

ISSN 2518-1483 (Online),
ISSN 2224-5227 (Print)

2019 • 2

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ
ҰЛТТЫҚ ҒЫЛЫМ АКАДЕМИЯСЫНЫҢ

БАЯНДАМАЛАРЫ

ДОКЛАДЫ

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК
РЕСПУБЛИКИ КАЗАХСТАН

REPORTS

OF THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN

PUBLISHED SINCE 1944



ALMATY, NAS RK

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«Қазақстан Республикасы Ұлттық ғылым академиясының баяндамалары»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Меншіктенуші: «Қазақстан Республикасының Ұлттық ғылым академиясы» Республикалық қоғамдық бірлестігі (Алматы қ.)
Қазақстан республикасының Мәдениет пен ақпарат министрлігінің Ақпарат және мұрағат комитетінде 01.06.2006 ж.
берілген №5540-Ж мерзімдік басылым тіркеуіне қойылу туралы куәлік

Мерзімділігі: жылына 6 рет.

Тиражы: 500 дана.

Редакцияның мекенжайы: 050010, Алматы қ., Шевченко көш., 28, 219 бөл., 220, тел.: 272-13-19, 272-13-18,
<http://reports-science.kz/index.php/en/archive>

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Типографияның мекенжайы: «Аруна» ЖК, Алматы қ., Муратбаева көш., 75.

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Доклады Национальной академии наук Республики Казахстан»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Собственник: Республиканское общественное объединение «Национальная академия наук Республики Казахстан» (г. Алматы)

Свидетельство о постановке на учет периодического печатного издания в Комитете информации и архивов Министерства культуры и информации Республики Казахстан №5540-Ж, выданное 01.06.2006 г.

Периодичность: 6 раз в год.

Тираж: 500 экземпляров

Адрес редакции: 050010, г.Алматы, ул.Шевченко, 28, ком.218-220, тел. 272-13-19, 272-13-18

<http://reports-science.kz/index.php/en/archive>

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Owner: RPA "National Academy of Sciences of the Republic of Kazakhstan" (Almaty)

The certificate of registration of a periodic printed publication in the Committee of Information and Archives of the Ministry of Culture and Information of the Republic of Kazakhstan N 5540-Ж, issued 01.06.2006

Periodicity: 6 times a year

Circulation: 500 copies

Editorial address: 28, Shevchenko str., of 219-220, Almaty, 050010, tel. 272-13-19, 272-13-18,

<http://reports-science.kz/index.php/en/archive>

**REPORTS OF THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN**

ISSN 2224-5227

<https://doi.org/10.32014/2019.2518-1483.55>

Volume 2, Number 324 (2019), 165 – 171

UDC 336.7

A.K. SembekovKaraganda Economic University of Kazpotrebsoyuz
amir_sembekov@mail.ru**CRYPTOCURRENCY IN THE MODERN ECONOMY**

Abstract: The article examines the economic content of crypto currency, capitalization issues and basic requirements for investment. The author conducted a comparative analysis of the dynamics of capitalization of the 10 largest crypto currencies for 2017 and 2018. The problems of crypto currencies, the complexity of their implementation and use in the modern economy are identified, the risks that have an impact on the development of the crypto currency market are identified. On the basis of the analysis the relevant conclusions are made. It should be noted that the study of methods of development of the crypto currency market in foreign countries is necessary for the possible use of their experience with the most effective solutions in the preparation of General principles of state regulation.

Keywords: the digital economy, capitalization, crypto currency, bit coin, financial elements, the technology of the block chain, the transaction.

Introduction. The development of digitalization of the national economy expands the content of the economic category "money", which is associated with new technological opportunities. Crypto currency is becoming an element of the digital economy. In contrast to the traditional economy, in which value added is based on real work, in the digital economy – on information, its processing through the use of new technologies and knowledge. There is a phenomenon of information cost estimation. The end product is not the extraction of natural resources, but the formation of new knowledge based on information. There are new varieties of money in the form of virtual electronic forms with many characteristics of the monetary category, as an investment asset, means of payment, decentralization of the issue of electronic money, the objective nature of the formation of the money supply, etc. The relevance of the use of virtual money in the field of socio-economic life increases, despite certain shortcomings and difficulties of the initial growth. In recent years, the phenomenon of "electronic currencies" has been actively manifested in financial relations, the most advanced was the first crypto currency – bit coin [1].

On the basis of the first crypto currency appeared bit coin derivatives, the so – called "altcoins" - demand, the growth of their rates often exceeded the wildest expectations in terms of timing and level of capitalization. The appearance of altcoins is associated with the further development of the sphere of application of crypto currencies and improvement of their characteristics. To date, the prospects for further development of critobulus remains uncertain, although all the experts and professionals, public authorities it is clear, without regulation it is impossible to do in the future [2].

To understand the prospects of certain altcoins, it is necessary to study the reasons and factors that affect the dynamics of the crypto currency rate, how many coins of this altcoins, the growth of capitalization, the possibility of mining, the actions and intentions of national regulators, cooperation with leading exchanges, transnational corporations in the digital sphere. Along with that, you should explore other factors, the properties of each specific Aldona determining its opportunities [3].

Methodology – Today, there are many crypto currencies in the world and the emergence of new types of them does not make you wait. According to our estimates, the state regulation will help to bring order and consistency in the development of critobulus. The issue of new coins is growing, only in 30 days of the beginning of 2018 there were about 110 coins, any of which can become a new promising crypto currency for investment [4].

Consider the most well-known and used by traders, investors on the world's exchanges of types of crypto currencies, evaluate their prospects. The main and the first crypto currency in the world is bit coin,

which reached the peak of its capitalization by the end of 2017. In 2017, indeed, the capitalization of bit coin has increased more than 10 times, and in some cases, the growth of altcoins and tokens has increased during 2017 by 100-200 times or more. However, the correction of the bit coin exchange rate to a long-term reduction since the end of 2017 and during 2018 (when one bit coin was equal to almost \$ 20,000, then reached \$ 3,500) clearly showed that the growth potential of the bit coin exchange rate and capitalization level cannot be unlimited in light of the revealed disadvantages of this currency, such as scaling problems, bulkiness of the transaction and the emergence of alternative altcoins with improved characteristics.

Investment opportunities of the first crypto currency-bit coin remain promising, but the lack of regulation by the state creates high volatility in the markets. To expand the application areas, it is necessary to solve problems that limit the volume and scaling, low bandwidth, high cost of transactions, which, in General, narrow the prospects for the use of bit coin. Bit coin is actively used as a venture capital asset, where its share in the market structure remains high. Further prospects for the growth of crypto currencies are associated with the development of block chain technology, it is difficult to resist competition to decentralized applications [5].

The main requirements for crypto currencies to investments. In the analysis of altcoins and tokens for long-term investments are considered the most promising such currencies, which can have the following features and characteristics:

1. Competent highly qualified management with experience and high rating in the field of crypto currency technology and knowledge [6].

2. Application of technical solutions of innovative nature and new specific functions in the basis of crypto currency functioning (possibilities of mining of this currency, available secure transaction mechanism at price and cost, availability of open source code, etc.) [7].

3. The presence of a sufficiently high level of capitalization of the currency to maintain the level of pricing on crypto currency exchanges.

4. Availability of resources and opportunities for events for altcoins marketing promotion;

5. As noted in article [4], "the presence of an open source code of the coin also increases confidence, and the possibility of mining altcoins reduces the likelihood of manipulations with the rate, which are not uncommon in the case of tokens that have a single Issuer in the form of a token developer."

6. It is necessary to monitor on a constant basis the rate of the chosen crypto currency to assess the possibility of speculative or objectively long-term interest of investors working in the short or long-term time range [8].

Results of a research – Many altcoins meet all these requirements. The main criteria for the analysis of crypto currency development trends are anonymity, capitalization, and volatility.

Market capitalization is the total value of all electronic virtual currencies on electronic exchanges. The definition of crypto currency capitalization is no different from any other asset (e.g. company stock). The higher the value of capitalization of a particular currency, thus it is of potential interest to investors. Large investors and investment funds prefer to invest in a currency that has a large capitalization value, since investments in small crypto-coins are not profitable [9, c. 80-86].

Table 1– Market capitalization 10 largest crypto currency in 2017

| № | The name of the coin | The cost, in US dollars | Capitalization, billion US dollars | Growth in 2017 capitalization, in % |
|----|----------------------|-------------------------|------------------------------------|-------------------------------------|
| 1 | Bitcoin (BTC) | 15 405.50 | 257, 77 | 2000 |
| 2 | Ethereum (ETH) | 453,75 | 43,67 | 9000 |
| 3 | Bitcoin Cash (BCH) | 1329,97 | 22,4 | - |
| 4 | IOTA (IOTA) | 4,32 | 12,01 | 3000 |
| 5 | Ripple (XRP) | 0,24 | 9,21 | 37000 |
| 6 | Litecoin(LTC) | 152,2 | 8,26 | 5000 |
| 7 | Dash (DASH) | 698,85 | 5,41 | 5000 |
| 8 | Monero (XMR) | 246,64 | 3,81 | 2500 |
| 9 | Bitcoin Gold | 223,62 | 3,73 | - |
| 10 | NEM (NEM) | 0,404 | 3,64 | 30000 |

Note – compiled by authors according to the source [4] and [10]

Based on the data of open media publications, we have analyzed the TOP 10 most capitalized crypto currencies, which will reveal the patterns and trends of their development. Table 1 presents the information of the ten most capitalized crypto currencies, for each of which capitalization, cost, dynamics are indicated. The data are taken as of 2017.

Let's consider the characteristics of the main crypto currencies that received the best results of capitalization in early 2018:

1. Bit coin (BTC) is the world's first digital currency, the pioneer of the crypto currency market. It has a basic block chain. Bit coin is widely used as a common means of payment, has an open source code, has become the basis for many subsequent projects in the crypto currency market. Bit coin remains the most promising option, though it has some significant shortcomings – the limitations of emissions, the complexity of the transaction and high cost. Today, bit coin mining is an extremely resource-intensive process, but remains the leader in terms of capitalization. Its share in the total cost of crypto currency capital is only about a third of the total capitalization (34.67%) [4.11].

2. Ethereum (ETH). During the development of this crypto currency, ETH modified the block chain technology with the help of smart contracts, which allowed using the capabilities of the crypto currency not only as a speculative financial instrument, but also as a technological innovation. The coin immediately attracted such giants of the financial and IT market as Sberbank, Microsoft, IBM and others, and therefore long-term investments in this project still look like a reasonable solution. Its capitalization grew to \$ 100 billion. Technical progress made thanks to the efforts of developers in recent months has contributed to the growth of ETH, as well as the expansion of the market for trading with this coin.

3. Bit coin Cash (BCH) was created in the development of the bit coin line by taking into account and eliminating the identified shortcomings. Its capitalization became high when its rate rose several times and firmly entrenched in the price above \$ 1000. As a result, altcoins BCH entered the top three most capitalized currencies [12, c. 94-96].

4. YOTA. The growth of iota capitalization in recent months indicates that this coin has the highest prospects along with giants like Bit coin or Ethereum. The currency is aimed at creating a tool for reliable anonymous transactions, the creators of IOTA see the key to the development of the crypto economy in the Internet of things and master its inherent technologies. Micropayments for Internet transactions.

5. The token Ripple (XRP). The main goal of this project is to create a full-fledged digital monetary system with maximum security of transactions. Protocol for international transactions in different systems. This crypto currency has caught the attention of major players in the classic financial market, among which are such giants as UniCredit, UBS, Western Union and others. Rippl Protocol has been used in the work of banks and payment systems, and therefore the future of this crypto currency looks promising. This crypto currency is relevant for the beginning of the study of the crypto economy by its example, as it has a large package of interesting technologies important for the development of the industry as a whole. In the Wake of growing interest in its rate increased so actively that XRP for some time even held a leading position among altcoins.

6. Litecoin (LTC) was developed as a result of the fork of bit coin, taking into account a number of shortcomings of the classic bit coin, which allowed to increase the currency issue to 84 million coins and increased the transaction speed by 2.5 times. Litecoin as a fast analogue of bit coin under SegWit, is mined in a similar way, anonymous, its emission is limited, and transactions are not subject to cancellation. To date, the mining of this coin is more profitable than bit coin. During the correction period, LTC capitalization fell by almost half.

7. Dash. This crypto currency has a more reliable system of protection of personal data of the owner of the coin than implemented in Bit coin. The currency has several specific features in comparison with financial instruments: 1) its production is not demanding on energy resources; 2) not one, but a group of algorithms is used. Currency for instant transactions on the Internet, sent to the wallets of recipients after splitting transactions in the service Private Send. The stable growth of Dash makes it one of the most attractive crypto currencies on the altcoins market.

8. Monero (XMR). An independent crypto currency. The main purpose of the creation is to ensure the maximum possible anonymity of transactions, due to the CryptoNote Protocol, ring signatures using one-time keys when making money transactions. Investors appreciate the potential of this currency.

9. The NEM token, designed to make innovative changes in the sphere of Bank transfers, is another coin included in the top ten. Currency Coin from Japan, has an original open source code and a number of technological advantages that are not available to more eminent colleagues. Payments and p2p transactions.

10. Stellar, a token that has some common features with the RIPL, holds very close to NEM and has a slightly lower total value of \$ 8.629 billion.

11. The EOS token is another token designed to scale decentralized sites and services more efficiently. The capitalization of the token exceeds \$ 8 billion. and brings it closer to other coins, which took a higher position in the ranking.

12. The NEO token, which showed particularly good growth rates last year, despite its low starting positions, finally entered the TOP of the most capitalized coins. His achievement is almost capitalization.

13. Cardano token (ADA), through the use of smart contract technology, is able to increase the internal efficiency of the crypto currency economy. Cardano demonstrated an impressive growth of market capitalization: in 2017, the market capitalization of this token is equal to almost 15 billion US dollars [4,10,11].

During 2018, the total number of crypto currencies rose to 1910, according to Coinmarketcap. The opposite trend was observed to reduce capitalization for almost a year, preceding the rapid growth of crypto currencies by the beginning of 2018. Compared to December 2017, when the maximum growth in total capitalization reached \$ 600 billion, by December 26, 2018, the total capitalization fell to \$ 127.5 billion. Compared to the previous year, the capitalization of such currencies as NEO, EOS, NEM, IOTA, BTH decreased from the TOP 10, but the top ten included new currencies like USDT, Tronit (TRX) [13].

Thus, there are natural changes in the dynamics of capitalization and popularity of crypto currencies. At the beginning of 2019, respectively, many of the TOP 10 capitalized currencies lost weight, we present data on capitalization for 2017-2018 in Table 2.

Table 2 – Dynamics of capitalization of the 10 largest crypto currencies as of December 27, 2018.

| № | The name of the coin | The cost, in US dollars | Capitalization, in billion dollars. USA on 27.12.2018 | Capitalization on the 27. 12. 2017, in billions of dollars USA | Dynamics of changes, minus, plus |
|----|----------------------|-------------------------|---|--|----------------------------------|
| 1 | Bitcoin (BTC) | 3857,25 | 67,34 | 269,0 | - 3,99 times |
| 2 | Ripple (XRP) | 0,37 | 36,73 | 47,0 | - 1,28 times |
| 3 | Ethereum (ETH) | 142,38 | 14,83 | 74,0 | - 4,99 times |
| 4 | Steller (XLM) | 0,11 | 2,19 | 15 | - 6,85 times |
| 5 | EOS | 2,71 | 2,78 | - | Not available |
| 6 | Litecoin (LTC) | 32,11 | 1,92 | 15 | - 7,8 times |
| 7 | USDT | 1,01 | 1,88 | - | |
| 8 | Cardano (ADA) | 0,04 | 1,09 | 10 | - 9,17 times |
| 9 | Manero (XMR) | 48,87 | 0,82 | 6 | - 7,32 times |
| 10 | Tronit (TRX) | 0,02 | 1,34 | - | |
| 11 | DASH | 82,62 | 0,71 | 9 | - 12,68 times |

Note – compiled by authors according to the source [14]

Crypto currency problems. A digital currency, hardly appeared to be unclaimed, to assess their capitalization is almost impossible. In modern conditions of unregulated crypto currency processes at the state level, but at the same time, when trading crypto-currency exchanges are active, it is necessary to pay special attention to the measures taken by States that have more influence on this financial market, such as Japan, South Korea, China, the United States and others [15].

It is important to analyze the measures taken by these States in the field of regulation of crypto currencies, to monitor their actions for their impact on the exchange rate and capitalization of a particular crypto currency. For example, Japan has been consistently implementing measures to embed crypto currency relations in the financial system of the country. Measures are being taken to regulate and license the activities of companies in the field of crypto currency economy. Therefore, investors should pay attention to projects with Japanese participation, and not only pay attention to the world-recognized platforms Ethereum and Bitcoin, Ripple and Stellar [16].

One of the States that offered its vision on the regulation of the crypto market is South Korea. South Korea sees state regulation in the adoption of strict measures to limit the issuance of crypto currencies, their regulation.

China generally opposes the development of crypto-currency projects, it is necessary to pay special attention to projects with Chinese participation. Chairman of the Chinese Central Bank Mr. Zhou Xiaochuan at a press conference in Beijing on the sidelines of the session of the national people's Congress (NPC) on March 9, 2018 said that "Bitcoin and other digital currencies enter the market too quickly, and they are not reliable enough. Their too rapid spread can have a negative impact on consumers. In addition, they can lead to the most unpredictable consequences in the financial market... Virtual money like bitcoin is not currently recognized by the People's Bank of China and the banking system as a means of payment like cash." According to Mr. Zhou Xiaochuan: China is developing a digital currency for electronic payments, which will be based on existing Chinese banknotes and coins, without changing the position of the Central Bank and commercial banks in the financial system. The official digital currency in China "should provide uninterrupted monetary and financial stability and at the same time protect consumers... We do not want to create products for speculation ... the Illusion of getting rich overnight is not good" [17].

In the us, in the crypto-currency sector, there is a General unregulation of the industry. Until now, the fundamental issues of regulation have not been resolved. The launch of the crypto currency platform for institutional investors Bakkt in January 2019 is delayed, did not receive the necessary permits from the commodity futures trading Commission (CFTC) . A feature of the launch of this platform is the availability of permission to use its own infrastructure for storing bit coin assets of its customers. The irregularity of the situation for resolution to keep the block chain assets disrupted the timing of the launch [18].

Some of the larger trading exchanges, starting in January 2018 and has launched futures trading of crypto currencies, but at the same time, the authorities are taking tough measures against some of the crypto currency exchanges that have committed tax violations.

News reports have a negative impact on bit coin and other altcoins. For example, Google, Facebook, Twitter refused to publish bit coin in advertising on their fields, which led to a sharp further drop in the rates of all crypto currencies. Bitcoin fell only in the last day in mid-March by 7% after Google, Twitter Facebook refused to advertise bit coin. About it reports a source Cointelegraph. Accordingly, the fall in the bit coin exchange rate affected the fall of the leading altcoins [19].

Risks of cryptocurrency. The cryptocurrency environment, due to its specific functioning (anonymity, decentralized nature of money issue), carries great financial risks for potential investors. The main of them are fraud, theft from accounts of cryptocurrency exchanges, of robbery of individuals, of bankruptcy, as exchanges, and certain cryptocurrencies. However, the characteristic properties of current cryptocurrencies, such as volatility and speculative demand, are risky for investors. For example, only "for the first two months in 2018 it has already been recorded 22 facts of fraud, during this period of time the attackers stole about \$ 1.3 billion, according to the well-known portal Bitcoin.com". Experts believe that if the crypto-currency community does not provide transparency and a high level of security, by the end of the year thieves will steal \$3.25 billion according to forecasts. No less serious financial risks are issues related to the primary placement of crypto-coins. According to the data, of all the projects of the primary placement of coins last year raised \$5.2 billion, and only 48% of them were successful [20].

No less great risks are the lack of General principles of regulation by States, which create uncertainty and manipulation from the outside, which negatively affected the development of the crypto-currency market during this period.

Conclusions - 1. It should be recognized that a significant gap in the capitalization of the main currency - bit coin BTC, also altcoins - Ethereum etc, ripple XRP and new coins indicates that the first of the noted ones still have a higher attractiveness for potential investors.

2. The long-term correction for the depreciation of the majority of crypto currencies, starting from the second half of January 2018 to the present time, is due to the fact that the crypto currency market was overbought, strongly depends on speculation, General principles of regulation have not been developed. Accordingly, this trend will not end soon.

3. The volatility of crypto currency rates is often associated with any negative news (news from developed countries in this regard, such as South Korea, China, the United States on the regulation of digital currencies).

4. It should be noted the direct dependence of the most capitalized altcoins on changes in the bit coin exchange rate in the conditions of the General correction, its low volatility. In practical terms, a powerful low-level currency correction becomes necessary for the future growth of prices for crypto currencies.

5. The significant growth and subsequent correction of bit coin to decline showed well that the growth potential of bit coin is on the verge of exhaustion, until the problems of scaling, the transaction mechanism, the high cost of withdrawal of Fiat money will not be solved in the near future.

6. The emergence of more advanced characteristics of new altcoins creates prerequisites for their further growth, it becomes relevant in subsequent years, investments in the most promising altcoins, which will take into account the shortcomings of the main crypto currency – bit coin, improved characteristics of use.

Thus, new financial elements such as bit coin and altcoins create new economic relations in the financial spheres of States. Potential participants of the crypto-currency markets should accumulate experience, analyze the state of certain crypto-currencies, introduce new altcoins, be aware of the main news of the crypto-economy of various States and on this basis each participant should develop his own strategy for participation in the crypto-economy.

The state bodies of the Republic of Kazakhstan should not just decide on the adoption of the state policy of this new sector of the financial sector, it is necessary to take concrete measures to prepare the General principles of state regulation based on international experience. The need to address regulatory issues directly affects the development of civilized methods of development of the crypto currency market in the country and its integration into the global digital economy, the use of digital currencies, potential investors, taking into account the strategy of choosing crypto currency assets, risk assessment.

The development of the digital economy, of which the crypto – currency sphere is a part, is an objective factor, it does not depend on subjectivity, accordingly, it is necessary to develop in all directions of new technologies in this sphere, so as not to be among the lagging countries. The digital economy cannot exist without the digital currency, it must be understood, first of all, by the state bodies. Digital currency brings new content to the essence and functions of money, has a great prospect of development in a new technological dimension.

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ЗАМАНАУИ ЭКОНОМИКАДАҒЫ КРИПТОВАЛЮТА

Аннотация. Мақалада криптовалютаның экономикалық мазмұны, капиталдандыру сұрақтары мен инвестициялау үшін негізгі талаптар зерттелді. Автормен 2017 және 2018 жылдардағы 10 ірі криптовалюталардың капиталдандыру динамикасының салыстырмалы-салғастырмалы талдауы жүргізілді. Криптовалюталардың мәселелері, оларды енгізу мен заманауи экономикада қолдану күрделілігі айқындалып, криптовалюталық нарықтың даму барысына әсері бар тәуекелдер анықталды. Жүргізілген талдау жұмысының негізінде сәйкес қорытындылар жасалынды. Сондай-ақ, шет елдердегі криптовалюталық нарықтың даму әдістерін зерттеу мемлекеттік реттеудің жалпы қағидаларын әзірлеу сұрақтарындағы ең тиімді шешімдермен байланысты олардың тәжірибесін қолдану мүмкіндігі үшін қажет екенін атап өту керек.

Түйін сөздер: цифрлық экономика, капиталдандыру, криптовалюта, биткоин, қаржылық элементтер, блокчейн технологиясы, транзакция.

УДК 336.7.

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КРИПТОВАЛЮТА В СОВРЕМЕННОЙ ЭКОНОМИКЕ

Аннотация. В статье исследуются экономическое содержание криптовалюты, вопросы капитализации и основные требования для инвестирования. Автором проведен сравнительно-сопоставительный анализ

динамики капитализации 10 крупнейших криптовалют за 2017 и 2018 годы. Выявлены проблемы криптовалют, сложности их внедрения и использования в современной экономике, определены риски, имеющие влияние на ход развития криптовалютного рынка. На основании проведенного анализа сделаны соответствующие выводы. Следует отметить, что изучение методов развития криптовалютного рынка в зарубежных странах необходимо для возможного использования их опыта с наиболее эффективными решениями в вопросах подготовки общих принципов государственного регулирования.

Ключевые слова: цифровая экономика, капитализация, криптовалюта, биткоин, финансовые элементы, технология блокчейн, транзакция.

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www.nauka-nanrk.kz

ISSN 2518-1483 (Online), ISSN 2224-5227 (Print)

<http://reports-science.kz/index.php/en/archive>

Редакторы *М. С. Ахметова, Т.А. Апендиев, Д.С. Аленов*
Верстка на компьютере *А.М. Кульгинбаевой*

Подписано в печать 12.04.2019.
Формат 60x881/8. Бумага офсетная. Печать – ризограф.
12,8 п.л. Тираж 500. Заказ 2.