FINANCIAL TECHNOLOGY IS A DRIVER OF ECONOMIC GROWTH

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Abstract

In the modern world, financial technology ("Fin-Tech") is an important factor in economic growth. These technologies are changing the way we conduct transactions, provide financial services and manage risk. Fin-Tech plays an important role in stimulating economic growth, improving the efficiency of the financial sector, and providing access to financial services through digital media. FinTech includes big data, artificial intelligence, cloud technologies, blockchain, biometrics, etc. It is a modern technology for providing financial services using innovative technologies. This technology has the potential to transform financial services by making them more flexible, efficient and accessible. The article analyzes the impact of FinTech on economic development. Particular attention is paid to the role and influence of intelligent technologies on the development of FinTech. The article concludes that FinTech can become a powerful driver of economic growth. Financial technologies will have a positive impact on the development of the economy, the financial and banking system, business development, the creation of additional jobs and improved access to financial services. The purpose of this article is to study world experience on the impact of financial technologies on economic development, analyze the impact of artificial intelligence and blockchain technologies on the financial sector, as well as identify priority areas for the application of this technology for Turkmenistan. For this purpose, scientific literature and best practices implemented in different countries were studied. The article uses the method of comparative and system analysis.

Keyword: financial technology, FinTech, economic development, blockchain, artificial intelligence, cloud technology. The economic and technological revolution of the 21st century is associated with a research approach and the implementation of innovative technologies and digital platforms.

In the context of a changing economy and global competition, countries around the world are faced with the need to find new drivers of economic growth based on science and technology. One of these drivers is financial technologies ("FinTech", "Financial Technologies").

FinTech is a theoretical and practical field that has emerged from the combination of technology, finance and innovation.

According to the definition given by the Financial Stability Board (an international organization created by the G20 countries at the London summit in April 2009), "FinTech" refers to new business models, applications, processes or financial markets and institutions, also defined as financial innovation enabled by technologies (financial products) that significantly impact the provision of financial services [1]. This definition includes three important aspects:

1. The focus is on the importance of FinTech in the financial services sector. Typically, FinTech startups occupy a "narrow market niche" where customers are not satisfied with the services offered by traditional players.

2. FinTech always brings with it a revolution, that's what we're talking about. Regardless of the segment in which innovative financial solutions appear, meta-morphoses follow, that is, competitors of fintech companies have to change their business model, cost structure and communication channels with customers [2].

3. Innovativeness. FinTech always offers products (technologies, services) of higher quality and at a higher level.

The World Bank notes that FinTech creates new opportunities and challenges for the financial sec-

tor (from consumers to financial institutions, new entrants, as well as regulators) [3]. The World Bank is focusing on using financial technology to deepen financial markets, increase responsible access to financial services, and improve cross-border payments and remittance systems.

According to consulting McKinsey & Company, FinTechs are companies that primarily rely on technology to perform core financial services functions, influencing the way users store, save, take out a loan, invest, transfer, pay and protect their money [4].

Most FinTech companies were founded after 2000 and began raising funding in 2010. As financial technology improves, it makes it easier to transfer money from account to account between people, countries and organizations. As global experience shows, FinTech companies include startups, developing companies, banks, non-banking financial institutions and industry institutions.

Today, financial technology is promoted as a platform for sustainable economic growth and the driving force behind the fourth industrial revolution. To analyze the role of financial technologies in the national economy (using the example of Korea), scientists (Shin Y.J., Choi Y., 2019) compared economic indicators using three methods: demand based model, supply based model, and the effect of sectoral interrelations in sectoral analysis [5]. In particular, it is important to identify the FinTech sector not only as an innovative tool of the financial sector, but also as a platform for improving the level of the entire economic system.

Despite the development of FinTech innovations around the world, it is surprising that few studies in this area have been published in leading financial journals [6], but nevertheless we note the scientific approaches of some scientists.

A scientific article by scientists (Chen M.A., Wu Q., Yang B., 2019) provides extensive evidence of the emergence and value of fintech innovation. They emphasize that many FinTech innovations provide significant advantages to innovators and that blockchain technology is particularly valuable. For the financial industry, the Internet of Things (IoT), robo-advisors and blockchain are the most valuable forms of innovation [7].

Scientists (A.Boot, P.Hoffmann, L.Laeven, L.Ratnovski, 2020) in their scientific article develop a simple conceptual framework that identifies two main aspects of financial innovation: information (collection and processing of data) and communication (relationships and distribution). The article also contrasts the continuation of previous trends with new developments (the development of machine learning and artificial intelligence technologies) and the dominance of digital platforms [8].

Analyzing most scientific works on fintech, it can be noted that financial technologies have a positive impact on economic development. There are many different models and classifications of fintech. However, the defining characteristic of fintech companies is their ability to innovate. FinTech can stimulate economic growth in several ways:

- Increasing access to financial services. FinTech companies can provide financial services to people who do not have access to traditional banking services. It can help people start a business, invest in their education and improve their well-being;

 Reduced transaction costs. FinTech companies help reduce transaction costs through the use of ICT. This can make financial services more accessible and stimulate economic activity;

- Increasing competition. FinTech companies can increase competition in the financial market. This can lead to lower prices, improved service quality and more product choice for consumers;

- Creation of new jobs. FinTech companies can create new jobs in software development, customer service, and more.

The world's largest financial institutions have identified fintech as one of the most promising and priority technologies, acting as an engine of economic growth. FinTech is based on a set of technologies such as artificial intelligence, cloud technologies, big data, data analytics, blockchain, biometrics, etc.

Artificial Intelligence (AI) is rapidly changing the world, is already being used in financial markets in a variety of ways, and its influence will only increase in the future. In the financial system, AI is used to automate processes, predict stock prices, manage risk, and create new financial products and services. Banks and financial institutions are adopting AI-based approaches as AI is used in financial markets in a variety of ways, including:

- trading: AI is used for trading stocks, bonds, currencies and other financial instruments;

– analysis: AI is used to analyze market data and predict future price movements;

- risk management: AI is used to manage risks and identify potential threats;

- customer service: AI is used for customer service and answering questions.

Big Data technology has a significant impact on the transformation of the financial industry and occupies a special place in financial technology. This technology allows you to collect, store and analyze large and complex data sets from various sources. Financial institutions are increasingly using big data to improve financial decision making, increase efficiency and reduce risk. The use of this technology provides the financial sector with a number of advantages:

 increased efficiency: helps automate financial processes, reduce costs and improve customer service;

 improved decision making: Big Data enables financial institutions to make better decisions by providing information on customer behavior, market trends and risk factors;

 risk reduction: Big Data helps financial institutions identify and manage risks more effectively;

- creation and development of new products and services: Big Data technology allows financial institutions to create and improve new products and services that better meet customer needs.

Blockchain is a distributed ledger of data that facilitates financial transactions (transactions) in a secure, reliable and transparent manner. More specifically, blockchain allows financial transactions to be stored in multiple places simultaneously. Technologies such as smart contracts and distributed data storage and exchange (technologies required for existing fintech innovations such as digital wallets, digital assets, decentralized finance and non-fungible "tokens") are critical. The use of blockchain technology in the financial sector provides a number of advantages:

 increased security: blockchain provides a high level of data security based on the use of cryptography; - increased transparency: blockchain ensures the transparency of all transactions, allowing for increased trust between market participants;

 acceleration of transactions: blockchain provides significant acceleration of transaction processes;

- new opportunities: blockchain can be used to create new products and services, such as smart contracts and decentralized exchanges.

Cloud technologies are a secure model for providing IT resources (servers, data storage and networks) over the Internet. Cloud computing technology is radically changing the landscape of the financial system, offering innovative solutions to the financial sector to efficiently carry out transactions such as payments, lending, investing, financing and financial management. Cloud computing, in turn, is a powerful tool that helps fintech companies grow and provide high-tech services to customers. The use of cloud technologies in the financial sector provides a number of advantages:

1. Reduced costs: There is no need to finance private IT infrastructure. Cloud services provide access to IT resources by subscribing to cloud services, eliminating the need for large upfront investments. Ensures the effective use of IT resources. Cloud service providers offer a variety of pricing models that allow financial institutions to pay only for the resources they actively use.

2. Improving efficiency. Fast and easy deployment of IT infrastructure, including cloud services, allows financial institutions to quickly launch new products and services. Cloud services provide a wide range of automated IT solutions (including backup, data recovery, updating security databases, etc.).

3. Fast innovation and high level of service: Cloud technologies help financial institutions quickly adapt to changing market conditions, quickly develop and implement new financial products and services based on artificial intelligence and machine learning technologies, and provide customers with personalized and more convenient services.

4. Increased security. The largest cloud service providers are focused on providing financial institutions with high levels of data security, strong protection against cyber attacks and secure access based on biometric authentication. Thus, by analyzing the best world experience and information sources on the implementation and use of intelligent technologies in the financial system, the advantages and disadvantages of financial technologies for

development economic identiwere fied and appropriate proposals (recommendations) were prepared. Based on this approach, a comparative table was compiled.

Table

Financial technology	Advantages	Disadvantages	Recommendations
Mobile payments	Ensuring accessibility and convenience of financial services. Reducing the shadow econ- omy (prevention). Development of e-commerce.	The need for investment in infrastructure. Low level of financial liter- acy of the population. Cybersecurity Risk.	Development of mobile payment systems. Cooperation with international payment systems. Raising public awareness of the benefits of mobile payments.
Blockchain	Increased transparency and security of transactions. Accelerating cross-border payments.	The need to develop legislation. Lack of qualified personnel. Necessity more resources for installation.	Creation of a regulatory framework for the use of blockchain technolo- gies. Personnel training in the field of blockchain technology. Government support for blockchain-based pilot projects.
Artificial Intelligence	Automation and modernization of processes in the financial sector. Improving the efficiency of risk management. Personalization of financial services.	Risk of unemployment. The need to protect personal data. Ethical issues when using Artificial Intelligence.	Developing ethical principles for the use of artificial intelligence in the financial sector. Ensuring the protection of personal data. Retraining employees to work with artificial intelligence.
FinTech startups	Stimulating innovation. Creation of new jobs. Improving the competitive- ness of the financial sector.	The need for access to capital. Distrust of new participants. Regulatory restrictions.	Creating a favorable regulatory environment for fintech startups. Government support for fintech incubators and accelerators. Raising awareness of fintech star- tups.
FinTech lending	Expanding access for small and medium-sized businesses. Decrease in interest rates. Acceleration of the lending process.	Risk of "defaults". Distrust of new creditors. Limited credit history.	Development of a credit scoring system. Creation of guarantee funds. Supervising fintech lenders.

Benchmarking financial technologies for economic development

Note: Credit scoring is an analysis method that banks and other financial institutions use to assess the risks when issuing loans. The scoring is based on

information about the client's credit history, financial situation and other factors [9].

Over the past decades, fintech companies have revolutionized several aspects of financial services through innovative, differentiated and customercentric value propositions, collaborative business models, and agile and cross-functional teams.

Research from McKinsey analytics company shows that as of July 2023, the market capitalization of fintech companies was \$550 billion, doubling from the corresponding period in 2019. It also shows that between 2023 and 2028, fintech revenues will grow three times faster than traditional banking revenues [4]. According to KPMG analysts, global investment in financial technology in the first half of 2021 amounted to \$98 billion, compared to the same period in 2020, it increased to \$12 billion [10].

According to global information platform Statista, between 2021 and 2030, the FinTech industry's revenue growth is expected to follow different rates (trends) in different segments. Over



Diagram. Global FinTech segment revenue forecast for 2021-2030 (billion US dollars)

these years, total revenues are expected to be \$520 billion, loans \$400 billion, insurance \$240 billion, deposits \$155 billion, investments \$145 billion, and financial infrastructure \$80 billion (Diagram) [11].

The modern ecosystem is developing thanks to the efforts of fintech companies, fintech technology developers, fast-growing traditional financial institutions and government support. Thus, we can identify the main areas of financial technology that should be taken into account as an engine of economic development, these are:

1. Development of education and employment: financial literacy, increased professional training, public awareness of financial technologies and their opportunities.

2. Creating a favorable regulatory environment: creating a certain framework, preparing regulations and improving tax incentives, introducing digital identification, increasing cybersecurity, developing a long term strategy for the development of financial technologies.

3. Stimulating innovation: government grants to support research and development in the field of financial technologies, creating favorable conditions for financing fintech startups by venture companies, attracting fintech accelerators.

In general, the growth rate of FinTech depends on the regulatory framework, infrastructure and internet availability in different countries.

The article describes the importance of financial technologies and related innovations, intelligent technologies based on FinTech, comparative characteristics of financial technologies for economic development, economic indicators of the development of financial technologies, as well as the main directions for considering financial technologies as an engine of economic growth.

BIBLIOGRAPHY

1. Financial Stability Implications from Fin-Tech. Supervisory and Regulatory Issues that Merit Authorities' Attention. URL: https://www.fsb.org/ wp-content/uploads/R270617.pdf. 2. Евлоева, Л. Б. Финтех как новый вектор развития индустрии финансовых услуг // Вестник современных исследований. — 2019. — № 8.1. — С. 53–58.

3. https://www.worldbank.org/en/topic/fintech.

4. https://www.mckinsey.com/featured-insights/ mckinsey-explainers/what-is-fintech

5. Shin Y. J., Choi Y. Feasibility of the FinTech industry as an innovation platform for sustainable economic growth in Korea //Sustainability. – 2019. – T. 11. – Nº. 19. – C. 5351.

6. Goldstein I., Jiang W., Karolyi G. A. To Fin-Tech and beyond //The Review of Financial Studies. $-2019. - T. 32. - N_{\odot} . 5. - C. 1647-1661.$

7. Chen M. A., Wu Q., Yang B. How valuable is FinTech innovation? //The Review of Financial Studies. – 2019. – T. $32. - N_{\odot}$. 5. – C. 2062-2106.

8. Boot A. et al. Fintech: what's old, what's new? //Journal of financial stability. – 2021. – T. 53. – C. 100836.

9. http://www.sberbank.ru/ru/person/blog/ chto-takoe-skoring-v-banke

10. https://kpmg.com/xx/en/home/insights/2021/08/pulse-of-fintech-h1-2021-global. html

11. https://www.statista.com/statistics/1420335/ global-fintech-revenue-growth-forecast-by-segment/