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APPROACHES TO LEGAL REGULATION OF THE USE OF DIGITAL CURRENCIES: RISKS OR ECONOMIC POTENTIAL

ABORDAGENS PARA A REGULAÇÃO LEGAL DO USO DE MOEDAS DIGITAIS: RISCOS OU POTENCIAL ECONÔMICO

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RESUMO

Objetivo: *Nas últimas décadas, a tecnologia da informação tornou-se um estimulador muito significativo do crescimento econômico. A introdução da tecnologia blockchain no setor financeiro e sua adaptação para criptomoedas definitivamente demonstram resultados positivos e negativos, que foram discutidos em inúmeras publicações.*

Metodologia: *Os autores utilizam um conjunto de métodos de investigação científica geral e privada: uma análise jurídica comparativa de literatura científica, documentos jurídicos e outros sobre o tema de investigação.*

Resultados: *Os autores analisam a essência dos sistemas de contabilidade distribuída e moedas digitais, as perspectivas que se abrem quando são utilizados, destacam os modelos de uso dessa tecnologia inovadora e as possibilidades de sincronização das relações jurídicas que surgem neste caso, incluindo, entre outras*

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coisas, o reconhecimento de moedas digitais privadas como meio de pagamento e a tomada de decisões sobre a emissão de moedas digitais estatais.

Contribuição: *O artigo chama a atenção para o problema da influência das moedas digitais na estabilidade financeira de ambos os estados individuais e, devido ao seu uso generalizado, em escala global*

Palavras-chave: *Potencial Econômico; Estabilidade Financeira; Sistemas de Ledger Distribuídos; Direito.*

ABSTRACT

Objective: In recent decades, information technology has become a very significant stimulator of economic growth. The introduction of blockchain technology in the financial sector and its adaptation for cryptocurrencies definitely demonstrate both positive and negative results, which have been discussed in numerous publications.

Methodology: The authors use a set of general scientific and private scientific research methods: a comparative legal analysis of scientific literature, legal and other documents on the research topic.

Results: The authors analyze the essence of distributed ledger systems and digital currencies, the prospects that open up when they are used, highlight the models for using this innovative technology and the possibilities for synchronizing the legal relations that arise in this case, including, among other things, the recognition of private digital currencies as a means of payment and making decisions on the issuance of state digital currencies.

Contribution: The article pays attention to the problem of the influence of digital currencies on the financial stability of both individual states and, due to their widespread use, on a global scale.

Keywords: Economic Potential; Financial Stability; Distributed Ledger Systems; Law.

1 INTRODUCTION

Information technology has become an objective reality over the past few years. It has penetrated into all spheres of public life, and the economic development of a country at the present time simply cannot be imagined without its application. Among such end-to-end innovative technologies as artificial intelligence technologies, big data, special attention is paid to the possibility of using distributed ledger systems

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and its block type, called blockchain, which is inextricably linked in the economic sphere with the concept of digital currencies or cryptocurrencies.

Despite the risks associated with the use of digital currencies, interest among investors is only increasing, so state-owned banks are forced to introduce measures that will reduce possible negative consequences both for individual citizens and for the financial stability of the entire economy of the country.

Currently, the main trends in the development of legal regulation and the establishment of the legal regime of digital currencies are developing within the framework of the concepts of creating cryptocurrencies of central banks. However, this imposes additional responsibility on state-owned banks, as the result of which transformation of digital currencies will depend entirely on their actions.

2 LITERATURE REVIEW

In the course of an extended discussion, most scientists and practitioners express the opinion that distributed ledger systems mediate “rapid progress in traditional centralized systems shifting the technological horizon of money and payments” (Arner, Auer, Frost, 2020), moreover, the expert (Shin, 2019) confirmed the effectiveness of integrating such systems into the payment infrastructure and the possibility of government oversight, which was one of the main problems for their implementation. In addition, a fairly wide range of scientists and researchers expressed their opinion about the properties and benefits of using distributed ledger systems (Brainard, 2016; Cermeno, 2016; Hancock, Vaizey, 2017; Menon, 2017).

Some researchers (Boguslavsky et al., 2021; Xiao, et al., 2021) link the increased interest in the use of innovative technologies in general and, in particular, digital currencies, with a pandemic. It is, however, worth noting that there is still no consensus on the concept of "cryptocurrency" or "digital currency" (Arner, Auer, Frost, 2020; Giudici, Milne, Vinogradov, 2020; Kochergin, 2017). In addition, scientists (Nishibe, 2020) analyze aspects of the influence of cryptocurrencies on the ecological and cultural environment, i.e. on the development of society as a whole.

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However, the statistics inexorably speak of a constant increase in the turnover of cryptocurrencies in the world (Barkai, Shushi, Yosef, 2021; Koki, Leonardos, Piliouras, 2022; Zhang et al., 2021), including in countries where public authorities directly or indirectly have a negative attitude towards such financial transactions, which is primarily associated with the risks of using digital currencies, causing great concern and hindering their full implementation (Barone, Masciandaro, 2019; Fantazzini, Zimin, 2020; Maciel, 2021; Masharsky, Skvortsov, 2022). From an economic point of view, it seems necessary to assess not only the risks, but also the opportunities at hand, since historically the acceleration of commodity-money turnover has contributed to the economic growth of states.

Due to the cross-border nature of economic relations, representatives of international organizations and central banks (Central bank digital currencies: Executive summary, 2021) have recognized the significant impact of the circulation of cryptocurrencies in the world and expressed particular concern in connection with the preservation of financial stability.

The emergence of the concepts of central bank digital currencies looks absolutely logical in this light, however, the process of introducing such currencies will cause a structural transformation of the entire financial system, both national and global, and, therefore, will require an assessment of economic effects and risk leveling (Coelho et al., 2019; Cunha et al., 2021; Gurinovich et al., 2020; Vaz, Brown, 2020).

3 METHODS

The authors used a set of general scientific and private scientific research methods: a comparative legal analysis of scientific literature, legal and other documents on the research topic to prove the hypothesis proposed in the article about the need for balanced decisions on the legal regulation of the use of digital currencies, since extreme measures can cause negative consequences in the form of financial losses, both for citizens and states, both in the case of a complete ban on the

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circulation of cryptocurrencies, and, conversely, refusal to regulate these legal relations.

The authors strove for an objective assessment of the risks and opportunities associated with the use of digital currencies, so the article presents the opinions of scientists, officials and practitioners. This is due to the authors suggesting that government regulation is able to mitigate the risks and unleash the economic potential of cryptocurrencies.

4 RESULTS AND DUSCUSSION

Distributed Ledger Systems: The most discussed and used distributed ledger system in the world is the blockchain technology. From a technological point of view, it is presented as a calculation for a block of digital transactions, in other words, “checksums”, often used by computer technologies to confirm the correctness and accuracy of the data entered into the distributed ledger. In the system, each next block with subsequent data contains the “checksum” of the previous block, thus eliminating the possibility of changing the block data in the middle of the block chain. Due to the "distribution" of the system based on "blockchain technology", the risks of data loss are insignificant, since the computer of each user (participant) of the system stores data of a common database of digital transactions, synchronized alternately during the formation of each subsequent block, "scaling" is carried out differently, which is an indisputable advantage of this system.

Currently, a large number of events are taking place with the participation of officials and experts, which raise the urgent issue of implementing distributed ledger systems. Interest in the development and state support of financial technologies based on the use of digital currencies (cryptocurrencies) and blockchain is noted by many heads of central banks. In most cases, the legal regime for the use of this technology is not defined by law, but operations with its use are already being carried out. Representatives of commercial banks talk about its fundamental difference from the traditional transfer system, and also that the use of this system contributed to the

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reflection of the transaction on the recipient's account in real time (Central bank group…, 2020).

The head of the blockchain technology institute at University College (Piselli, Tasca, 2020) classifies the distributed ledger as a new tool that can allow for a restructuring of social relations, corporate governance, economic operations, which is confirmed by some scientists, noting the possibility of “built-in supervision” or automatic monitoring (Arner, Auer, Frost, 2020; Auer, 2019). Researchers from different countries (Brainard, 2016) have expressed the opinion that distributed ledger systems are a new form of information technology that can be considered as a general electronic ledger, which has the following features: immutability of the transaction ledger; fixation in time; in addition, used on the basis of a decentralized peer-to-peer network of unaffiliated participants; through the mechanisms fixed in the agreement, replacing the centralized body; applying digital encryption (cryptography) to prevent changes or distortion of the entered information. Despite the fact that these characteristics have been discussed for more than ten years, most researchers name the listed ones, which became the basis for various classifications of distributed ledger systems: based on availability (Cermeno, 2016), on technology development (Swan, 2015), on the status of subjects technologies (Hancock, Vaizey, 2017), as a “multi-factor matrix” (Genkin, Mikheev, 2018).Therefore, in order to classify distributed ledger systems, several criteria must be taken into account: the method of information transfer and storage, the rights and obligations of participants, possible areas of application and the degree of accessibility, where the latter criterion is decisive. Given the above, the classification of distributed ledger systems can be presented in the form of Table 1.

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Table 1. Classification of distributed ledger systems

Accessibility	Method of transmission and storage of information	Rights and obligations of participants	Possible applications
public	decentralized	identical or admin-defined	in the field of public administration, healthcare, science, education, culture and art
partially limited	centralized	admin-defined	financial instruments, digital rights and other transactions
limited	combined	clear distribution	

Source: Barakina, 2022.

It should be noted that all the listed authors, who classified distributed ledger systems, paid special attention to the risks associated with their use.

Digital Currency or Cryptocurrency

The emergence of digital currencies (cryptocurrencies) caused a wide discussion in the world among scientists and practitioners, however, most of them agreed that their use in the financial sector would increase the availability of payments and settlements, and, consequently, unlock the economic potential of states, as it has been historically proven that a significant reduction in time and financial costs improves economic performance.

The distributed ledger system technology or blockchain technology operates on the basis of protocols (rules) for accounting for transactions with digital currencies or cryptocurrencies. The name "cryptocurrency" or "cryptographic currency" comes from the encryption technology "cryptography", so this name can be considered as a technological one. A scientist (Kochergin, 2017) notes that “virtual currency” (cryptocurrency) is a digital expression of the value of a purchase or sale in digital form

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and can be used as a medium of exchange, a unit of account, a store of value. Experts (Kuznetsov, Yakubov, 2016) recognize cryptocurrency as an electronic means of payment with certain features of transaction accounting. Scientists (Arner, Auer, Frost, 2020), speaking about the varieties of digital currencies - private "stablecoins", define them as cryptocurrencies with values, tied to fiat currencies or other assets. I.I. Kucherov (2014) defines legal tender as a means of payment issued in the established monetary unit and officially introduced by the state, which is accepted at face value on its territory and used in a certain order, noting that “the obligation of legal tender is based on the relevant legal prescriptions.” Researchers (Kurakin et al., 2018) note the difference between cryptocurrencies and the “usual” paper money and electronic money stored in a bank account. Some scientists (Giudici et al., 2020) identify cryptocurrencies as equal to digital financial assets, which, according to the authors, is not accurate, because they are different, albeit related, instruments.

Thus, a digital currency or cryptocurrency can perform various functions. Its main features are clear: digital expression, decentralization and the absence of external administration, which are directly related to blockchain technology, which seems quite natural.

A scientist notes that “cryptocurrencies represent a stage in the development of electronic money” (Dubyansky, 2017). However, as new financial technologies are introduced, it is necessary to distinguish between cryptocurrencies that differ not only in storage technology ad the distribution or decentralization of the ledger has already been mentioned above, but also those created by the payment system as a reward for miners for conducting a digital transaction. The latter causes the most discussion, since the issue of funds over the past few decades, and in some countries for centuries, has been handled exclusively by central banks. Digital transactions using digital currencies (cryptocurrencies) are carried out in a one-level or peer-to-peer network, whereas previously transactions were carried out in a two- or three-level network with a large number of intermediaries, which, subsequently, led to an increase in time and costs of transactions. In addition to those already listed, there are a number of other differences presented in Table 2.

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Table 2. Electronic money and digital currencies

Specifications	Electronic money	Digital currencies
Storage method	electronic media	digital program
Issuer	central bank	Blockchain system (distributed system)
Need for infrastructure (intermediaries)	Two- or three-layer network (presence of infrastructure entities)	peer-to-peer network (without intermediaries)
Transaction processing	centralized	decentralized
Circulation	without restrictions within the payment system	within the blockchain system
Currency	state currency	universal

Source: Barakina, 2022

Thus, the definition of the concept of "digital currency" (cryptocurrency), according to the authors, depends on the functions or purposes of its use. In this paper, digital currency (cryptocurrency) is considered in regards to the prospects for its use in the national payment system. The analysis shows that digital currency (cryptocurrency) is indeed the next stage in the development of electronic money, and, therefore, money transfers and payments - a digital form of money. A digital currency (cryptocurrency) is a digital code that can be used as a medium of exchange, a technological unit of calculation, or an expression of value. One of the main differences between digital currency and electronic money is that electronic money is denominated in a specific fiat currency, used for electronic non-cash transfer of value, and digital currency is a digital code expressed in certain technological units. This can be considered an additional advantage of digital currency, since there is no need for conversion when making transfers. At the same time this is an disadvantage and the main barrier to its use, since such non-fiat currencies are not recognized by most states as legal tender.

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Benefits of Using Cryptocurrency: Issues related to the use of cryptocurrency are currently causing a wide discussion among scientists and practitioners not only in Russia, but also globally. The benefits of using cryptocurrencies can be roughly divided into two categories. The first category includes those related to citizens and legal entities (businesses), and the second category refers to countries as a whole, including reputational risks of national jurisdictions.

The benefits for the business community associated with the use of cryptocurrencies arise as a result of the principles of the blockchain platform:

- the distributed ledger does not contain data, access to which is limited in accordance with the law.

- the legal significance of digital transactions carried out through the maintenance of a distributed ledger;

- no technological need for intermediaries.

- use of smart contract technology.

- scaling, i.e., storage and accounting of digital transactions for each participant of the blockchain platform;

- the absence of a single point of failure guarantees the safety of data on completed digital transactions, i.e., increased security requirements;

- distributed accounting of resources required to support the operation of the platform.

Consequently, the existing advantages of using cryptocurrency for the business community are acceleration and cost reduction in the implementation of mutual settlements and payments, achieved through the use of blockchain technology. The blockchain platform is actually a payment system created on the basis of a distributed ledger system and data structure. According to the forecasts of the founder of the Blockchain.ru project (Grigorieva, Alekseevskikh, 2018), after switching to blockchain technology, credit institutions can save:

- on the processing of counter transactions, product structuring, account management, audit and financial control - approximately 60-75%,

- in general, about 50% on operating activities,

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- when transferring all processes to the new technology, savings can be increased to up to 80%.

Participants in distributed ledger systems have equal rights to maintain a distributed ledger. Intermediaries in the implementation of a money transfer are not provided for in this technology. The absence of intermediaries helps to reduce material and time costs of digital transactions.

The distributed ledger system provides for a reward system for validators for processing a digital transaction, calculated in digital currency (cryptocurrency). When calculating the reward for validators, the cost of computations performed as part of a digital transaction, as well as a percentage for the amount of data entered in the distributed ledger, should be taken into account. Abroad (for example, Poland, Czech Republic, Singapore, New Zealand) the activities of miners are considered as entrepreneurial activities.

In addition, scientists (Barkai et al., 2021; Koki et al., 2022) discuss the development models of some cryptocurrencies in terms of the probability of obtaining profit from the circulation of cryptocurrencies. At the same time, some experts (Zhang et al., 2021) draw the attention of investors to the fact that the use of cryptocurrencies is currently characterized not only by high profits, but also by the risk of financial losses. This indicates the systematic integration of the crypto market into the investment market and the interest in them from investors.

Some of the benefits of using cryptocurrencies have become more pronounced during the pandemic, for example, researchers (Boguslavsky et al., 2021) called cryptocurrencies an “epidemiologically safe means of transaction” and conducted a survey of 32,115 respondents from 44 countries, the results of which showed that 14 .7% of them carried out cryptocurrency settlements in 2020-2021. This shows that it will be difficult for state authorities to stop the use of cryptocurrency. In addition, research economists (Ghorbel, Jeribi, 2021) have identified this diversification for cryptocurrency investors as an advantage in times of crisis, but did not recognize it as a “safe haven”.

The benefits of using cryptocurrencies for the state wholly follow from the opportunities received by the business community, which have additional sources of

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income and pay more taxes to the budget. Accelerating and achieving greater availability of settlements and payments in the state stimulates the development of the economy, and a successfully growing economy attracts new investments.

Thus, there is an incentive for the development of national jurisdiction as a whole due to related areas of improving the cryptocurrency market, and the introduction of new financial technologies should be considered as an impetus for the transition to a digital economy. In addition, commodity-money turnover is accelerating, and as a result, the state has the opportunity to increase its economic potential.

However, at the moment, the use of digital currencies (cryptocurrencies) carries risks for both the business community and the state. Some studies (Smutny et al., 2021) show that the risks of financial losses, youth and high volatility of crypto-currencies do not scare off the business community, but, on the contrary, attract new investors more and more every year, despite the fact that scientists (Luo et al., 2021) seem to conclude that the main problem of cryptocurrencies is the potential uncertainty in assessing their risks and profitability. In addition, economists (Fantazzini, Zimin, 2020; Maciel, 2021), after analyzing a large number of development models, single out the most probable risks called “Value-at-Risk (VaR) and expected deficit (ES)”, market risk for a portfolio of cryptocurrencies and credit risk and make attempts to predict them, using amongst other tools machine learning algorithms.

From a regulatory perspective, many of the risks associated with cryptocurrencies echo those posed by new financial products and technologies of the past: the risk of untested business models, the potential for abuse and fraud, the lack of a clear and shared understanding, the uncertainty of an unformed regulatory environment. At the same time, key aspects of the field of payments using cryptocurrencies differ in functionality from past Internet systems and platforms. Peer-to-peer transaction authentication was created to allow coin holders to bypass the institutional intermediaries that should serve as the main security system in the global mode of financial markets. The potential for mutual anonymity among counterparties can disrupt know-your-customer procedures (denoted in regulations in other countries as KYC) and identification of customers on which the existing modes of its application depend. The online ecosystem surrounding cryptocurrencies opens up new cyber and

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insider threat vulnerabilities, while the iterative nature of the distributed ledger that underpins cryptocurrencies prevents reversibility when a fraudulent or illegal transaction takes place. Finally, the lack of built-in geographic restrictions makes it difficult to decide which jurisdiction or jurisdictions could potentially govern each underlying activity. The main areas of legal regulation of the use of cryptocurrencies were proposed by scientists (Lapina et al., 2020): consumer and market protection; maintaining the integrity of the financial system; and ensuring access to the use of cryptocurrency as a financial instrument.

Regulators must address technically complex problems in a short time frame and in the face of often seemingly unquantifiable risks. After an initial period of relative restraint, financial regulators are now reacting more aggressively to the emerging risks and potential rewards associated with cryptocurrencies, ICOs, and the distributed ledger. Recent actions by regulators in some countries to assert power in the cryptocurrency markets underline the legal and regulatory uncertainty given. Some authors associate the use of cryptocurrencies with the implementation of "sovereign credit risk" (Bajaj et al., 2022).

It is possible to mitigate risks when using digital currencies (cryptocurrencies) by initially creating a legislative framework. Scholars (Arner, Auer, Frost, 2020) point out that one possible option from a regulatory perspective is to build supervisory requirements into the stablecoin systems themselves, allowing for “built-in supervision,” which is automated monitoring (Auer, 2019), i.e. performing the supervisory function of the regulator (Coelho et al., 2019). Legal regulation should be aimed at protecting the rights of participants in payment systems based on a distributed ledger. Their main rights and obligations in making settlements and payments in this case can be comparable with the rights and obligations of the rights and obligations of the subjects of payment systems and their customers, using electronic means of payment. However, it should be taken into account that some problems in connection with the infringement of the rights of customers arising from the de facto subordinating relationship of the payment system operator and its customers.

In general, reducing the risks of using cryptocurrencies should be achieved through the formation of correct legal regulation, and not a ban. For example, a ban on

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exchange transactions with digital currencies (cryptocurrencies) ccould only increase reputational risks. According to experts (Kuznetsov et al., 2017), such a ban would provoke the withdrawal of digital currencies (cryptocurrencies) into the shadow market, the development of “grey network exchangers”, the control over whose activities will be difficult for the state to implement.

In addition, scientists (Haq et al., 2021) identify several aspects that directly affect the likelihood of realizing the risks associated with the use of cryptocurrencies: firstly, risks increase with the uncertainty of economic policy and decision-making by government authorities; secondly, the decisions of regulators in the field of combating stock market volatility; and thirdly, the use of currency administration tools in the crypto market.

V.K. Shaidullina (2018) notes that the state, when developing legal regulation, should focus on creating the following: a taxation system for settlements using crypto-currency, a system of state supervision that prevents the implementation of FET/CFT operations and an internal control system for operators using crypto-currency and/or carrying out exchange operations with cryptocurrency, such as keeping accounting journals of settlement transactions, conducting KYC operations, etc.

Scientists (Barone, Masciandaro, 2019; Masharsky, Skvortsov, 2022), analyzing the development trends of cryptocurrencies, also discuss the high risks of money laundering, which are a significant factor complicating the implementation of their status as non-fiat currencies.

These measures, according to the authors, should mitigate the risks arising from the use of digital currencies (cryptocurrencies), including reputational risks of national jurisdiction, since the possibility of legal use of digital currencies (cryptocurrencies) will increase investment interests in our country and, therefore, will contribute to transition to a digital economy, as is already happening in Japan, Australia and other countries.

Currently, according to the authors, there are two approaches to the use of digital currencies (cryptocurrencies), in the implementation of which the risks for both the business community and the state are sufficiently leveled.

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Approach 1. Digital currency (cryptocurrency) as a technological unit. This approach has been established by the legislation of the Russian Federation and is a kind of compromise for the legitimate use of cryptocurrencies, taking into account mitigation of risks.

According to the authors, the consolidation of the concept of "cryptocurrency" or "digital currency" within the national payment system of the Russian Federation, as a currency that is created and used within closed blockchain systems or payment systems created on the basis of distributed ledger systems, as a technological unit for conducting digital transactions and rewarding validators who form (consensus) this distributed ledger, allows you to legally transfer funds using its advantages, such as accelerating and achieving their greater availability of mutual settlements and payments, an additional source of income from validation, the introduction of new financial business technologies associated with distributed ledger systems, and as a result, will have a positive impact on the development of national jurisdiction, new financial technologies accompanying the development of the financial services market. Among other things, it would contribute to the development of the financial market of the Russian Federation, the effective operation of which mediates economic growth in the country and, ultimately, improves the quality of life of citizens, which is the main goal of the current policy and most state programs of the Russian Federation.

Moreover, such consolidation of the legal status eliminates the risks associated with its use, since uncertainty in the legislative basis for the use of cryptocurrencies or digital currencies, as well as its absence, leads to a slowdown in the process of implementation and development of distributed ledger systems.

Thus, solidifying the legal status of "digital currency" as a technological unit of account became the first step in its introduction into the national payment system and contributed to the transition of the national economy of our country to the digital economy.

Approach 2. Creation of a single state digital currency (cryptocurrency) or, as indicated in international documents, central bank digital currencies. This approach has been recommended by international organizations over the past few years, including the Basel Committee and others, and is at various stages of

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development in many countries of the world, examples of which are presented by the authors in Figure 1.

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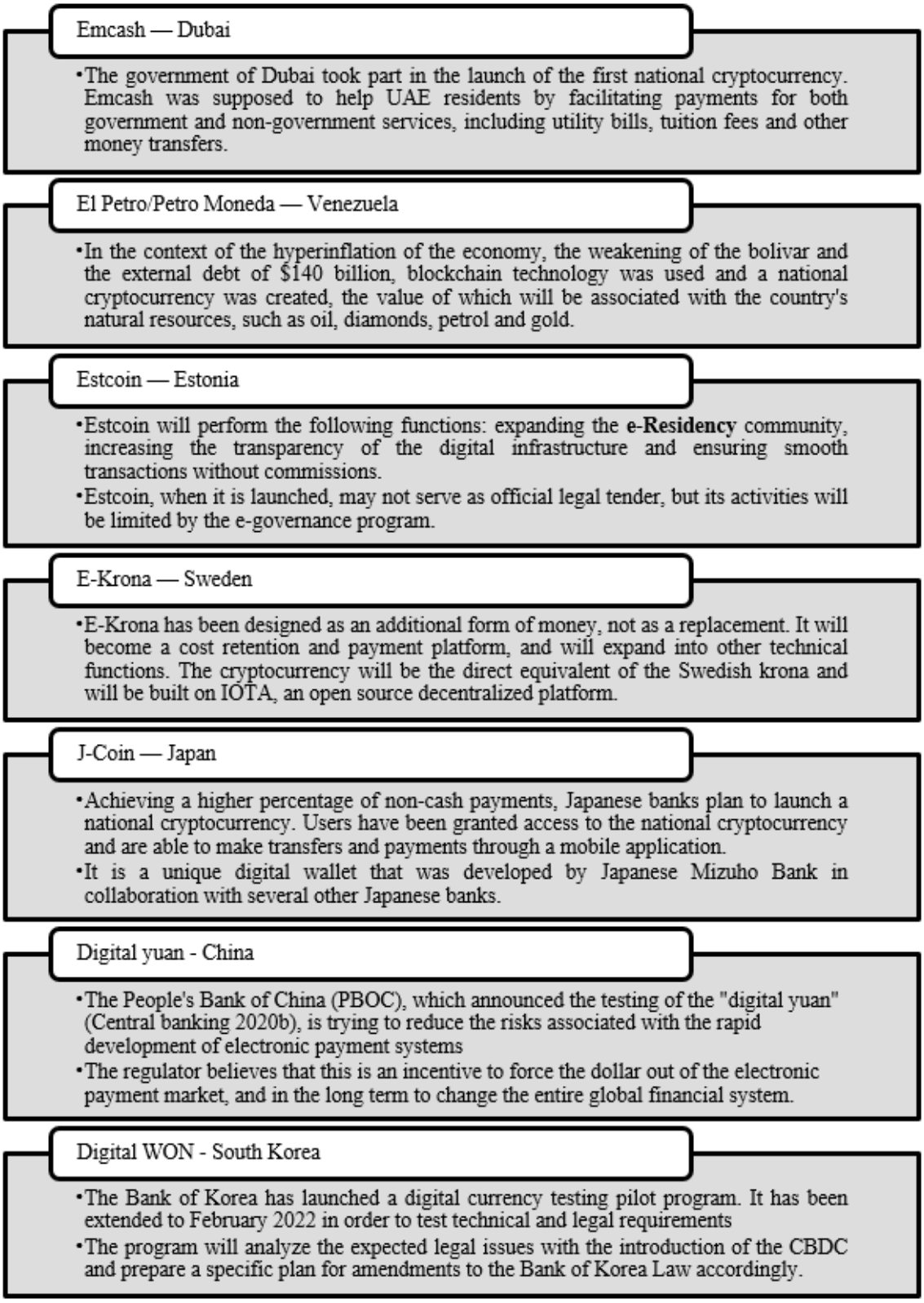
Figure 1. Examples of countries developing national digital currencies



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Source: compiled by the authors based on sources (Digital ruble…, 2020; Khatri, 2020; Six countries that create national cryptocurrencies, 2020)

Figure 1 shows some examples, but according to the report of the Bank for International Settlements (Auer et al., 2020; Shin, 2019) many countries around the world are known to be developing in this area and the Covid-19 pandemic has accelerated work on central bank digital currencies in some countries: in the United States, early versions of congressional fiscal stimulus bills included references to the "digital dollar" as a means of quickly making payments from the government to a person, and as an alternative to credit transfers and slow and expensive checks; in the Netherlands, the central bank stressed that the pandemic highlights the need to back up private money; in Sweden, testing of the e-krona project continues even amid the anti-crisis measures of the central bank. The Bank of Russia is also considering the possibility of introducing a digital ruble, having assessed its role in the report for public consultations (Digital ruble…, 2020).

Some researchers (Coelho et al., 2019; Cunha et al., 2021), after analyzing the opinions of representatives of central banks from different countries, have come to the conclusion that the benefits and risks of using cryptocurrencies of central banks depend on specific measures and decisions of regulators. Therefore, when implementing certain concepts in the field of issuing state digital currencies or cryptocurrencies of central banks, the mechanisms for implementing the adopted economic decisions should be precisely verified. Scientists (Vaz, Brown, 2020) see the reasons for the emergence of this approach to the use of digital currencies as the negative impact on the possibilities of fiscal and monetary policy expected by the authorities of countries, which is confirmed by numerous statements of representatives of international organizations of national banks (Central bank digital currencies: Financial stability implications, 2021). Hence, the risks of using cryptocurrencies are closely related to risk-based supervision, as well as the algorithm for identifying, analyzing, assessing, predicting and reducing risks (Gurinovich et al., 2020) developed by the regulator.

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In general, there is growing concern in the global community about financial stability, both nationally and globally, due to the increase in the use of digital currencies in all countries, including in states where this phenomenon has been declared illegal. In its report, the Bank for International Settlements (Central bank digital currencies: Financial stability implications, 2021) calls on national banks to maintain the safety and stability of financial systems. In addition, he draws attention to the need for a thorough study of the introduction of central bank digital currencies (hereinafter referred to as CBDC), as well as the obligation to adapt the existing financial system and flexibility in the use of precautionary measures, because the consequences of the introduction of CBDC depend entirely on the actions of the regulator. In a positive scenario, changes in the structure of the financial system of the country when introducing CBDC will contribute to increasing economic potential and financial stability. However, the regulator needs to accurately define such important parameters as the design of the CBDC, the size settings of the underlying system, its scope, as well as the possibility of interaction between jurisdictions due to the cross-border nature of these relations. According to the Bank for International Settlements, "the consequences depend on the degree of compensating increase in lending to the real sector of the economy by non-bank financial intermediaries. CBDCs and some new forms of digital money could also increase the hidden risk of systemic banking. This risk is mitigated in the current system through effective banking regulation, deposit insurance and settlement mechanisms" (Central bank digital currencies: Financial stability implications, 2021).

Thus, the introduction of CBDC can become a trigger for significant development and structural changes in the financial system, not only at the national level, but also globally. However, the successful implementation of this transformation will require painstaking development of each element of the future financial system using CBDC. To mitigate the risks of using CBDC, it is absolutely reasonable to use experimental platforms that will allow working out scenarios and economic effects from the introduction of CBDC and maintaining the financial stability of the state.

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5 FINAL CONSIDERATIONS

Distributed ledger systems have great economic potential for use in financial transactions, and the use of digital currencies or cryptocurrencies, despite the significant risks of financial losses, peaks the interest of economic entities and drives an increase in the turnover of cryptocurrencies.

Risks at the state level, for example, the use of cryptocurrencies in operations related to the laundering of proceeds of crime, can be reduced to the minimum possible values through procedures such as compliance control, which are currently widely used and are a global practice, as well as “know your client."

The development of CBDC concepts is associated with the need, firstly, to mitigate the risks of using private digital currencies, since it allows for greater state control, and secondly, to maintain central banks’ monopoly to issue currency, on which the financial transformation of economic relations completely depends, as well as the most important aspect - maintaining financial stability.

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