statistical analysis of the dynamics of transactions conducted through the Fast Payment System (FPS) in commercial banks is a highly relevant research topic, both scientifically and practically. This system plays a significant role not only in strengthening payment discipline within the economy but also in ensuring the transparency of financial flows, reducing cash circulation, and promoting the widespread use of electronic payments.

The regulatory foundation for this system was established by the Resolution of the Board of the Central Bank of the Republic of Uzbekistan No. 1/3, dated January 17, 2006, "On the approval of the Regulation on electronic payments through the interbank payment system of the Central Bank." Based on this Regulation, the Fast Payment System (FPS) was introduced to create a modern settlement mechanism within the national banking system, reduce transaction time, and increase the reliability of payments. The system allows for payments to be processed in real time, enabling financial operations to be completed within minutes.

An analysis of data over the past five years shows that the number and volume of transactions conducted through the FPS have demonstrated a stable upward trend. In 2020, the system processed 5.3 million transactions, whereas by 2024, this figure had exceeded 47.5 million. During the same period, the total transaction value increased from 128.3 trillion UZS to 917.9 trillion UZS. This growth primarily reflects the expansion of digital infrastructure within commercial banks and the introduction of new payment channels through mobile applications, internet banking, and QR code systems.

Since its introduction, the Fast Payment System has significantly enhanced the speed, convenience, and reliability of transactions for bank clients. One of the key advantages of the FPS is its 24/7 operational availability, allowing transactions to be processed even during weekends and holidays. The expansion of this system has also intensified competition within the banking sector, enabling interbank settlements to be executed through a centralized, secure, and efficient mechanism.

The economic impact of this process has been substantial: the digitization of payments has reduced the demand for cash, accelerated transaction speeds, and consequently increased the velocity of money circulation, contributing positively to the growth of Gross Domestic Product (GDP). Furthermore, the development of the FPS has enhanced the timeliness and completeness of government revenue collections and improved tax payment discipline.

In summary, conducting a statistical analysis of the dynamics of transactions processed through the Fast Payment System in commercial banks is a timely and important area of economic research. This analysis allows for a deeper understanding of system development trends, growth rates, and the contribution of digital payments to the digital economy and financial stability. Based on these results, evidence-based recommendations can be developed to further improve digital payment infrastructure, enhance service quality, and expand financial inclusion across Uzbekistan's banking sector.

Literature Review. In recent years, the process of digital transformation in Uzbekistan's banking system has accelerated significantly, leading to a growing importance of electronic payments, mobile banking, and fast payment systems. The Fast Payment System (FPS), developed by the Central Bank, represents a modern settlement infrastructure that enables customers to perform payments in real time. This system has not only simplified financial transactions but also played an essential role in strengthening payment discipline, reducing cash circulation, and ensuring the transparency of financial flows. Consequently, in recent years, economists and financial scholars have paid considerable attention to studying the role, efficiency, and development prospects of fast payment systems in the national economy. The following section reviews recent domestic and international research in this field.

Among domestic researchers, A. Q. Rasulov [2], in his study titled "Theoretical and Practical Aspects of Developing Electronic Payment Systems in Uzbekistan's Banking Sector," analyzed the importance of electronic payment systems in enhancing the efficiency of banking operations. According to the author, the growing number of operations conducted through the Fast Payment System reflects the degree of digital transformation in the country's financial system. Rasulov emphasizes the need for greater integration of the national payment infrastructure to improve system efficiency.

S. T. Mamadaliyev [3], in his work "The Role of Digital Payment Systems in Uzbekistan's Financial Market," conducted a statistical analysis of the annual growth rate of transactions processed through the Fast Payment System. He concluded that the expansion of the system has improved financial inclusion and increased the population's access to banking services.

In the study "Factors of Digital Economy Development in Uzbekistan's Banking System," M. J. G'aniyev [4] discussed the role of the Fast Payment System in accelerating interbank settlements, reducing operational risks, and improving customer convenience. The author also highlighted the potential for further automation and the application of blockchain technology within the payment infrastructure.

D. A. Shodmonova [5], in her article “The Role of the Central Bank in Ensuring the Stability of Payment Systems,” examined the development stages of the Fast Payment System, its harmonization with international practices, and its impact on transaction speed and liquidity within the economy. She underlined the importance of strengthening the legal and regulatory framework for the further development of the system.

Among international researchers, D. Carlo [6], in his study “Real-time Payment Systems: Efficiency and Security Issues,” analyzed the benefits and security challenges of real-time payment mechanisms. According to his findings, such systems enhance liquidity in the economy but may pose risks to financial stability if cybersecurity measures are not adequately reinforced.

M. Singh and R. Patel [7], in their joint publication “Digital Transformation in Banking and the Rise of Instant Payments,” noted that fast payment systems significantly reduce transaction time and costs while serving as a major driver for digital economic growth.

K. Yamamoto [8], in his research “Japan’s Fast Payment Infrastructure and Economic Efficiency,” analyzed Japan’s experience with real-time payments and provided empirical evidence that such systems lower transaction costs and positively influence national production.

P. Richards [9], in his paper “The Evolution of Central Bank Payment Infrastructures,” studied the role of central banks in developing modern payment platforms, including fast payment systems, and emphasized their importance in the digitalization of financial ecosystems. He also highlighted the role of central bank monitoring mechanisms in ensuring the uninterrupted operation of payment systems.

The analysis of the literature indicates that both domestic and foreign researchers recognize the Fast Payment System as an integral component of modern financial infrastructure. It significantly contributes to accelerating interbank settlements, improving service quality, and stimulating economic activity. While local scholars have primarily focused on assessing the practical efficiency of the system in Uzbekistan’s economy, foreign researchers have paid greater attention to technological, security, and global integration aspects. Therefore, conducting an in-depth statistical analysis of the development trends of the system in Uzbekistan, identifying factors influencing growth rates, and evaluating their economic implications represent an important scientific objective. This approach forms a solid theoretical and practical foundation for ensuring the stability of digital financial services and improving innovative payment infrastructure in the country.

Research Methodology. In this study, a comprehensive set of economic and statistical methods was employed to analyze the dynamics of the number of transactions conducted through the Fast Payment System (FPS) in commercial banks. During the research process, methods such as comparative analysis, time series evaluation, trend identification, growth rate analysis, and visual graphical interpretation were applied. The data were obtained from the official reports of the Central Bank of the Republic of Uzbekistan, annual statistical bulletins, and open data from commercial banks related to electronic payments.

The analysis covered the period from 2020 to 2024, focusing on identifying the growth rates of transactions and evaluating the main development trends of the system. Based on the findings, scientific conclusions were drawn to justify the economic efficiency of the Fast Payment System and to assess the role of digitalization of banking services within the national economy.

Analysis and Results. In recent years, the banking sector of the Republic of Uzbekistan has been experiencing rapid digital transformation, with the extensive implementation of modern

financial technologies. The Fast Payment System (FPS) plays a crucial role in expanding cashless transactions, improving service quality, and increasing the speed and efficiency of banking operations.

The continuous growth in the number of transactions processed through the FPS demonstrates the increasing utilization of electronic banking services by both individuals and businesses. This indicates a positive trend in the digitalization of financial services and highlights the growing confidence of users in electronic payment mechanisms.

This section provides a statistical analysis of the dynamics of transactions conducted through the Fast Payment System in commercial banks during the period 2020–2024. The analysis identifies growth trends, evaluates the performance efficiency of the system, and assesses its impact on the modernization of Uzbekistan’s banking infrastructure. The results serve as a foundation for further research on the economic benefits of fast payment mechanisms and their contribution to the development of the digital financial ecosystem in the country.

Table 1.

Dynamics of the Number of Transactions Processed Through the Fast Payment System in Commercial Banks (2020–2024)

Year	Number of Transactions (units)	Growth Rate (%)
2020	5,371,461	100.0
2021	12,291,560	228.8
2022	17,615,064	143.3
2023	31,431,869	178.4
2024	47,570,847	151.3

According to the data presented in Table 1, the number of transactions executed through the Fast Payment System (FPS) in Uzbekistan’s commercial banks demonstrated a steady upward trend during the period 2020–2024. In 2020, the system processed 5.37 million transactions, while by 2024, this figure had reached 47.57 million, indicating nearly a ninefold increase over five years. In 2021, the number of transactions grew by 228.8%, reflecting the rapid adoption of the FPS and the significant expansion of its user base. Although the growth rate slightly slowed in 2022 to 143.3%, the data still indicate a stable development trajectory. By 2023, transaction growth accelerated once again, reaching 178.4%, largely due to the sharp rise in mobile application–based payments. In 2024, the system maintained a robust expansion rate of 151.3%, confirming its widespread adoption and firm establishment within Uzbekistan’s digital economy.

The continuous increase in the number of transactions also demonstrates the effective efforts of commercial banks in expanding digital infrastructure, improving mobile banking services, and enhancing customer convenience. Moreover, this upward trend indicates a growing level of public trust in electronic payment systems, which has played a crucial role in strengthening the overall efficiency and transparency of the national financial ecosystem.

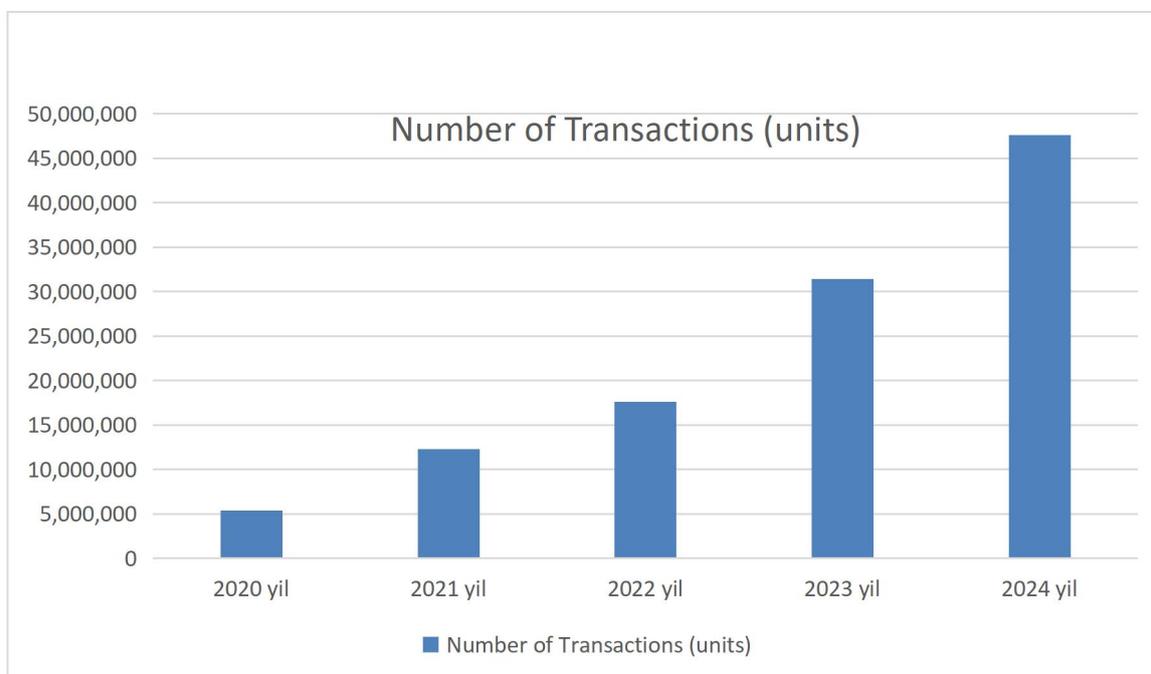


Figure 1. Annual Growth Trend in the Number of Transactions Processed Through the Fast Payment System of the Central Bank (2020–2024)

As illustrated in Figure 1, the number of transactions processed through the Fast Payment System (FPS) has shown a consistent upward trend from 2020 to 2024. In the initial year, 2020, when the system was newly introduced, the transaction volume was relatively modest at 5.37 million operations. By 2021, the number of transactions had increased 2.3 times, reaching 12.29 million, indicating the system’s rapid adoption among users. The growth continued steadily in 2022, while during 2023–2024, the expansion rate accelerated significantly, culminating in a record 47.57 million transactions in 2024.

This growth can be explained by several key factors:

- Firstly, the expansion of mobile and internet banking services among commercial banks;
- Secondly, the increasing popularity of QR code-based payment systems, which simplified digital transactions;
- Thirdly, the growing digital payment culture among households and business entities;
- Fourthly, the reliability and operational stability of the unified fast payment infrastructure established by the Central Bank, which enhanced users’ confidence in the system.

Furthermore, this process aligns closely with Uzbekistan’s national digital economy strategy, contributing to a substantial increase in the share of cashless payments within the country’s financial system.

Results. The analysis reveals that the increase in the number of transactions processed through the Fast Payment System (FPS) plays a crucial role in the digital transformation of Uzbekistan’s financial sector. Between 2020 and 2024, the annual growth rates of transactions remained consistently high, demonstrating the stability and sustainability of the system’s development

prospects. The continuous rise in transaction volume has produced several positive economic outcomes, including:

- A significant reduction in cash circulation;
- An improvement in the convenience and speed of payments for customers;
- A strengthening of competition among commercial banks;
- Greater transparency of financial flows;
- And more timely budget revenue collection for the state.

This upward trend reflects the Central Bank's commitment to enhancing the electronic payment infrastructure, the active technological modernization pursued by commercial banks, and the growing digital financial literacy of the population.

Conclusion. Overall, the Fast Payment System (FPS) has established itself as a modern, secure, and efficient payment mechanism within Uzbekistan's banking system. The findings indicate that between 2020 and 2024, the total number of transactions increased more than eightfold, reinforcing the system's integral role in the real economy.

The system not only accelerates interbank settlements but also serves as a foundation for the transition to a digital economy, facilitating innovation and transparency in the financial sector. The continued expansion of the FPS contributes significantly to deepening financial inclusion, broadening public access to banking services, and ensuring the stability of the national payment infrastructure.

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