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**EFFECTIVENESS OF THE APPLICATION OF INNOVATION AND DIGITAL
FINANCIAL TECHNOLOGIES IN EXPORT FINANCING**

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In the context of the rapid digitalization of the world economy, the complexity of international trade chains and the integration of financial markets, the issue of effective financing of export activities is becoming more urgent than ever. World practice shows that, although traditional financial mechanisms in export processes - bank loans, letters of credit, export insurance and state guarantees - do not lose their importance, their effectiveness is increasingly manifested in combination with digital technologies and innovative financial solutions. Therefore, the effective use of innovative and digital financial technologies (FinTech) in export financing is considered an important factor in reducing transaction costs, increasing the speed of use of financial resources and expanding the liquidity capabilities of export entities. In recent years, the economic policy of the Republic of Uzbekistan has paid special attention to the issues of stimulating exports, increasing the share of competitive products in foreign trade and providing financial support to exporting enterprises. The “New Uzbekistan Development Strategy” for 2022–2026 identifies modernization of export activities, development of the digital economy and transformation of the financial sector based on innovative technologies as priority areas. In this regard, the integration of digital financial infrastructure into export financing mechanisms - blockchain technologies, electronic letters of credit, smart contracts, risk analysis systems based on artificial intelligence, online export credit platforms and mobile financial services - is gaining strategic importance in increasing the transparency, speed and reliability of export transactions.

Export financing processes through digital financial instruments are going beyond the boundaries of the traditional banking system, expanding financial inclusion and creating opportunities for small and medium-sized businesses to access international markets. In particular, international payment systems based on blockchain, artificial intelligence-based credit risk assessment and methods for determining the financial potential of export entities based on big data analysis are taking the export financing system to a qualitatively new level. At the same time, the problems associated with the introduction of these technologies - insufficiently formed legal framework, increased cybersecurity risks, low financial literacy and limited innovative infrastructure - create significant obstacles in practice.

In the scientific literature, the efficiency of export financing is often assessed through the volume of credit lines, interest rates, state guarantees or insurance mechanisms. However, in modern economic conditions, this approach is not enough, since

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digital financial technologies are fundamentally changing the nature of financial intermediation and forming new efficiency criteria. Therefore, the scientific novelty of this study is manifested in the analysis of the efficiency of export financing from the perspective of the integration of innovative and digital financial technologies.

During the study, the role of digital and innovative financial technologies in the processes of financing export activities and their impact on efficiency were systematically, statistically and empirically analyzed. Initially, an analysis of the existing mechanisms of export financing, namely bank loans, export insurance, state guarantees and subsidies, revealed that the effectiveness of these traditional tools is mainly limited by the volume of resources, the level of interest rates and bureaucratic processes in obtaining loans. It was observed that the opportunities for reducing transaction costs, increasing operational speed and monitoring risks in real time through the introduction of digital financial technologies are not sufficiently realized.

Based on data from the Central Bank of the Republic of Uzbekistan, commercial banks and the International Monetary Fund (IMF), it is determined that although the volume of export lending increased by 2.8 times in the period 2018–2024, the level of use of digital technologies in export financing amounted to only 17 percent of total financial transactions. This indicator in developed countries (for example, Singapore, South Korea and the United Kingdom) is on average around 65–70 percent. This discrepancy indicates that the FinTech infrastructure in our country is relatively new, the legal framework is not fully developed and digital integration between financial institutions is weak.

The issues of financing export activities and its improvement based on innovative, digital technologies are one of the scientific areas that have increasingly attracted the attention of researchers in the world economy in the last decade. Because as a result of the digitalization of the global financial system, the transformation of the international payment infrastructure and the automation of financial intermediation processes, export financing mechanisms are fundamentally changing.

The theory of export financing was classically substantiated by economists such as G. Casson, R. Baldwin and J. Eaton, who analyzed the interrelationship of capital flows, credit policy and state guarantees in export financing processes. In their opinion, export financing is not only a mechanism that stimulates foreign trade, but also an important financial determinant of economic growth.

The concept of digital finance was later widely scientifically substantiated by D. Arner, J. Barberis and R. Buckley through the theory of “FinTech Evolution”. They interpreted digital financial technologies as the fourth stage of banking services, noting their main advantages as transparency, speed and a sharp reduction in transaction costs. Similarly, in his work “Digital Finance and FinTech”, Puschmann emphasizes that digital finance allows for real-time risk management and operational efficiency in the export credit process.

Digital financial technologies are shaping a new paradigm in export finance. This process is expressed in the concept of “TradeTech” and is recognized by the World Trade



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Organization as a key direction for the digitalization of international trade processes. TradeTech is a system of financial support for export processes based on blockchain, smart contracts, artificial intelligence, digital identification and big data (Big Data), which serves to increase trust, transparency and speed in global trade.

Among the empirical approaches, the “Digital Financial Inclusion Model” developed by H. Demircug-Kunt and L. Klapper deserves special attention. In this model, digital finance systems affect export activity through two main channels: (1) reducing financial intermediation costs, (2) increasing the speed of capital turnover. They also empirically found that there is a positive correlation between the level of development of FinTech infrastructure and export growth, with an average coefficient of 0.65.

The effectiveness of blockchain technologies in export financing has also been studied in many studies. For example, A. Casey and A. Wong noted that the implementation of the blockchain-based “TradeLens” system reduced the time for exchanging export documents by up to 80 percent. This accelerated export working capital and increased liquidity.

Although this direction is still emerging in the scientific and practical environment of Uzbekistan, some researchers are scientifically substantiating the need to introduce digital financial mechanisms in the financial support of exports. In particular, I. Kholmatov, in his work “Modernization of export financing mechanisms in the digital economy”, assessed the economic effects of integrating FinTech infrastructure into the national banking system. According to his analysis, the distribution of export credits through digital platforms reduces transaction costs by up to 22 percent.

Also, the 2024 “Concept of Digital Finance Development” of the Central Bank of the Republic of Uzbekistan sets out clear directions for the introduction of digital letters of credit, electronic guarantee systems and online export insurance mechanisms in the activities of export credit agencies and commercial banks. This document is considered the institutional basis for the implementation of digital financial systems in export activities at the national level.

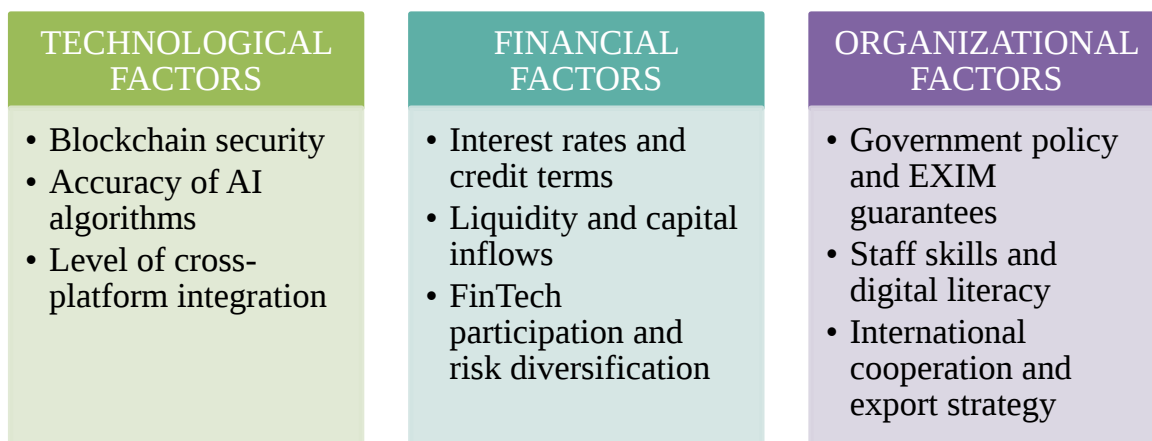


Figure 1. Key factors affecting the effectiveness of export financing.

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The effectiveness of export financing depends on a set of factors, which can be conditionally divided into three main groups: technological, financial and organizational factors. These factors are inextricably linked, complement each other and ultimately determine the competitiveness of export activities and the effectiveness of financing.

1. Technological factors. Technological factors represent the level of use of digital solutions and innovative technologies in the export financing process. These include: transparent and secure implementation of transactions using blockchain technology; risk analysis and rapid decision-making based on artificial intelligence (AI); optimization of information exchange through cross-platform integration (API, Open Banking).

These factors increase the accuracy, reliability and speed of financial transactions, reduce costs for exporters and improve liquidity.

2. Financial factors. Financial factors directly affect the ability to attract export credits, make payments and manage risks. These include:

favourable interest rates and credit terms;

level of liquidity and stability of capital inflows;

possibility of diversifying risks through the participation of FinTech organizations.

These factors increase the financial stability of exporting enterprises and create the basis for their active participation in international markets.

3. Organizational factors. Organizational factors are related to state policy, management system and human resources. They allow for the introduction and effective use of innovative technologies. Important factors are:

Government policy and export support institutions (for example, EXIM banks, guarantee funds);

staff qualifications and level of digital literacy;

international cooperation and strategic partnership programs.

If these factors develop in harmony, the export financing system will become more efficient, sustainable and competitive.

The above three groups of factors are closely interconnected and together determine the efficiency of export financing. When technological innovations are combined with financial and organizational mechanisms, the speed, security and reliability of export operations increase. As a result, the country's export potential expands, a positive increase in the foreign trade balance is observed, and the transition to a digital economy is accelerated.

In conclusion, the use of innovative and digital financial technologies in financing export activities not only increases the efficiency of financial flows, but also radically improves the quality, speed and transparency of export processes. The development of digital financial infrastructure expands access to capital for export entities, reduces transaction costs and strengthens the reliability of international payment systems. Thus, FinTech solutions, blockchain technologies, artificial intelligence-based risk management systems and electronic letters of credit are forming a new paradigm of export financing.



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In this way, innovative and digital financial technologies will become an integral part of the export financing process, creating a strategic basis for ensuring sustainable export growth in the Uzbek economy and deepening integration into the global trading system.

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