

© V.S. Grishin, I.V. Solovev, K.A. Shuklina, V.S. Osipov

Research full article

UDC 339.738

DOI: <http://doi.org/10.15350/2409-7616.2023.3.08>

**PROSPECTS OF THE UTILIZATION OF DIGITAL ASSETS
IN INTERNATIONAL SETTLEMENTS FOR RUSSIA**

V.S. Grishin, I.V. Solovev, K.A. Shuklina, V.S. Osipov

Viktor S. Grishin,

Student of the Moscow State Institute of International
Relations, Moscow, Russian Federation.

Grishin_V_S@my.mgimo.ru

Ivan V. Solovev,

Student of the of the RANEPА, Moscow, Russian
Federation.

solovev.ivan@yandex.ru

Ksenya A. Shuklina,

Student of the Moscow State Institute of International
Relations, Moscow, Russian Federation.

Shuklina_K_A@my.mgimo.ru

Vladimir S. Osipov,

Doctor of Economic Sciences, Head of the
Department of Lomonosov Moscow State University;
Head of the Department of RANEPА, Moscow,
Russian Federation.

ORCID iD 0000-0003-3109-4786

vs.ossipov@gmail.com

Abstract. *Representation of the problem.* Currently, Russia is the country against which the largest number of sanctions have been imposed. As a result, a great number of unsolved problems have arisen, one of those problems is the conduct of international settlements. *Relevance.* In the context of economic uncertainty and instability the role of cryptocurrencies as a potential alternative to traditional settlement systems, particularly has surged. The unstable global banking system, characterized by economic crises, bank failures, political tensions, and imposed sanctions, has highlighted the need for alternative financial solutions. Cryptocurrencies, with their decentralized nature, offer a potential solution to some of these challenges by reducing reliance on centralized banking institutions and promoting financial inclusion. Moreover, in recent years, cryptocurrencies have gained considerable attention and adoption due to

their borderless nature and potential for faster, more cost-effective transactions. For Russia, the rise of cryptocurrencies provides numerous opportunities, as embracing cryptocurrencies could offer new economic prospects by attracting investment, fostering innovation, promoting financial inclusion and solving settlement problems caused by sanctions. Moreover, Russia has a strong technology sector, and supporting the development of blockchain and cryptocurrency projects could further strengthen this industry. Tasks. In order to capitalize on the opportunities presented by the rising popularity of cryptocurrencies, Russia must develop a balanced regulatory approach that promotes innovation while addressing potential risks. This could involve creating a clear legal framework for cryptocurrencies, implementing measures to prevent illegal activities, and promoting education and awareness about digital assets. By doing so, Russia could harness the potential of cryptocurrencies in the context of an unstable global banking system and create new prospects for its economy.

Keywords: *Russia, cryptocurrencies, sanctions, BRICS, Ripple, stablecoin, infrastructure, regulations.*

For citation: *Grishin V.S., Soloviev I.V., Shuklina K.A., Osipov V.S. Prospects of using digital assets in international settlements in Russia. CITISE, 2023, no. 3, pp. 93-103. DOI: <http://doi.org/10.15350/2409-7616.2023.3.08>*

Научная статья

УДК 339.738

ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ АКТИВОВ В МЕЖДУНАРОДНЫХ РАСЧЕТАХ В РОССИИ

В.С. Гришин, И.В. Соловьев, К.А. Шуклина, В.С. Осипов

Гришин Виктор Сергеевич,

студент, факультет международных
экономических отношений, Московский
государственный институт международных
отношений МИД Российской Федерации,
Москва, Россия.

Grishin_V_S@my.mgimo.ru

Соловьев Иван Владимирович,

студент, Российская академия народного
хозяйства и государственной службы при
Президенте Российской Федерации, Москва,
Россия.

solovevv.ivan@yandex.ru

Шуклина Ксения Алексеевна,
студент, факультет международных
экономических отношений, Московский
государственный институт международных
отношений МИД Российской Федерации,
Москва, Россия.
Shuklina_K_A@my.mgimo.ru

Осипов Владимир Сергеевич,
доктор экономических наук, заведующий
кафедрой, МГУ имени М.В. Ломоносова;
заведующий кафедрой зарубежного
регионоведения и международного
сотрудничества, Российская академия народного
хозяйства и государственной службы при
Президенте Российской Федерации, Москва,
Россия.
РИНЦ SPIN-код: 9357-6409
ORCID iD 0000-0003-3109-4786
vs.ossipov@gmail.com

Аннотация. *Представление проблемы.* В настоящее время Россия является страной, против которой введено наибольшее количество санкций. В результате этого возникло огромное количество нерешенных проблем, одной из которых является проведение международных расчетов. *Актуальность.* В условиях экономической неопределенности и неустойчивости роль криптовалют, как потенциальной альтернативы традиционным системам расчетов, особенно возросла. *Нестабильная мировая банковская система,* характеризующаяся экономическими кризисами, банкротствами банков, политической напряженностью и введенными санкциями, подчеркнула необходимость альтернативных финансовых решений. Криптовалюты, с их децентрализованной сущностью, предлагают потенциальное решение некоторых из этих проблем за счет снижения зависимости от централизованных банковских учреждений и расширения доступа к финансовым услугам. Более того, в последние годы криптовалюты привлекли значительное внимание и получили широкое распространение благодаря своей безграничной сущности и потенциалу для более быстрых и экономически эффективных транзакций. Для России развитие криптовалют открывает многочисленные возможности, поскольку внедрение криптовалют может открыть новые экономические перспективы за счет привлечения инвестиций, стимулирования инноваций, расширения доступа к финансовым услугам и решения проблем урегулирования, вызванных санкциями. Более того, в России развит технологический сектор, и поддержка развития блокчейн-проектов и криптовалютных систем могла бы еще больше укрепить эту отрасль. *Задачи.* Чтобы максимально использовать возможности, предоставляемые растущей популярностью криптовалют, Россия должна разработать сбалансированный подход к регулированию, который способствует инновациям при одновременном устранении потенциальных рисков. Это могло бы включать создание четкой правовой базы для криптовалют, осуществление мер по предотвращению незаконной деятельности и стимулирование образования и осведомленности о цифровых активах. Таким

образом, Россия могла бы использовать потенциал криптовалют в условиях нестабильной глобальной банковской системы, создавая новые перспективы для своей экономики.

Ключевые слова: *Россия, криптовалюты, санкции, БРИКС, Рупл, стейблкоин, инфраструктура, нормативно-правовое регулирование.*

Библиографическая ссылка: *Гришин В.С., Соловьев И.В., Шуклина К.А. Осипов В.С. Перспективы использования цифровых активов в международных расчётах в России // ЦИТИСЭ. 2023. № 3 (36). С. 93-103. DOI: <http://doi.org/10.15350/2409-7616.2023.3.08>*

Introduction.

Navigating the complex world of digital assets in the context of global economic pressures necessitates an understanding of the integral mechanisms and frameworks within the sphere of cryptocurrencies. As we embark on this exploration, we encounter a multitude of definitions reflective of the diverse conceptualizations of cryptocurrencies. So, we would like to focus your attention on the following definitions:

- Cryptocurrencies are digital or virtual currencies that use cryptography for security and operate on a decentralized network called blockchain. They are an alternative form of currency to traditional, government-issued fiat currencies like the US dollar, euro, or Russian ruble.
- A cryptocurrency is a digital or virtual currency that uses cryptography for security and operates independently of a central bank.
- A cryptocurrency is a medium of exchange, created and stored electronically in the blockchain, using encryption techniques to control the creation of monetary units and to verify the transfer of funds.

Moving forward from these definitions, it's crucial to delve into key aspects that further illuminate the nature and operation of cryptocurrencies (Viswanath-Natraj et al., 2022):

1. **Decentralization:** Cryptocurrencies are not controlled by any central authority, such as a central bank or government. Instead, they are based on a distributed ledger technology called blockchain, which is maintained by a network of computers (nodes) that work together to validate and record transactions.

2. **Blockchain technology:** The underlying technology behind most cryptocurrencies is blockchain. It is a digital, public ledger that records transactions in a secure and tamper-proof manner. Each new transaction is added to a "block," and once a block is full, it is linked to the previous block, forming a "chain" of blocks. This ensures the integrity of the transaction history and prevents double-spending.

3. **Cryptography:** Cryptocurrencies rely on cryptographic techniques to secure transactions, control the creation of new units, and verify the transfer of assets. Public and private keys are used to enable secure transactions between users.

4. **Mining:** Mining is the process of validating and adding new transactions to a blockchain. Miners use powerful computers to solve complex mathematical problems, and when they successfully solve the problem, they are rewarded with new units of cryptocurrency. This process helps maintain the security and integrity of the blockchain.

Research Methodology.

Cryptocurrencies serve various purposes, depending on their design and underlying technology. They can be broadly classified into three categories based on their goals: transactional cryptocurrencies, platform cryptocurrencies, and utility or asset-backed cryptocurrencies.

Transactional cryptocurrencies:

These cryptocurrencies primarily serve as a medium of exchange, store of value, and unit of account. They aim to provide a decentralized, secure, and relatively fast method for transferring value globally, without the need for intermediaries like banks.

Examples include: Litecoin (LTC): Often referred to as "the silver to Bitcoin's gold," Litecoin is a transactional cryptocurrency that focuses on faster transaction speeds and lower fees compared to Bitcoin.

Platform cryptocurrencies:

These cryptocurrencies are designed to support the development of decentralized applications (dApps) and smart contracts on their respective blockchain platforms. They enable developers to create and deploy various applications without the need for centralized control.

Examples include: Cardano (ADA): Cardano is a third-generation blockchain platform that aims to provide a more scalable, secure, and sustainable ecosystem for dApps and smart contracts. Its native token, ADA, is used for transactions and as fuel for smart contracts on the Cardano network.

Utility or asset-backed cryptocurrencies:

These cryptocurrencies provide specific utilities or are backed by real-world assets, such as commodities or other digital assets. They can serve various purposes, such as enabling access to services, rewarding users, or representing ownership of assets.

Examples include: Binance Coin (BNB): Initially created as a utility token for the Binance cryptocurrency exchange, BNB now has multiple use cases, including discounts on trading fees, participating in token sales, and staking for various services on the Binance Smart Chain.

Tether (USDT), USD Coin (USDC), and other stablecoins: These cryptocurrencies are designed to maintain a stable value by pegging them to a reserve of assets, such as fiat currency or other cryptocurrencies. They aim to combine the stability of traditional currencies with the advantages of cryptocurrencies, such as fast transactions and lower fees (Lyons and Viswanath-Natraj, 2023).

Also, the Ripple cryptocurrency (XRP) is worth mentioning as it slightly differs from other cryptocurrencies mentioned above. It is designed to facilitate fast, low-cost, cross-border payments and to serve as a bridge currency between different fiat currencies in the global financial system. Ripple is the native digital asset of the Ripple network, which is built on a distributed ledger technology called the XRP Ledger. Unlike other cryptocurrencies like Bitcoin or Ethereum, Ripple's primary focus is on improving the efficiency and reducing the costs associated with traditional cross-border money transfers. The Ripple network is designed to work with banks, payment providers, and other financial institutions to facilitate frictionless, real-time transactions between various currencies.

Ripple's consensus mechanism is different from the proof-of-work used by Bitcoin or the proof-of-stake used by Ethereum. Instead, it uses a consensus algorithm called the Ripple Protocol Consensus Algorithm (RPCA), which allows for faster transaction processing and lower energy consumption. XRP can be considered a transactional cryptocurrency due to its primary use case as a medium for cross-border transactions. However, it differs from other transactional cryptocurrencies like Bitcoin or Litecoin in that it is more focused on improving the existing financial infrastructure, specifically in the context of international money transfers, rather than completely replacing traditional fiat currencies.

Ripple System

RippleNet is a global payment and settlement system designed to facilitate fast, low-cost, and secure cross-border transactions. It uses a digital asset called XRP as a bridge currency for transactions between different fiat currencies. Ripple's technology is built on a distributed ledger called the XRP Ledger, which is maintained by a network of validating nodes (Son and Jang, 2023).

Processing mechanism of Ripple:

- A sender initiates a cross-border payment: When a user (individual or institution) wants to send money to another user in a different country and currency, they initiate a transaction on the Ripple network through a participating financial institution or payment provider.
- Finding the best exchange path: The Ripple network searches for the most efficient path for the transaction, considering factors like exchange rates and transaction fees. The path may involve direct exchanges between the sender's and recipient's currencies, or it may use XRP as a bridge currency if that provides a more efficient route.
- Path validation and exchange rate locking: Once the best path is found, the involved parties (e.g., banks, payment providers) validate the transaction details, and the exchange rate is locked to prevent fluctuations during the transaction process.
- Transaction execution: The sender's financial institution debits the sender's account in their local currency and transfers the equivalent amount to the recipient's financial institution, either directly or through XRP as a bridge currency. The transaction is settled in real-time, usually taking only a few seconds.
- Updating the XRP Ledger: The transaction details are recorded on the XRP Ledger, which is maintained by a network of validating nodes. These nodes use the Ripple Protocol Consensus Algorithm (RPCA) to agree on the state of the ledger and ensure its integrity.
- Recipient's account credited: The recipient's financial institution credits the recipient's account in their local currency, completing the cross-border transaction.

Authors' conceptual approaches to problem solving and their analysis.

In the wake of the special military operation in Ukraine, the U.S. and EU governments have imposed a substantial number of economic and financial sanctions on Russia, which have notably altered the landscape of international settlements for Russian entities. A significant portion of the Russian banking sector – roughly 80% – now finds itself under sanctions, impeding the ability of Russian companies to conduct standard international settlements and prompting them to adapt their strategies.

Given this tumultuous backdrop, an interesting shift has taken place within the sphere of currency preferences for Russian entities involved in international trade. Due to the sanctions imposed, the appeal of traditionally dominant currencies such as the US dollar and Euro – now perceived as 'toxic' – has waned considerably. However, these currencies still play a substantial role in Russian international trade, accounting for 50% of export operations and 48% of import operations, according to recent data. This continuing reliance can be attributed to the existing global financial infrastructure and the deep-rooted status of these currencies in global trade.

Parallel to this development, the sanctions have catalyzed an increase in the use of currencies from countries that maintain friendly relations with Russia, most notably the Chinese yuan and the Indian rupee. These currencies, free from the direct impact of sanctions, are becoming more appealing for Russian businesses seeking stability and certainty in their international transactions. Although the scale of this shift will likely depend on various factors such as the duration and intensity of the sanctions and the willingness of these 'friendly' countries to increase their trade and financial ties with Russia.

Moreover, it is crucial to highlight an interesting pattern regarding the handling of export revenues by Russian companies. A sizable portion of these revenues, instead of being sold in the market,

is held back and accumulated within foreign infrastructure. The sale of foreign currency primarily takes place in amounts necessary to pay taxes, with the remainder largely retained offshore. This could be a strategic move aimed at preserving hard currency resources and hedging against the effects of the sanctions. It could also be a consequence of the lack of appealing options for converting these funds within Russia due to the sanctions and related economic uncertainty.

So, as the landscape of international settlements for Russian entities has been significantly reshaped by the sanctions, it has brought a set of challenges and induced strategic adaptations, leading to an interesting shift in currency preferences and practices related to the handling of export revenues. These developments have profound implications for the future of international settlements in Russia, which will likely continue to evolve in response to the changing geopolitical and economic circumstances (Zharova and Lloyd, 2018)

Findings.

The imposition of economic sanctions on Russia has sparked the necessity for innovative solutions to facilitate international settlements. That is why, we would like to propose the creation of a stablecoin, based on the basket of friendly currencies such as those from the BRICS nations (Brazil, Russia, India, China, and South Africa), which emerges as a viable solution. This approach could bypass the traditional banking sector, beleaguered by sanctions, and provide an alternative means for international transactions.

Given the diverse and relatively balanced economic profiles of the BRICS nations, basing a stablecoin on their combined currencies could result in a reasonably stable and liquid instrument. The composition of the stablecoin could be predicated on the share of each currency used in international settlements between these nations, ensuring a balanced representation and fostering inter-BRICS trade. However, formulating the exact composition would require a comprehensive analysis of trade flows, exchange rates, and economic prospects of the respective countries.

The St. Petersburg Stock Exchange (SPB), with its focus on investing in foreign assets and the infrastructure it provides for this purpose, could potentially play a pivotal role in realizing this concept. The Exchange is currently building a network of depositories in friendly jurisdictions, thus strategically positioning itself to sidestep the reach of the sanctions. These facilities could serve as the backbone for the issuance, storage, and transfer of the proposed stablecoin. They could also aid in mitigating potential sanctions-related risks, given their strategic locations.

Another noteworthy aspect is the potential liquidity provision for the stablecoin. Russian exporters, known for accumulating their revenues abroad, could be instrumental in this regard. The revenues thus retained could be used to purchase and hold the stablecoin, contributing to its stability and liquidity. This could incentivize other entities, both within and outside Russia, to adopt the stablecoin, given its liquidity and potential for value preservation in the face of sanctions-induced economic uncertainty.

Analysis of the presented results.

To facilitate the creation of such a stablecoin, a collaborative, multi-pronged approach would be required. Firstly, the development of a robust legal and regulatory framework would be paramount. This would involve addressing issues such as the stablecoin's legal status, compliance requirements, and mechanisms to ensure financial integrity and transparency. It would also entail working closely with the central banks and financial regulators of the respective BRICS nations to ensure the stablecoin's alignment with their monetary policies.

Secondly, the development and implementation of a robust technological infrastructure would be essential. This would involve building secure and efficient blockchain platforms to support the issuance,

transfer, and redemption of the stablecoin. The use of advanced cryptographic techniques would be necessary to ensure the security and integrity of transactions, while scalable and efficient consensus algorithms would be required to handle potentially large transaction volumes.

Thirdly, establishing a reliable price stabilization mechanism would be vital. This could involve the use of algorithms that adjust the stablecoin's supply in response to changes in its price or the value of the underlying currency basket. A reserve of the underlying currencies could also be held as collateral to back the stablecoin and ensure its stability.

However, while the proposed stablecoin could offer several benefits, it's not without its risks. The stability of the stablecoin would depend largely on the stability of the underlying currencies, which could be influenced by a variety of factors, including geopolitical risks, economic policies, and market dynamics. Moreover, the use of the stablecoin could potentially attract additional sanctions, given its potential to circumvent existing ones. Measures to mitigate these risks would need to be embedded into the stablecoin's design and operational framework.

Transitioning from the concept of a BRICS-based stablecoin, we furthered our proposition to the development of a comprehensive network system to streamline international settlements. By drawing parallels with the Ripple network, we proposed a blockchain-based network that utilizes the aforementioned stablecoin. This network would enable a transparent, secure, and efficient way of conducting international settlements, significantly reducing reliance on traditional banking systems. In the following sections, we will delve deeper into this conceptual framework, exploring the transactional mechanics, compliance and security measures, and potential risks associated with the proposed system.

The blueprint of the settlement system.

1. Network Structure:

The stablecoin network would function on a distributed ledger technology (DLT) system. This decentralized approach ensures transparency and reduces the potential for single points of failure, while also maintaining the integrity of the transaction data.

The network would comprise nodes, representing individual participants or entities within the network, such as banks, financial institutions, and businesses. These nodes would operate based on a consensus algorithm, which ensures all network participants agree on the validity of transactions.

2. Issuance of the Stablecoin:

The issuance of the stablecoin would be centralized through a trusted authority - let's call this entity the 'BRICS Financial Authority' (BFA). The BFA could be a consortium formed by the SPB Stock Exchange, BRICS banks, and other key stakeholders. The BFA would issue the stablecoin against the respective BRICS currencies deposited in the depositories, based on the predetermined basket weights.

3. Transaction Flow:

The transaction process would consist of a series of steps:

- a. The sender initiates a transaction in their native currency. This transaction request would be propagated across the network.
- b. The transaction would be routed through a liquidity provider (LP). The LP could be Russian exporters or other entities holding the stablecoin. The sender's native currency would be exchanged for the equivalent amount of stablecoin.
- c. The stablecoin would then be transferred across the network, from the sender's node to the recipient's node.
- d. The recipient's node would then convert the stablecoin back into the recipient's native currency, with the help of a local LP.

e. The final transaction, now in the recipient's currency, would be confirmed and recorded on the blockchain.

4. Consensus Mechanism:

A consensus mechanism, similar to Ripple's consensus protocol, could be adopted to validate transactions. In this mechanism, each node has a unique node list (UNL), comprising trusted nodes chosen by it. When a transaction is initiated, it is verified by the nodes in the UNL. If a supermajority agrees on the transaction's validity, it is considered validated.

5. Compliance and Security:

The network would need to comply with international security standards, such as the ISO/IEC 27001, to ensure data integrity, confidentiality, and availability. Robust cryptographic techniques would be used to secure transactions.

6. Interoperability:

The network could potentially be made interoperable with other DLT systems to expand its utility and enhance ease of use for participants. Interoperability protocols would allow for cross-chain transactions and widen the stablecoin's reach.

Potential Risks.

The creation of such a network brings its set of risks, primarily relating to regulatory compliance, technological security, and market liquidity. Measures to mitigate these risks would include implementing stringent security protocols, maintaining a sufficient reserve of the underlying currencies to ensure liquidity, and regularly liaising with financial regulators to ensure the operations remain within legal and regulatory boundaries (González-Gallego, 2021).

Conclusion.

In conclusion, the world of cryptocurrencies offers a potential pathway for mitigating the economic pressures faced by Russia due to international sanctions. The characteristics of cryptocurrencies, such as decentralization, security via cryptography, and operation outside traditional banking systems, offer an alternative means for conducting international transactions. The possible transition from traditional banking systems to decentralize ones can signify a broader shift in the global financial landscape, highlighting the growing relevance of digital assets. Despite the challenges, the strategic use of cryptocurrencies and related technologies offers promising possibilities for fostering financial resilience and bolstering international trade in an increasingly interconnected global economy. It's a testimony to the transformative potential of blockchain technology and a glimpse into the future of international finance and trade.

References:

1. Zharova A., Lloyd I. An examination of the experience of cryptocurrency use in Russia. In search of better practice. *Computer Law & Security Review*, 2018, vol. 34, issue 6, pp. 1300-1313. p: <https://doi.org/10.1016/j.clsr.2018.09.004>.
2. Son B., Jang H. Economics of blockchain-based securities settlement. *Research in International Business and Finance*, 2023, vol. 64. DOI: <https://doi.org/10.1016/j.ribaf.2022.101842>.
3. Shin D., Rice J. Cryptocurrency: A panacea for economic growth and sustainability? A critical review of crypto innovation. *Telematics and Informatics*, 2022, vol. 71. DOI: <https://doi.org/10.1016/j.tele.2022.101830>
4. Li D., Han D., Weng T. On Stablecoin: Ecosystem, architecture, mechanism and applicability as payment method. *Computer Standards & Interfaces*, 2023, vol. 87. DOI: <https://doi.org/10.1016/j.csi.2023.103747>

5. Popkova E.G., Bogoviz A.V., Ekimova K.V. Will Russia Become a Blueprint for Emerging Nations 'High-Tech Reforms? Evidence from a 26-Countries dataset. *International Journal of Innovation Studies*, 2023. DOI: <https://doi.org/10.1016/j.ijis.2023.05.001>
6. Amini H., Bichuch M., Feinstein Z. Decentralized payment clearing using blockchain and optimal bidding. *European Journal of Operational Research*, 2022, vol. 309, issue 1, pp. 409-420. ISSN: 0377-2217, DOI: <https://doi.org/10.1016/j.ejor.2022.12.024>
7. Park J., Kwon O. Stablecoins: Legal restrictions theory and monetary policy. *Economics Letters*, 2023, vol. 226. DOI: <https://doi.org/10.1016/j.econlet.2023.111107>
8. Zhao J., Miao J. Is Bitcoin used to evade financial sanction? *Finance Research Letters*, 2023, vol. 55, part B. DOI: <https://doi.org/10.1016/j.frl.2023.104005>
9. Bojaj M., Muhadinovic M., Bracanovic A. Forecasting macroeconomic effects of stablecoin adoption: A Bayesian approach. *Economic Modelling*, 2022, vol. 109. DOI: <https://doi.org/10.1016/j.econmod.2022.105792>
10. Javaid M., Haleem A., Singh R. A review of Blockchain Technology applications for financial services. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 2022, vol. 2, issue 3. DOI: <https://doi.org/10.1016/j.tbench.2022.100073>.
11. Satoshi N. (2008) Bitcoin: A Peer-to-Peer Electronic Cash System. URL: <https://bitcoin.org/bitcoin.pdf>
12. Kabra N., Bhattacharya P., Tanwar S. MudraChain: Blockchain-based framework for automated cheque clearance in financial institutions. *Future Generation Computer Systems*, 2020, vol. 102, pp. 574-587. DOI: <https://doi.org/10.1016/j.future.2019.08.035>.
13. González-Gallego N., Pérez-Cárceles M. Cryptocurrencies and illicit practices: The role of governance. *Economic Analysis and Policy*, 2021, vol. 72, pp. 203-212. DOI: <https://doi.org/10.1016/j.eap.2021.08.003>.
14. Lyons R, Viswanath-Natraj, G. What keeps stablecoins stable? *Journal of International Money and Finance*, 2023, vol. 131. DOI: <https://doi.org/10.1016/j.jimonfin.2022.102777>.
15. Qiu T., Zhang R., Gao Y. Ripple vs. SWIFT: Transforming Cross Border Remittance Using Blockchain Technology. *Procedia Computer Science*, 2019, vol. 147, pp. 428-434. DOI: <https://doi.org/10.1016/j.procs.2019.01.260>

Список источников:

1. Zharova A., Lloyd I. An examination of the experience of cryptocurrency use in Russia. In search of better practice // *Computer Law & Security Review*. 2018, Vol. 34, Issue 6, P. 1300-1313. p: <https://doi.org/10.1016/j.clsr.2018.09.004>.
2. Son B., Jang H. Economics of blockchain-based securities settlement // *Research in International Business and Finance*. 2023. Vol. 64. DOI: <https://doi.org/10.1016/j.ribaf.2022.101842>.
3. Shin D., Rice J. Cryptocurrency: A panacea for economic growth and sustainability? A critical review of crypto innovation // *Telematics and Informatics*. 2022. Vol. 71. DOI: <https://doi.org/10.1016/j.tele.2022.101830>
4. Li D., Han D., Weng T. On Stablecoin: Ecosystem, architecture, mechanism and applicability as payment method // *Computer Standards & Interfaces*. 2023. Vol. 87. DOI: <https://doi.org/10.1016/j.csi.2023.103747>
5. Popkova E.G., Bogoviz A.V., Ekimova K.V. Will Russia Become a Blueprint for Emerging Nations 'High-Tech Reforms? Evidence from a 26-Countries dataset // *International Journal of Innovation Studies*. 2023. DOI: <https://doi.org/10.1016/j.ijis.2023.05.001>

6. Amini H., Bichuch M., Feinstein Z. Decentralized payment clearing using blockchain and optimal bidding // *European Journal of Operational Research*. 2022. Vol. 309, Issue 1. P. 409-420. ISSN: 0377-2217, DOI: <https://doi.org/10.1016/j.ejor.2022.12.024>
7. Park J., Kwon O. Stablecoins: Legal restrictions theory and monetary policy // *Economics Letters*. 2023. vol. 226. DOI: <https://doi.org/10.1016/j.econlet.2023.111107>
8. Zhao J., Miao J. Is Bitcoin used to evade financial sanction? // *Finance Research Letters*. 2023. Vol. 55, Part B. DOI: <https://doi.org/10.1016/j.frl.2023.104005>
9. Bojaj M., Muhadinovic M., Bracanovic A. Forecasting macroeconomic effects of stablecoin adoption: A Bayesian approach // *Economic Modelling*. 2022. Vol. 109. DOI: <https://doi.org/10.1016/j.econmod.2022.105792>
10. Javaid M., Haleem A., Singh R. A review of Blockchain Technology applications for financial services // *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*. 2022. Vol. 2, Issue 3. DOI: <https://doi.org/10.1016/j.tbench.2022.100073>.
11. Satoshi N. Bitcoin: A Peer-to-Peer Electronic Cash System. 2008. URL: <https://bitcoin.org/bitcoin.pdf>
12. Kabra N., Bhattacharya P., Tanwar S. MudraChain: Blockchain-based framework for automated cheque clearance in financial institutions // *Future Generation Computer Systems*. 2020. Vol. 102. P. 574-587. DOI: <https://doi.org/10.1016/j.future.2019.08.035>.
13. González-Gallego N., Pérez-Cárceles M. Cryptocurrencies and illicit practices: The role of governance // *Economic Analysis and Policy*. 2021. Vol. 72. P. 203-212. DOI: <https://doi.org/10.1016/j.eap.2021.08.003>.
14. Lyons R, Viswanath-Natraj, G. What keeps stablecoins stable? // *Journal of International Money and Finance*. 2023. Vol. 131. DOI: <https://doi.org/10.1016/j.jimonfin.2022.102777>.
15. Qiu T., Zhang R., Gao Y. Ripple vs. SWIFT: Transforming Cross Border Remittance Using Blockchain Technology // *Procedia Computer Science*. 2019. Vol. 147. P. 428-434. DOI: <https://doi.org/10.1016/j.procs.2019.01.260>

Submitted: 28 May 2023

Accepted: 29 June 2023

Published: 30 June 2023

