

FINANCIAL MECHANISM OF ELECTRONIC TRADING ON THE STOCK MARKET AND WAYS OF THEIR IMPROVEMENT

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Abstract. The *purpose* explores the importance of financial mechanisms in the development of e-commerce in the context of technoglobalism. The main goal of the work is to analyze the impact of digital payment systems, blockchain, smart contracts, and artificial intelligence on the transformation of business processes in the field of e-commerce. The article examines current trends in the development of financial mechanisms and their impact on the formation of the global digital economy. It is noted that the development of such mechanisms contributes to increasing financial inclusion, expanding the population's access to financial services. Digital financial platforms open up opportunities for the small and medium-sized business community opportunities to participate in the global e-commerce market, bypassing the need to use traditional banking services. *Methodology.* The foundation of the study is based on the theoretical achievements of world economic science regarding the influence of financial mechanisms of technological innovations on the development of electronic commerce. *Results.* To solve the tasks set, various methods were used, in particular the historical-logical method, which allows analyzing the evolution of events and phenomena over time, system-functional approach – which helps to consider economic processes and relationships as a holistic system, as well as factor and structural analysis, which contribute to a detailed study of individual components of economic phenomena and their interaction, which is extremely important for understanding the dynamics of e-commerce in the context of technological change. *Value.* This stimulates the growth of the global digital economy and creates new prospects for businesses. Particular emphasis is placed on ensuring financial security, reducing transaction costs and strengthening trust between market participants.

Key words: financial mechanism, electronic trading, transactions, stock market, securities market, deposits, FinTech, blockchain, loans, artificial intelligence, cryptocurrencies, banking services.

JEL Classification: G10, G21, G23, G32

1. Introduction

Financial mechanisms are one of the key components of the development of electronic commerce, contributing to its adaptation and transformation in the conditions of technoglobalism. The current stage of globalization is characterized by the active introduction of digital technologies into all aspects of economic activity, which leads to a rethinking of traditional business models and transformation of the ways of interaction between market participants. This is especially evident in the field of e-commerce, which has undergone significant changes over the last decade due to the introduction of financial technologies that provide efficiency, convenience,

and an increased level of security for financial transactions.

At the same time, the role of e-commerce as a tool for equalizing economic opportunities on a global scale remains partially limited by the phenomenon known as the digital divide. In the context of modern globalization, financial technologies play a decisive role in transforming economic relations between entities, contributing to increasing their accessibility, efficiency and level of innovation. The expansion of the international e-commerce market, the rapid development of technology, as well as the growing demands for ensuring financial inclusion stimulate the need for strengthening global cooperation in this area.

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Joint actions of banking institutions, fintech companies and government authorities open up opportunities to overcome the difficulties in the field of cross-border payments and at the same time, they contribute to the creation of innovative solutions to stimulate further economic growth.

Financial mechanisms and technologies encompass a wide range of digital tools, such as mobile payment systems, blockchain, cryptocurrencies, artificial intelligence, machine learning, Big Data, cloud computing, and smart contracts. The introduction of these innovations into e-commerce contributes to a significant increase in the efficiency of operations, a reduction in transaction costs, enhancing payment security and providing a personalized customer experience.

With the expansion of digital commerce platforms and governments prioritizing digital infrastructure development, there are great opportunities for developing countries to close the gap with more developed markets and contribute to the overall inclusiveness of international e-commerce.

2. Financial Mechanisms and Creation of New Models

Financial mechanisms are actively contributing to the formation of new business models in the field of e-commerce, ensuring payment automation, reducing transaction costs and increasing the level of financial security. Current research emphasizes the key role of technologies such as blockchain, smart contracts and artificial intelligence in creating a reliable and efficient financial environment. Experts emphasize that blockchain significantly improves the transparency of contracts, while artificial intelligence introduces automation of risk management and personalization of financial services (World Bank, 2022) the work of Mazzone et al. (Demirgüç-Kunt, Klapper, Singer, Ansar, 2018) analyzes the impact of digital payment systems, including mobile wallets and cryptocurrency platforms, on expanding market access opportunities for small and medium-sized enterprises. In this context, it reviews publications prepared by international organizations and consulting companies (Tok, Heng, 2022); Kou, Akdeniz, Dinçer, Yüksel, 2021) note that the implementation of blockchain, smart contracts and artificial intelligence allows businesses to form new models of e-commerce. In particular, blockchain provides transparency and security of transactions, which helps reduce fraud and increase trust among market participants. Smart contracts automate the execution of transactions, reducing the time and costs associated with operational processes. In turn, artificial intelligence is used to personalize offers, forecast demand, and improve customer service, making e-commerce more efficient and convenient.

Actively promotes financial inclusion by providing greater access to financial services. In developing countries, digital innovations in finance are driving the active participation of both businesses and consumers in global e-commerce. Numerous studies highlight that fintech solutions provide greater flexibility and speed in payments, which in turn, supports the scaling of e-commerce. For example, according to World Bank research (WB) (OECD, (2022) in developing countries, it enables small and medium-sized businesses to integrate into global trade processes. Digital payment systems, mobile wallets and cryptocurrency platforms facilitate wider access to financial services and lower barriers to entry. In addition, the study by Demirgüç-Kunt et al. emphasizes that financial innovation provide accessibility of electronic payments to those segments of the population who do not have access to traditional banking services. Research conducted by the International Monetary Fund (IMF) (World Economic Forum, 2024), emphasizes that digital financial platforms facilitate access of users from remote regions to services such as mobile payments, online lending and crowdfunding.

Despite the above-mentioned advantages of FinTech, one of the key challenges in its implementation remains ensuring cybersecurity and personal data protection, as well as the risks associated with the use of cryptocurrencies in illegal financial transactions, fraud, and the need for international harmonization of legal norms. Many scientific papers and reports by international organizations consider ways improving mechanisms for protecting confidential information and establishing global cybersecurity standards (Arner, Barberis, Buckley, 2020; ZellePay, 2024; Pupkevicius, 2025; Krause, 2024). The main idea behind such studies is that FinTech innovations, in particular blockchain technology, help reduce fraud risks by creating immutable transaction records and increasing transparency in payment processing.

Different countries use individual approaches to regulating FinTech, which complicates the development of international e-commerce due to the emergence of regulatory barriers. Close cooperation between state regulators, international organizations and financial companies is an important factor for harmonizing regulatory standards and creating a stable financial environment (Wallstreetzen, 2024). In addition, new digital platforms that offer significant potential for e-commerce, as well as security and regulatory challenges, require special attention. These aspects require in-depth analysis and integration into modern scientific research.

The aim of this study is to systematically analyze the impact of financial mechanisms on the development of electronic commerce in the context of technoglobalization. In particular, the emphasis is placed on determining their role in transforming

business models, promoting financial inclusion, ensuring the security of financial transactions, as well as identifying key challenges and prospects for further development of FinTech in the context of the digital economy.

3. Electronic Trade

E-commerce includes all transactions involving the ordering of goods or services over computer networks. Such transactions can involve various economic entities, including businesses, households, government agencies, or non-profit organizations, acting as buyers or sellers.

E-commerce is a key area of digital adoption, playing a significant role in both domestic and international trade. Since the beginning of the 21st century, the number of people shopping online has grown from less than 100 million to approximately 2.3 billion in 2021. In recent years, sales on the world's 35 largest e-commerce platforms have grown from \$2.6 trillion in 2019 to over \$4 trillion in 2021 (ProductMint. (n.d.)). The level of participation in e-commerce varies significantly between countries. In the most digitally integrated countries, over 80% of citizens actively shop online. In the vast majority of least developed countries, however, this figure remains below 10% (Suryono, Budi, Purwandari, 2020).

According to UNCTAD estimates, e-commerce sales are expected to reach nearly \$27 trillion in 2022, up from about \$17 trillion in 2016. In China, e-commerce sales have nearly tripled, from \$1.6 trillion in 2016 to \$4.5 trillion in 2022. At the same time, in the US, e-commerce volume grew from \$7 trillion in 2016 to approximately \$11 trillion in 2022 (Vladyka, Turova, Skyba, 2025).

The relationship between e-commerce and financial innovation is one of the main drivers of the development of the modern digital economy. Financial technologies create the basis for the effective functioning of e-commerce, ensuring the convenience of payments, optimizing the management of financial flows and increasing the security of transactions (Feyen, Harish, Matthe, 2023). Within the framework of e-commerce FinTech plays an important role in changing business models, simplifying financial processes, and strengthening trust between market participants.

According to analytical data from the consulting company KPMG, in 2024 the global financial technology market attracted investments of 95.6 billion US dollars, with the total number of deals being 4,639. It is worth noting that this figure is the lowest since 2017. Such dynamics are due to a number of factors, including the impact of macroeconomic challenges, geopolitical conflicts and tensions in international relations, as well as political activity in the form of election campaigns in

many countries. The largest volume of investments was recorded in the Americas region, where 63.8 billion USD was attracted within 2,267 deals, in particular in the United States – 50.7 billion USD for 1,836 deals. In comparison, the EMEA region (Europe, Middle East and Africa) raised \$20.3 billion across 1,465 deals. Meanwhile, the Asia-Pacific region recorded \$11.4 billion across 896 deals (Statista. n.d.).

Data centers play a critical role in e-commerce infrastructure, serving as the primary hubs for storing, processing, and distributing the vast amounts of information needed to conduct real-time transactions. As cross-border transactions increase, the need for highly reliable infrastructure increases data centers, which is able to meet the growing requirements for the volume of information storage and ensure the speed of its processing.

Big Data analytics has become a key tool for managing logistics processes in cross-border e-commerce, helping to more effectively forecast demand, optimize delivery routes, and reduce the time it takes to transport goods. Big data integration enables intelligent management logistics by providing deep analysis of consumer preferences, transportation patterns, and inventory needs. The application of these technologies allows companies to improve global supply chains, which increases their efficiency and flexibility in carrying out cross-border operations (Kou, Akdeniz, Dinçer, Yüksel, 2021).

Digital platforms form a critical layer of modern infrastructure that connects businesses to consumers and enables efficient cross-border e-commerce transactions. Platforms like Amazon, Alibaba, and Shopify act as integrators, creating digital environments for seamless interactions between suppliers, distributors, and end users. They simplify logistics, payment processing, and customer communication, which not only lowers the barriers to market entry for companies of any size, but also contributes to a more inclusive environment within global e-commerce.

The development of financial technologies has led to the emergence of numerous digital payment instruments that are fundamentally changing the financial infrastructure of international e-commerce. Mobile payment services have significantly improved access to e-commerce by offering fast and cost-effective transactions directly via mobile devices. These tools contribute to increasing financial inclusion and open up new opportunities for the development of e-commerce. Of particular note are digital wallets, P2P lending, and blockchain-based payment solutions that reduce dependence on traditional banking systems.

Digital wallets such as PayPal, Alipay and Apple Pay offer a secure and convenient way to pay, allowing consumers to easily make international transactions. Their emergence has revolutionized e-commerce,

providing a secure and convenient alternative to traditional methods. These wallets allow users to securely store payment information and make transactions with one click, which is especially useful for mobile devices. By supporting multiple currencies, digital wallets make international payments easier and reduce exchange rate costs. They are typically more secure than traditional methods because they use encryption and tokenization to protect user data and prevent fraud. Analysts estimate that by the end of 2022, 4.4 billion consumers made purchases using digital wallets, which accounted for 52% of e-commerce payments worldwide (KPMG, 2024).

Cryptocurrencies and blockchain technology have emerged as powerful tools for change in the infrastructure of international e-commerce. Researchers such as Suriono and others (He, 2021), focus on the importance of cryptocurrencies and blockchain in cross-border e-commerce, highlighting their ability to eliminate intermediaries, reduce costs, and facilitate greater transaction transparency.

Various cryptocurrencies have already found applications in the private sector and specific industries, such as online gaming. At the same time, digital currencies may soon become an important part of the financial industry. According to a survey conducted by the Bank for International Settlements, 60% of central banks reported having at least a conceptual prototype of a digital currency, and 14% are already in the pilot testing stage (UNCTAD, 2024).

Cryptocurrencies such as Bitcoin and Ethereum represent an alternative payment method that provides fast and decentralized payment processing without the need for intermediaries. This helps reduce transaction costs and increase transparency in financial transactions. In addition, cryptocurrencies act as a significant alternative to traditional currency exchanges. However, their high volatility and lack of a clear regulatory framework limit their widespread use in e-commerce (World Trade Organization, 2025).

In addition to implementing payment functions, blockchain technology opens up prospects for effective application through smart contracts that automate financial transactions and ensure the fulfillment of predefined conditions. Blockchain also includes distributed ledgers that guarantee transparency and reliability in maintaining transaction records. By creating an immutable record of every transaction, this technology enables fast and secure transactions, reduces the delays and chargebacks associated with traditional payment systems, and minimizes the risk of fraud. It also simplifies the documentation process, which is often a significant obstacle in the field of international trade regulation. It is worth emphasizing that developing countries, where banking infrastructure may be underdeveloped.

Global investment in digital assets and currencies grew from \$8.7 billion in 2023 to \$9.1 billion in 2024. Four of the five largest cryptocurrency deals in 2024 were made in the second half of the year. Among them, Stripe's \$1.1 billion acquisition of the Bridge project stands out, as well as the attraction of venture funding by companies such as: such as Praxis (\$525 million), Blockstream (\$210 million) and Current (\$200 million). In addition, 2024 was marked by growing interest in stablecoins. US-based Ripple introduced its own digital currency RLUSD (Statista. (n.d.); 5G share of total mobile connections from 2023 to 2030, by region).

One of the most promising developments in the financial infrastructure of international e-commerce is the introduction of central bank digital currencies (CBDCs). According to researcher D. He, (He, 2021), Central bank digital currencies simplify cross-border payments by providing a state-owned digital alternative to existing currency systems. The use of CBDCs potentially reduces currency exchange costs, increases transaction speeds, and promotes financial inclusion by making digital currencies available for global use. Some countries, such as China, have already implemented pilot projects of their digital currencies, receiving positive feedback on reducing transaction costs and expanding digital access in the international market. In the second half of 2024, the mBridge initiative was also announced, supported by a number of international organizations and central banks, mainly from the Asia-Pacific region and the Middle East, which aims to create a single platform for cross-border transactions involving multiple central bank digital currencies (Statista (n.d.); Worldwide Internet of Things (IoT) connections from 2022 to 2030, by region).

E-commerce companies are increasingly integrating Internet of Things (IoT) and 5G technologies into their operations to improve real-time monitoring, inventory tracking, and supply chain management efficiency. IoT devices allow companies to monitor goods throughout the delivery process, increasing visibility, improves supply chain management and reduces risks such as delays or damage. IoT technologies allow cross-border e-commerce companies to act as supply chain integrators, connecting different stages of the supply chain to create seamless customer service. The application of IoT in logistics, combined with big data and blockchain, contributes to a more interconnected and efficient e-commerce infrastructure (McKinsey & Company, 2023).

It should be emphasized that telecommunications innovations such as 5G technology have had a powerful impetus for the intensification of e-commerce, providing higher Internet speeds, lower latency, and the ability to work with a larger number of connected devices. 5G technology also increases the efficiency of

supply chain management through improved tracking and automation. For example, real-time inventory management becomes more feasible, reducing delays in delivering products to customers. It should be noted that countries with a high level of IoT and 5G integration receive significant advantages in the development of e-commerce, ensuring the efficiency of business processes and the creation of new business models (ThankGod, 2024).

The introduction of artificial intelligence (AI) into digital commerce is transforming the way businesses operate, automating processes, increasing productivity, and removing key barriers. Artificial intelligence technologies, including machine learning and natural language processing, are helping to automate complex digital commerce operations. They enable real-time analysis of large data sets, forecast market dynamics, and improve management decision-making. As cyber threats become increasingly sophisticated, intelligent threat analysis and anomaly detection systems help protect confidential information and ensure the security of digital transactions. These measures not only reduce financial risks for companies, but also increase the level of trust in digital commerce (UNCTAD, 2024).

Despite its many benefits, the use of AI in digital trade comes with a number of challenges, including issues of ethics, data privacy, and the need to develop a clear legal framework to regulate the use of intelligent technologies. It is crucial to ensure transparency, fairness, and accountability of AI systems to uphold high standards of international trade.

Despite significant progress in the development of technical innovations in e-commerce, it should be noted that this type of international trade still faces numerous challenges. One of the main issues is the process of regulating transactions. As international trade becomes increasingly digital, governments around the world are introducing stricter data protection requirements, such as the General Data Protection Regulation (GDPR) in the European Union,

which affects the storage, processing and transfer of data across borders. Effective risk management in international e-commerce will require cooperation between regulators to harmonize standards and ensure consistent compliance practices. Regulatory differences between countries can slow down e-commerce transactions commerce and create a compliance burden for businesses.

4. Conclusions

Based on the analysis, it is safe to say that financial mechanisms and technologies open up new horizons and potential opportunities for the development of electronic commerce at the global level. These technologies not only increase the transparency and security of financial transactions, but also automate the process of executing transactions, which significantly reduces the risks of fraud – this is a key factor for international e-commerce.

In addition, thanks to financial mechanisms and technologies, enterprises are able to form personalized recommendations for their customers, predict demand for goods, and optimize inventory management, which in turn helps to increase the efficiency of business processes. These mechanisms and technologies also play an important role in improving systems to combat financial fraud, which significantly increases the level of security in the field of e-commerce, making it more reliable for consumers and businesses.

The future development of e-commerce involves the introduction of new mechanisms and technological solutions, as well as the integration of advanced innovations that will effectively prevent fraud, money laundering and terrorist financing. This emphasizes the need to create a reliable regulatory framework, as well as active international cooperation to ensure the safe use of financial innovations, which will continue to play a key role in advancing the digital economy in the context of technoglobalization.

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Received on: 18th of April, 2025

Accepted on: 29th of May, 2025

Published on: 30th of June, 2025