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DIGITAL PAYMENT SYSTEM OF THE REPUBLIC OF KAZAKHSTAN: RISKS AND PROSPECTS

Abstract

The development of payment systems is a continuous process that includes updating and updating all its elements and processes. In this article, the authors considered the issues of digitalization of the payment system of the Republic of Kazakhstan, and in particular, the possibility of creating and implementing a digital currency of the National Bank of the Republic of Kazakhstan. This measure will allow Kazakhstan to join the world experience in the use of crypto-technologies and digital assets. The key task is to be the first within the member countries of the Eurasian Economic Union.The history of digital money began with the invention of the Internet. In the early days, it was difficult to get the population used to using digital money. However, as people get used to technology, and digital technologies themselves become more secure and reliable, more and more users are ready to give preference to the use of digital money. As part of the study, the authors analyzed foreign experience in the creation and implementation of digital currencies, assessed the possible risks and prospects of this event. It is worth noting that Kazakhstan in 2020 for the first time got into the rating of the countries of the world in terms of cybersecurity. The initiative to digitalize the payment system and, in particular, payment technologies, is already giving a greater role to an effective cybersecurity strategy. Currently, the National Bank of the Republic of Kazakhstan, as part of the implementation of the program for the development of the national payment system until 2025, has already implemented a pilot project "Digital Tenge". The authors carried out a comparative analysis of the specific features and key differences between the digital tenge and other forms of the national currency of the Republic of Kazakhstan.

Key words: payment system, currency, digitalization, cyberattack, digital money, cybersecurity, payments.

Introduction

The relevance of the issue of developing a digital payment system since the advent of digital currencies is undeniable. Its safety, security and legal nature still remains unexplained. In addition to Kazakhstan, the launch of a national digital currency is being considered in China, Japan, Ecuador, the Netherlands and Russia. Digital currency is a form of fiat money that exists in electronic format. At the same time, it is important to note that the digital currency is not a replacement for cash and non-cash money, but is planned to be used in parallel, as a third form of the national currency.

The National Bank of the Republic of Kazakhstan intends to implement a pilot project by the end of 2021 to introduce the Digital Currency of the Central Bank, which is a new round in the evolution of money. In May this year, the National Bank of the Republic of Kazakhstan presented a research report to the public, which revealed the prospect of introducing the digital tenge and its possibilities [1]. The development of digital currency will lead to the development of a digital payment system.

Digital money and its rate will be directly linked to the national currency. The central bank will act as the issuer and consumer guarantor. The innovativeness of the technological perspective will allow the use of smart contracts. The digital tenge is not a cryptocurrency and it is wrong to designate it as a crypto tenge. This is digital money of the central bank imitated on the new technical infrastructure.

Main provisions

In the future, the use of digital money should increase the stability of the payment system. In the process of using digital money, much will depend on how the issue will be carried out and how this professional financial community and the population of the country will perceive it.

When the National Bank provides, for the transfer and storage of digital tenge, a high level of security, as well as the continuous operation of the system infrastructure, one of the positive aspects of the digital tenge can be identified as a separate classification and increased traceability of government spending, which in turn will affect the reduction of corruption.

Materials and methods

As part of the study, source materials were used, such as regulatory legal acts of the Republic of Kazakhstan, as well as policy documents and concepts in the field of implementation and use of digital currencies.

In the process of research, the authors of the article successfully applied such methods as theoretical, logical and professional thinking. The authors took study, analysis, synthesis and others as the basis for drawing conclusions.

Literature review

Along with this, studies of domestic and foreign authors in the field of digitalization and digital transformation of payment systems are considered.

In particular, studies of the following authors Ryan Todd, Raphael Auer, Todd Keister, Cyril Monnet, Stephen Williamson, Tommaso Mancini Griffoli and others have been studied. This study allowed the authors to identify a common understanding of the term “digital tenge” and consider different interpretations of this concept.

Results

The interest of researchers in digital currencies is quickly moving from theoretical discussions to the implementation of pilot projects around the world. Thus, according to a survey by the BIS Bank for International Settlements (BIS), in 2021, out of 65 central banks participating in the survey, 86% are exploring digital currencies, of which 60% are at the experimentation stage, and 18% are already in the process of implementing pilot projects [2].

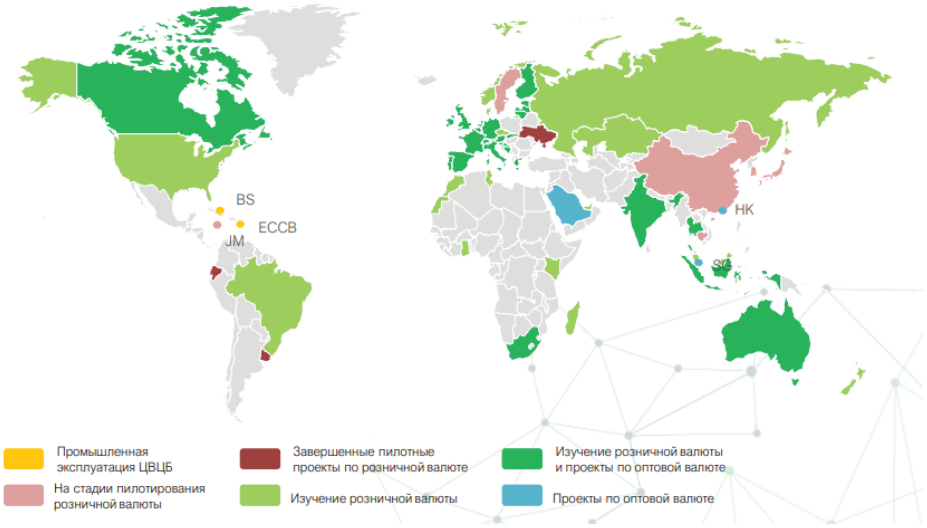

Figure 1 – Stages of study and implementation of digital currencies around the world

Note – Based on source data [3].

To determine the prospects for the introduction of digital currency in Kazakhstan, it is necessary to analyze the foreign experience of leading countries and the results of the launch of digital currency.

Consider the example of Singapore and the features of the launch of the digital Singapore dollar. The Monetary Authority of Singapore has set itself the goal of developing and implementing a digital currency based on the blockchain network, taking into account the principles of open architecture, open connectivity and interoperability with other networks, in order to ensure ease of integration in these networks for seamless end-to-end transaction processing and support for wholesale interbank and corporate payments. . The key goal of introducing a digital currency in Singapore was the ability to replace the SWIFT system and give a qualitative breakthrough in interbank interaction.

The interesting thing is that developing the digital Singapore dollar, the government agency collaborated with a wide range of partners, in particular, with the leading representatives of the financial industry in the world (Bank of America, Merrill Lynch, Crédit Suisse, DBS Bank, HSBC, JP Morgan, Mitsubishi UFJ Financial Group, OCBC, R3, Singapore Exchange, United Overseas Bank), technology partners (BCS Information Systems), and overseas financial regulators (Bank of Canada).

The Russian Federation has already begun testing the digital ruble. Let's take a closer look at the stages of introducing and creating a digital currency.

The architecture of the platform developed by the Central Bank is hybrid, that is, it includes components of a centralized system and distributed registries. Cryptocurrency, despite the use of blockchain and encryption algorithms, the digital ruble is not, however, the formation of a legal framework for regulating the circulation of cryptocurrencies in Russia is one of the tasks that the Central Bank and the Government are working on solving. The use of cryptographic protection and encryption ensures a high level of security for all payments in digital currency.

The Central Bank platform allows the client to open a wallet on it via the Internet using the services of one of the banks connected to the platform. After that, the owner of the wallet can make transactions with the funds contained in it using the mobile application of any other financial institution that is part of the system.

The digital ruble, according to the concept of the Central Bank, has the form of a unique digital code. Operations with the national Russian virtual currency represent the movement of the corresponding digital code from one wallet to another.

For example, the Chinese Digital Yuan (e-CNY) is "at the most advanced stage" of all existing central bank digital currency (CBDC) projects, of which pilot projects are underway in 10 regions and were used for the Beijing Winter Olympics. Experts estimate that the total size of China's digital currency could reach 1 trillion yuan ($140 billion) in the coming years, equivalent to the digitization of about one-eighth of China's cash. International consumer brands including McDonald's, Starbucks, Subway also took part in the e-CNY trial.

Internationally, it has long been predicted that China will "become the first major country" to launch a CBDC. CNY currently accounts for roughly 4% of global transactions, making the Chinese CBDC one of the potential major currency CBDCs with global implications.

If China's CBDC practices and standards affect international practices, they may affect other businesses in the long run. In the short term, the CBDC is likely to affect a wide range of international companies, especially those with a presence in China or those that typically do business with Chinese entities. The legal tender status of e-CNY means that the acceptance of e-CNY will eventually become mandatory in China. If all goes well, e-CNY is likely to become the "cash of the future" in China. The position of E-CNY as legal tender will affect the financial and technology sectors (for example, telecommunications companies and commercial banks developing related products and services), ordinary businesses in other sectors, and the population using fiat currency. Openness in the use of money will be a new scenario that businesses and other stakeholders will face.

Digital currency (digital money) is means of payment that exists exclusively in the form of electronic data. Although they can be used like ordinary money, they have a number of specific features, such as the lack of physical tangibility, while allowing transactions to be made from anywhere and received anywhere in the world (Table 1, p. 61).

The key difference between digital currencies and more well-known cryptocurrencies like bitcoin is their use of blockchain technology. Cryptocurrencies use blockchains to remain decentralized and anonymous, avoiding the need for a supervisory authority. Digital currencies also use blockchain, but operate centrally and require user identification.

Table 1 – Comparative characteristics of 3 forms of national currency

	Cash money	Non-cash money	Digital currency
Money properties			
medium of circulation	+	+	+
stable cost	+	+	+
Form of fiat money	+	+	+
Legal tender	+	+	+
Payment properties			
Reliability and Availability	+	-	+
Interoperability	-	+	+
High security level	-	-	+
Scalability	-	+	+
Confidentiality	+	+	+
Programmability	-	-	+
Immediacy	+	+	+
Note – Compiled by the authors based on source data [3].			

The national digital currency of the Republic of Kazakhstan is a promising form of funds that is an obligation of the National Bank of the Republic of Kazakhstan presented in digital form. The digital tenge will be legal tender, a measure of value and a store of value. To implement the platform, a two-tier architecture is expected, in which financial market participants will provide payment services, and the National Bank will provide the infrastructure. To make a decision on the issuance of a digital tenge, it is necessary to conduct a comprehensive study of the benefits and risks with the definition of the tasks solved by the digital currency, the method of its issue and distribution, the technology used, the impact on monetary policy, financial stability and the payment ecosystem.

Digital money takes into account the disadvantages of cryptocurrency. That is, in fact, they are equated to the exchange rate and, in principle, are equal to paper money. But they are being developed through a new technology related to tokens. Now there are already bills that introduce the concept of «tokenization», which is the basis for digital money. The head of state several times voiced the need to apply various kinds of innovations, for example, in the state. procurement. As for the fears of intensifying fraudulent schemes for withdrawing funds from the country, it is digital money that is primarily aimed at ensuring that they do not disappear without a trace [4].

Discussion

When using digital currency and getting all the positive consequences, such as: reducing corruption, transparency of public financial transactions, ease of use and not being tied to the Internet. It will be an excellent incentive to increase the investment attractiveness of Kazakhstan.

But it is necessary to note the actions necessary for the effective functioning of the digital tenge. Thus, the Government of the Republic of Kazakhstan and the National Bank are faced with the following tasks: launch the exchange, train professional specialists, train business owners and solve a huge number of the following tasks. It is also possible that participants in the shadow economic process will resist the digital tenge. The reasons for this are quite banal, the digital currency will be difficult or almost impossible to use in the shadow economy, and its share in Kazakhstan currently ranges from 15% to 30% [5].

Conclusion

The decision to develop a digital currency is relevant and necessary. The use of digital currency in the future should lead to accelerated economic growth in Kazakhstan and increase the obscurity and speed of money payments. Which will lead to increased stability, due to the transparency of ongoing transactions, an increase in tax revenues, of the entire financial system of Kazakhstan. It also contributes to the receipt of proceeds from crime and their legalization. It will have a tremendous impact on the faster digitalization of the Kazakhstani economy. The digital currency will exclude the

misuse of budget money. That will lead to the preservation of the state and local budgets of different levels.

Undoubtedly, the digital tenge will be a project of the National Bank. Now the department is exploring the possibilities of world-class technology companies. Analyzes the impact on the economy of Kazakhstan: cross-border functionality, issues of exchange for ordinary tenge, and so on.

How quickly and efficiently the ecosystem will be created, so much will be the positive result from the launch and development of digital tenge. But today there is an explanatory note from the regulator stating that all cryptocurrency stories are prohibited in Kazakhstan. What is needed is not a ban, but competent management of emerging tasks in the development of a digital currency. In the future, it will be an excellent assistant or another format in the circulation of the national currency and will contribute to solving problems that paper money is not capable of. For example, it will be much easier and faster to track the misuse of allocated state transfers due to the transparency of financial movements and operations.

Foreign experience shows successful testing and application of digital national currencies in Asia and Europe [6]. China and Singapore and several other countries leading in the field of financial technologies are currently embedding several different projects into the economy, providing the ability to pay with digital money not only through ROS terminals or on the Internet, but even in regions where there is no connection.

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ЦИФРОВАЯ ПЛАТЕЖНАЯ СИСТЕМА РЕСПУБЛИКИ КАЗАХСТАН: РИСКИ И ПЕРСПЕКТИВЫ

Аннотация

Развитие платежных систем – непрерывный процесс, включающий в себя обновление и актуализацию всех его элементов и процессов. В данной статье авторами рассмотрены вопросы цифровизации платежной системы Республики Казахстан, в частности возможность создания и внедрения цифровой валюты Национального банка Республики Казахстан. Данная мера позволит Казахстану присоединиться к мировому опыту использования криптотехнологий и цифровых активов. Ключевая же задача заключается в том, чтобы сделать

это первыми в рамках стран – участниц Евразийского экономического союза. История цифровых денег началась с изобретения Интернета. В первые дни было трудно заставить население использовать цифровые деньги. Однако по мере того, как люди привыкают к технологиям, а сами цифровые технологии становятся более безопасными и надежными, все больше пользователей готовы отдать предпочтение использованию именно цифровых денег. В рамках исследования авторами проанализирован зарубежный опыт создания и внедрения цифровых валют, оценены возможные риски и перспективы данного мероприятия. Стоит отметить, что Казахстан в 2020 г. впервые попал в рейтинг стран мира по кибербезопасности. Инициатива по цифровизации платежной системы и, в частности, платежных технологий придает уже большую роль эффективной стратегии кибербезопасности. В настоящее время Национальным банком Республики Казахстан в рамках реализации программы развития национальной платежной системы до 2025 г. уже внедрен пилотный проект «Цифровой тенге». Авторами проведен сравнительный анализ специфических особенностей и ключевых различий цифрового тенге от иных форм национальной валюты Республики Казахстан.

Ключевые слова: платежная система, валюта, цифровизация, кибератака, цифровые деньги, кибербезопасность, платежи.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ЦИФРЛЫҚ ТӨЛЕМ ЖҮЙЕСІ: ТӘУЕКЕЛДЕР МЕН ПЕРСПЕКТИВАЛАР

Аңдатпа

Төлем жүйелерінің дамуы – оның барлық элементтері мен процестерін жаңартуды және өзектендіруді қамтитын үздіксіз процесс. Бұл мақалада авторлар Қазақстан Республикасының төлем жүйесін цифрландыру мәселелерін, атап айтқанда, Қазақстан Республикасы Ұлттық Банкінің сандық валютасын құру және енгізу мүмкіндігін қарастырды. Бұл шара Қазақстанға крипто-технологиялар мен сандық активтерді пайдаланудың әлемдік тәжірибесіне қосылуға мүмкіндік береді. Негізгі міндет – Еуразиялық экономикалық одаққа қатысушы елдер шеңберінде мұны бірінші болып жасау болып табылады. Сандық ақшаның тарихы интернетті ойлап табудан басталды. Алғашқы күндері халықты сандық ақшаны пайдалануға дағдыландыру қиын болды. Алайда, адамдар технологияға үйреніп, сандық технологиялардың өздері қауіпсіз және сенімді бола бастағанда, көптеген пайдаланушылар сандық ақшаны пайдалануды таңдауға дайын. Зерттеу аясында авторлар сандық валюталарды құру мен енгізудің шетелдік тәжірибесін талдап, осы шараның ықтимал қауіптері мен перспективаларын бағалады. Айта кету керек, Қазақстан 2020 ж. алғаш рет Киберқауіпсіздік бойынша әлем елдерінің рейтингіне кірді. Төлем жүйесін, атап айтқанда, төлем технологияларын цифрландыру жөніндегі бастама Киберқауіпсіздіктің тиімді стратегиясына үлкен рөл береді. Қазіргі уақытта Қазақстан Республикасының Ұлттық Банкі ұлттық төлем жүйесін дамытудың 2025 ж. дейінгі бағдарламасын іске асыру шеңберінде «сандық теңге» пилоттық жобасын енгізді. Авторлар сандық теңгенің Қазақстан Республикасы Ұлттық валютасының өзге нысандарынан ерекшелігі мен негізгі айырмашылықтарына салыстырмалы талдау жүргізді.

Тірек сөздер: төлем жүйесі, валюта, цифрландыру, кибершабуыл, сандық ақша, киберқауіпсіздік, төлемдер.