

## APPLICATION OF ARTIFICIAL INTELLIGENCE IN THE DEVELOPMENT OF THE FINANCIAL MARKET

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**Abstract.** This article analyzes the application of artificial intelligence (AI) technologies in the financial market, their impact on its development process, and future prospects. The effectiveness of AI technologies in risk assessment, automation of trading algorithms, prediction of customer needs, and fraud prevention has been examined on a scientific basis. The study presents key indicators of the international financial market as well as data related to the use of AI technologies in finance in tabular form. The findings substantiate that artificial intelligence serves as an important tool for enhancing efficiency, strengthening transparency, and accelerating innovative development in the financial market.

**Keywords:** artificial intelligence, financial market, algorithmic trading, risk management, fintech.

**Introduction.** The global financial market is currently undergoing a profound transformation. Digital technologies, in particular artificial intelligence (AI), have begun to occupy a central position in the operations of financial institutions. Whereas traditional financial practices relied heavily on human labor, today large volumes of data are analyzed within a short period of time through various algorithms. This enables faster and more efficient decision-making in the financial market. Fintech companies, banks, and investment funds are achieving advanced results by employing AI tools to provide convenient services to clients, mitigate risks, and develop new financial products. At the same time, changes taking place in the international financial market - such as cryptocurrencies, blockchain-based services, and automated trading systems - demonstrate the growing role of AI in shaping the sector's future.

**Literature Review.** The application of AI technologies in the financial market has been widely discussed in the academic literature. For instance, Brynjolfsson and McAfee emphasize that the digital revolution enhances efficiency across all sectors of the economy, particularly by enabling data-driven decision-making in the financial market. Financial analyst A. Narayanan demonstrates that artificial intelligence significantly outperforms traditional methods in assessing credit risks within the banking sector. According to him, algorithms reduce human error in evaluating credit histories and contribute to the stabilization of credit portfolios. Among Uzbek scholars, S. Yo'ldoshev notes in his research that the digitalization of the financial market and the development of fintech companies play a crucial role in ensuring sustainable economic growth in the country. This body of literature indicates that AI is becoming a vital factor in ensuring efficiency, speed, and security in the financial market, thereby integrating into the global economy as an indispensable component.

**Research Methodology.** This study is based on the following methodological approaches: Comparative analysis – comparison of indicators in the international financial market and the level of AI adoption; Statistical analysis – examination of global financial market data and investment flows; Trend analysis – study of the prospects of financial products created

on the basis of AI; Empirical approach – practical analysis using real-world cases (cryptocurrency exchanges, algorithmic trading systems, and AI-based anti-fraud programs).

**Analysis and Results.** The international financial market is currently undergoing rapid changes driven by technological innovation. In particular, the adoption of artificial intelligence (AI) technologies has become a decisive factor in enhancing market efficiency. In the stock markets of the United States, Europe, and China, the share of algorithmic trading accounts for 60–70 percent, allowing financial operations to be executed with greater speed and precision. AI also surpasses traditional methods in credit risk assessment, demonstrating higher accuracy in determining clients' creditworthiness. Moreover, algorithmic systems play a crucial role in combating fraud by quickly detecting suspicious activities in transactions and thereby ensuring financial security. In customer service, chatbots and virtual assistants are increasingly deployed to provide 24/7 support. At the same time, in cryptocurrency exchanges and blockchain-based platforms, AI is utilized to enhance security and to generate market forecasts. Overall, the application of AI in the international financial market holds strategic importance for strengthening financial stability, attracting investment flows, and accelerating innovative development.

**Table 1.**

**Key indicators of the international financial market (based on 2023 data).**

No	Country/Region	Stock Market Size (billion USD)	Fintech Investments (billion USD)	Share of Algorithmic Trading (%)
1	United States	45,000	120	65
2	European Union	20,500	60	50
3	China	18,300	80	60
4	Japan	6,200	25	40
5	India	5,700	35	45
6	Southeast Asia	3,100	20	35
7	Latin America	2,900	15	30
8	Africa	1,200	10	20

As can be seen from the table, the United States maintains its leading position in the international financial market: the size of its stock market amounts to 45 trillion USD, while fintech investments have reached 120 billion USD. The European Union and China are the main competitors in terms of financial resources and the share of algorithmic trading. China's high level of fintech investment indicates the potential for further market expansion. Japan and India are gradually increasing their share of algorithmic trading. Although the market size in Southeast Asia, Latin America, and Africa remains relatively small, the growing investments in AI and fintech suggest significant prospects for future growth.

Artificial intelligence has become a key instrument in enhancing efficiency and security in the financial market. Through algorithmic trading, market dynamics can be analyzed in real time, thereby increasing the accuracy of investment decisions. In credit risk assessment, AI enables a deeper examination of clients' financial conditions, reducing errors for banks. Anti-fraud systems rapidly detect suspicious transactions, ensuring greater financial security. In

addition, chatbots and virtual assistants provide clients with 24/7 services, thereby improving the overall quality of financial services.

**Table 2.**

**Artificial Intelligence and the Financial Market**

No	Area of Application	Main Functions	Fintech Companies
1	<b>Algorithmic Trading</b>	Rapid decision-making, price trend forecasting	Wall Street algorithms
2	<b>Credit Risk Assessment</b>	Accurate evaluation of client creditworthiness	LendingClub, ZestFinance
3	<b>Anti-Fraud Systems</b>	Detection of suspicious transactions	PayPal, Visa AI systems
4	<b>Customer Service</b>	Chatbots, virtual assistants	Bank of America (Erica)
5	<b>Financial Advisory</b>	Investment portfolio management	Betterment, Wealthfront
6	<b>Blockchain and Cryptocurrency</b>	Trade security, ensuring transparency	Coinbase, Binance

As the table demonstrates, artificial intelligence is being applied extensively in the financial market. Through algorithmic trading, market signals are rapidly analyzed, enabling investors to make more effective decisions. In credit risk assessment, AI provides high accuracy in determining clients' repayment capacity. Anti-fraud systems quickly detect suspicious activities in transactions, thereby ensuring financial security. Furthermore, chatbots facilitate customer service, while in investment advisory and cryptocurrency trading, AI creates innovative opportunities.

**Conclusion.** The above analysis shows that artificial intelligence is becoming a key strategic factor in the sustainable development of the financial market. It supports rapid and effective investment decision-making through algorithmic trading, enhances the stability of the banking system by accurately assessing credit risks, and strengthens financial security by combating fraud. In addition, chatbots and virtual assistants create greater convenience in customer service, while in the blockchain and cryptocurrency markets, AI contributes to increased transparency and security. Overall, the application of artificial intelligence in the financial market not only improves the quality of services but also strengthens international competitiveness and generates new innovative opportunities. Therefore, further development of AI technologies, their wider integration into the national financial market, and the improvement of security mechanisms remain urgent tasks.

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