

Blockchain Technologies and Digitalization in the Tax System: Evidence From Uzbekistan

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Abstract: This article analyzes the significance and application of blockchain technologies in the tax system. It highlights how blockchain's advantages –immutability, transparency, and security – can improve tax administration efficiency. Issues such as automating tax reporting, increasing state budget revenues, and reducing human factors are examined. Additionally, reforms in Uzbekistan related to the implementation of digital economy and blockchain technologies are discussed.

Keywords: blockchain, digital economy, tax system, automation, transparency, digitalization, financial control.



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INTRODUCTION

In the current global economic environment, the effective use of the opportunities of the digital economy is emerging as one of the strategic tasks in order to deepen socio-economic reforms and ensure the development of the state. In this process, the reforms implemented by the state, in particular, the programs adopted on digitalization, are aimed at accelerating the pace of economic growth in the country and improving the business environment.

In particular, the widespread introduction of digital technologies into the activities of each business entity as an integral part of the digital economy is of great importance. Digital technologies, including blockchain, artificial intelligence and automated accounting systems, have unparalleled opportunities for optimizing economic processes, ensuring transparency and reducing the risks of corruption.

The introduction of digital technologies in the effective organization of financial relations serves not only to automate accounting processes, but also to increase reliability, speed and accuracy in the financial system. In particular, the implementation of blockchain technology ensures the transparency of financial transactions, immutability and security of records.

Today, digitization processes are widely used not only in the activities of commercial banks and financial institutions, but also in the tax payment management system. In order to ensure tax stability, automate calculations and strengthen control mechanisms in the activities of economic entities, the use of blockchain technologies is gaining urgent importance. This, in turn, serves as an important factor in ensuring legitimacy in the economic environment and increasing tax revenues.

Therefore, the further expansion of the digital economy, the use of innovative solutions in the field of financial relations, including the implementation of blockchain technologies, has become one of the priorities of modern economic policy.

Literature review

The digital economy and its importance in the national economic system have been reflected in numerous scientific studies in recent years. In particular, K.M. Gilazov and A.V. Shuvalov (2021) in their works see the digital economy as an important driver of modern development and describe the introduction of digital technologies, which are its components, as an important factor in ensuring transparency in public administration [1].

Regarding the role of blockchain technologies in financial relations, international researchers, including Tapscott and Tapscott (2016) in their work "Blockchain Revolution", have comprehensively analyzed the potential of this technology, its advantages in ensuring transparency and security in financial transactions [2]. Also, the reports of the Eurasian Economic Forum have highlighted the opportunities for increasing state budget revenues by digitizing tax administration using blockchain technologies.

Recent research has shown that changing tax policies, financial control mechanisms, and constant changes in the regulatory framework negatively affect the economic stability of enterprises. This can especially affect the flow of income, discipline in paying tax obligations, and the reliable reputation of the enterprise in the tax sphere. In their study, Zaynalov and Ahrorov (2019) emphasized the need to ensure a balance of interests between taxpayers and tax authorities, paying special attention to the issue of optimizing the tax burden [3]. They analyzed how tax relations are reflected in the case of entities with cross-border activities - that is, international corporations, joint ventures, and foreign enterprises. On the other hand, although blockchain technologies were initially formed as a financial instrument associated with cryptocurrencies, their scope of application is currently expanding. Lindman et al. (2017) argue that blockchain technology has the potential to become an effective tool not only for digital currencies, but also for a wide range of economic and social relations [4]. They consider it a reliable technology for formalizing agreements, recording rights to digital property, and conducting transparent transactions. Based on today's requirements, these technologies play an important role in making the business environment competitive and stable.

Blockchain was one of the first to become popular as a cryptocurrency (bitcoin). Blockchain creates a single register for tracking a large number of interconnected transactions and their impact on business. Experience shows that blockchain creates a chain that solves business problems and prevents fraud in the financial services sector.

M.Kh. Murodov and A.J. Akhmedov (2023) analyzed the practical results of the introduction of digital technologies in the economy of Uzbekistan, and their research clearly indicated the current problems and solutions [5]. The authors scientifically substantiated the possibility of reducing uncertainties in the exchange of financial information, automating tax reporting, and expanding digital monitoring systems through the use of blockchain.

Global trends in digitization and centralization of management processes further highlight the need to introduce new technological solutions in the tax system. In particular, the possibility of implementing blockchain technology in practice arises by updating the infrastructure in accordance with modern digital standards.

Gurova (2019) noted that blockchain-based digital infrastructure plays an important role in raising relations between business entities and state tax authorities to a new level [6]. This technology, in particular, makes it possible to automate tax reporting, reduce bureaucratic obstacles, speed up data exchange and ensure accuracy. Therefore, blockchain-based solutions are relevant in terms of increasing efficiency and reducing excessive resource consumption in tax administration.

Analysis and results

Currently, modern mechanisms for implementing state tax policy put on the agenda the need to take effective measures to prevent possible negative situations in the tax sphere. In order to eliminate unexpected financial risks and other dangers that may arise in the tax system, it is necessary to reconsider the tasks of budget and tax management systems at various levels and introduce modern management

tools into the activities of tax authorities. This will serve to actively and sustainably manage the tax system, minimize risks, and strengthen the state financial system.

Some Russian scholars, analyzing the possibilities of using modern digital solutions, in particular blockchain technologies, in the tax system, have drawn attention to a number of advantages in this direction. In particular, Magerramov and Zhelamsky (2018) emphasize in their research that the introduction of blockchain technology in the tax sphere plays an important role in increasing the effectiveness of tax control.

According to them, one of the main advantages of blockchain is the immutability and transparency of data [7]. This, in turn, creates an environment of trust between tax authorities and entrepreneurs, creating the possibility of precise tracking of all stages of the purchase and sale of each product or service. According to the researchers, through this technology, information is delivered to all participants in real time in the form of automatic updates, which guarantees the accuracy and security of the data.

Table 1. Advantages of introducing blockchain technologies in the tax system

No	Type of advantage	Explanation
1	Transparency	All tax transactions are kept in an open and auditable register
2	Immutability of data	It is impossible to change the entered data - the risk of falsification disappears
3	Automation	Tax reports are prepared automatically, human error in calculations is reduced
4	Real time control	Tax revenues and transactions are tracked and analyzed at the time
5	Anti-corruption effect	By reducing the human factor, the influence of interested parties is limited through a transparent system
6	Increase in tax revenue	Encourages full and timely tax payment
7	Reducing bureaucratic obstacles	Redundant paperwork and the need for ongoing inspections are reduced
8	Confidence in taxpayers will be strengthened	Trust and legitimacy will increase in relations with tax authorities
9	Remote access	Taxpayers can enter and monitor their reports from anywhere
10	Possibility of systematic analysis	Effective tax policy decisions are made through rapid analysis of large-scale data

From the analysis of the table above, it is clear that the introduction of blockchain technology into the tax system provides a number of important advantages. First of all, this technology allows you to make tax operations more transparent, reduce the human factor, and establish full control over data. At the same time, real-time analysis and reporting increase the efficiency and positive results of tax administration.

By reducing bureaucratic barriers, automatically generating reports, and establishing trusting relationships with taxpayers, the efficiency and trust in the activities of state tax authorities will increase. This will create convenience for taxpayers, increase their reporting culture, and tax revenues will be collected in full and on time.

Thus, the integration of blockchain technology into the tax system will serve as one of the important factors in ensuring socio-economic stability, increasing state budget revenues, and forming a new digital financial environment.

In addition, the security principle of the blockchain, namely the impossibility of unauthorized changes to the data, or the immediate notification of all participants in the event of such changes, provides full control over the data. From this point of view, the blockchain can create the opportunity to automate, make tax payments transparent and effectively manage them.

Although the main focus in the process of introducing digital technologies in the tax system is on managing financial resources, the timely and complete implementation of tax payments within them remains a priority. This aspect makes the practical application of digital solutions, in particular blockchain technology, even more relevant. Through blockchain platforms, it is possible to control the payment of taxes within the established deadlines, ensure the accuracy and transparency of operations.

Because frequently changing standards in the tax system, unexpected financial risks, and complex calculation processes encourage not only financial managers, but also tax authorities to use innovative technologies. In this case, blockchain platforms allow real-time monitoring of cash flows, income and expenditure data, automatic reporting, and reduced errors. In addition, the role of this technology in simplifying calculations and increasing tax discipline is increasing.

Uzbekistan is also paying serious attention to this issue, and the Presidential Decree No. PF-6079 of October 5, 2020 "On the Development of the Digital Economy" stipulates the widespread introduction of digitalization in all areas. This document clearly outlines the goals of using digital solutions in public administration, the tax and financial system [8].

There is no doubt that blockchain can be a useful tool in corporate taxation and finance around the world. Blockchain, by connecting chains, serves to diagnose the financial condition of an enterprise, taxation, and optimize certain processes. Blockchain technologies demonstrate such positive characteristics as immutability of data, ensuring trust for all participants in the chain, openness, security, and reducing unnecessary intermediaries. In addition, blockchain reduces dependence on third parties for transactions and payment commissions.

Enterprises can use blockchains for tax reporting and their financial consequences from any of their branches, easily accessing the single digital register at any time.

One of the measures that is becoming increasingly popular in tax practice today is the introduction of electronic invoices. While this is aimed at eliminating obstacles associated with unnecessary time and cost, this process is certainly not simple.

This process can be further simplified by using blockchain technologies and information on turnover and tax evasion through invoices will be available even before taxpayers receive tax reports, which will allow for timely and accurate verification of taxpayer reports.

In practice, when eliminating tax debt at the same time, it can be seen that the state tax authority issues a collection order and, on the other hand, the business entity signs a payment order, resulting in double tax payments. In such a situation, an overpayment occurs in the tax accounting and the business entity is deprived of the necessary financial resources.

In the tax system, blockchain technology will ease the management burden, make it easier for the business entity to obtain information about cash flows in its bank account and existing file folders without unnecessary hassle, and create the opportunity to easily repay tax debt.

An industrial enterprise can obtain information about financial transactions carried out from any point in the country using blockchains. At the same time, knowing information about finished products in the warehouse, it can find out information about the amount of taxes paid for the products sold. The integration of information into a single database creates the basis for the prompt and fair implementation of tax relations between enterprises.

Blockchain reduces costs between enterprises, between enterprises and consumers, between enterprises and the government and serves to increase business value. This makes it possible to reduce the state's costs of taxation.

As Akhmedov (2019) noted, in order to effectively use blockchain technologies in the tax system, it is necessary, first of all, to digitize the entire tax administration system. This can be achieved by transferring all tax processes to electronic form [9]. According to the author, such an approach not only simplifies data processing, but also guarantees the security of information related to the state budget.

Another important aspect highlighted in the study is the idea of introducing personal digital accounts for all taxpayers (individuals and legal entities). Financial transactions carried out through these accounts are recorded via blockchain and are practically impossible to change. This ensures the integrity and accuracy of data.

At the same time, Z. Akhmedov notes another advantage of this system in practice - various complications arising in the processes of accounting reports, tax calculations and archiving are significantly reduced. Thus, blockchain technology forms a convenient platform not only for strengthening control, but also for optimizing management costs.

Taking into account the above economic realities, researchers emphasize the need to evaluate a certain part of the costs that are not visible as a source of income (profit). In this case, it is advisable to take these costs into account in the object of taxation. Because they can lead to a decrease in revenues to the

state budget by reducing the threshold of tax-paying ability (potential). Accordingly, it is advisable to assess the losses arising from any risk not from the point of view of the "actual tax potential", but from the point of view of the "possible tax potential".

One of the most important factors in the effective management of the tax system is rational financial decision-making based on analytical data. The availability of sufficient data, as well as the ability to analyze them in depth and correctly, will serve to correctly direct tax relations, in particular, to develop practical measures to reduce risks. Therefore, it is important to analyze past mistakes in tax policy and form mechanisms for their elimination.

Based on such analyzes, economic entities should strengthen the control function in making decisions on the introduction of blockchain technologies in their economic activities. Because control is one of the decisive factors in the implementation of tax policy.

In conclusion, it can be said that the implementation of blockchain technologies in the tax system provides the state with a number of strategic advantages. In particular, as a result of reducing the influence of the human factor, state budget expenditures will be reduced, corruption cases and the intervention of interested parties will be sharply reduced. Most importantly, the full automation of tax accounting and control will create an opportunity to ensure the completeness of revenues to the state budget.

Conclusion

Based on the above analysis, it can be said that the introduction of blockchain technologies in the tax system will not only serve to develop digital infrastructure, but also make it possible to implement fundamental changes in public financial management. Increasing the role of blockchain in eliminating problems arising in tax administration, ensuring transparency and reliability of reports, reducing the human factor and reducing the risk of corruption is of particular importance.

Research shows that the features of blockchain technology, such as storing data in an immutable form, updating it in real time, security and openness, play an important role in regulating tax relations and strengthening the environment of trust between taxpayers and state bodies. This technology will allow business entities to submit their tax reports through a centralized digital platform, and to fulfill their tax obligations in a timely and complete manner.

Also, the introduction of blockchain technologies in the national tax system will serve to increase revenues to the state budget, reduce overpayments and errors, control the turnover of goods through invoices, and bring tax administration to a qualitatively new level by forming a single digital database. In conclusion, it can be said that the reforms being undertaken by the government to digitize the tax system and implement blockchain technologies in Uzbekistan will not only increase economic efficiency, but should also be considered as a strategic direction aimed at strengthening financial stability and tax payment culture.

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