

ЕКОНОМІКА

UDC 336.714

Inna Gryshova *
Tatiana Shestakovska *FINTECH BUSINESS AND PROSPECTS OF ITS DEVELOPMENT
IN THE CONTEXT OF LEGALIZING THE CRYPTOCURRENCY IN UKRAINE

The article is devoted to the peculiarities of the functioning of FinTech business in Ukraine and the substantiation of the areas of legalization of cryptocurrency as an innovative tool. The organizational and institutional basis for the development of the FinTech Industry in Ukraine is determined. An overview of the current state and trends of FinTech development in Ukraine is conducted. The content of the FinTech companies in Ukraine and their areas that already have positive results (electronic wallets, mobile applications, cash operations, mobile technologies, payment cards and Internet acquiring) and current and future directions (electronic banking, automation, biometrics Identification, Machine Learning and Artificial Intelligence, Forecasting and Modelling, Smart Contracts, Chat Boots, Block Cycle, Run Date, Digitization of All Registries, ISO, IT Security, Cybersecurity, Payment Security, Open APIs). The problems of introduction of financial technologies in Ukraine and prospects of their use are investigated. The mechanism of crypto-currency functioning as an innovative instrument in the market of financial technologies has been identified. Systemic problems of using cryptographic in the economic space of Ukraine. The peculiarities of legalization of cryptology in Ukraine and its problems are substantiated. In order to solve them, recommendations have been developed, adapted to national realities, a system of priority measures has been developed, the practical implementation of which will enable the development of FinTech business in Ukraine and the integration processes of our state into the European and world economic space through the establishment of the functioning of cryptology.

Keywords: FinTech, innovations, cryptocurrency, technologies, blockade, bitcoin, development.

Гришова І. Ю., Шестаковська Т. Л. ФінТех бізнес та перспективи його розвитку у контексті легалізації криптовалюти в Україні.

Стаття присвячена особливостям функціонування ФінТех бізнесу в Україні та обґрунтуванню напрямів легалізації криптовалюти як інноваційного інструменту. Визначена організаційно-інституційна основа для розвитку ФінТех індустрії в Україні. Здійснено огляд сучасного стану та тенденцій розвитку ФінТех бізнесу в Україні. Розглянуто зміст діяльності ФінТех-компаній в Україні та їх напрями, які вже мають позитивні результати (електронні гаманці, мобільні додатки, операції з готівкою, мобільні технології, платіжні карти та інтернет-еквайринг) та поточні й перспективні напрями (електронний банкінг, автоматизація, біометрична ідентифікація, машинне навчання та штучний інтелект, прогнозування та моделювання, смарт-контракти, чат-боти, блокчейн, Біг Дата, цифровізація всіх реєстрів, ІСО, ІТ безпека, кібербезпека; безпека платежів, відкриті API). Досліджено проблеми впровадження фінансових технологій в Україні та перспективи їх використання. Ідентифікований механізм функціонування криптовалют як інноваційного інструменту на ринку фінансових технологій. Систематизовані проблеми використання криптовалют в економічному просторі України. Обґрунтовані особливості легалізації криптовалют в Україні та її проблеми. З метою їх вирішення розроблено рекомендації, адаптовані до вітчизняних реалій, визначено систему пріоритетних заходів, практичне втілення яких дозволить через налагодження функціонування криптовалют стимулювати розвиток ФінТех бізнесу в Україні та інтеграційних процесів нашої держави в європейський і світовий економічний простір.

Ключові слова: ФінТех, інновації, криптовалюта, технології, блокчейн, біткоїн, розвиток.

Гришова И. Ю., Шестаковская Т. Л. ФинТех бизнес и перспективы его развития в контексте легализации криптовалюты в Украине.

Статья посвящена особенностям функционирования Финтех бизнеса в Украине и обоснованию направлений легализации криптовалюты как инновационного инструмента. Определена организационно-институциональная основа для развития Финтех индустрии в Украине. Осуществлен обзор современного состояния и тенденций развития Финтех бизнеса в Украине. Рассмотрено содержание деятельности Финтех-компаний в Украине и их направления, которые уже имеют положительные результаты (электронные кошельки, мобильные приложения, операции с наличными, мобильные технологии, платежные карты и интернет-эквайринг) и текущие и перспективные направления (электронный банкинг, автоматизация, биометрическая идентификация, машинное обучение и искусственный интеллект, прогнозирования и моделирования, смарт-контракты, чат боты, блокчейн, Бег Дата, цифровизация всех реестров, ИСО, ИТ безопасность, кибербезопасность, безопасность платежей, открытые АРЕ). Исследованы проблемы внедрения финансовых технологий в Украине и перспективы их использования. Идентифицирован механизм функционирования криптовалюты как инновационного инструмента на рынке финансовых технологий. Систематизированы проблемы использования криптовалюты в экономике Украины. Обоснованы особенности легализации криптовалюты в Украине и ее проблемы. С целью их решения разработаны рекомендации, адаптированные к отечественным реалиям, определена система приоритетных мероприятий, практическое воплощение которых позволит через налаживание функционирования криптовалюты стимулировать развитие Финтех бизнеса в Украине и интеграционных процессов нашего государства в европейское и мировое экономическое пространство.

Ключевые слова: ФинТех, инновации, криптовалюта, технологии, блокчейн, биткоины, развитие.

Formulation of the problem. The deepening of the financial technologies of economic systems and the transition to the financial economy have led to the need to develop a new strategy for the economic development of the world community in order to ensure the creative prosperity of the latter in the digital economy. The defining features of the new economy are: productivity, which increasingly depends on the use of science and technology, information quality and management; the transition of producers and consumers from material production to information activities (in developed capitalist countries); a profound transformation of the organization of the production process, which is to replace the standardized mass production with a flexible and vertically integrated organization with horizontal network relationships between subdivisions; globalization, according to which everything is organized independently of borders; the revolutionary nature of technological change, the central place in which the information technology, able to change the material basis of the modern world [1].

Trends of the present are the need for the development of non-physical channels of service, the implementation of operational solutions and the development of new methods for establishing contacts with potential clients. This phenomenon is also characteristic of the Ukrainian financial system, which predetermines the regular implementation of new solutions. Therefore, it can be argued that the development of financial innovative technologies will promote the modernization of the financial system, which will take place through the introduction of financial, information and telecommunication technologies.

Recently, more and more scholars have pointed out that the desired criteria for a comparatively new financial market instrument – cryptocurrencies. The essence of cryptography determines its main advantages: confidentiality, and therefore, the safety of these owners; independence from the state; absence of territorial and time constraints in transactions; low cost of service, etc. As a result, cryptic currency is gaining increasing popularity among Ukrainian citizens, the infrastructure for its sale through terminals is being formed, futures contracts for bitcoins are beginning to be practiced [2], and the network of commercial and production structures that provide an opportunity to calculate cryptography is expanding. Despite the economic and social

perception of cybercrime, in our country there is no legal basis for its production, circulation and use. Instead, in the highly developed countries of the world officially defined the status of cryptographic goods and regulators and control over operations with it.

Analysis of recent research. The issue of financial innovations, technologies and digital platforms and their role in ensuring socio-economic growth is the subject of discussions and studies of such foreign theorists and practitioners as: M. Buckle, M. Castells, M. Miller, C. Peres, J. Thomson, P. Tufano, L. J. White, U. S. Freem and others. The theoretical and methodological foundations of innovation and the question of the effectiveness of their use in financial markets were investigated by domestic scientists: V. Aleksandrova, L. Alekseenko, A. Baranovsky, G. Belinska, V. Geets, L. Gluschenko, I. Grishova, G. Kulina, L. Lavrov, O. Naumov, N. Panteleyev, L. Primosta, I. Stankevich, V. Sheludko and others. At the same time, despite the significant scientific advances of economists on the conceptual and organizational and applied principles of the use of modern financial technologies, further economic research is needed on the use of financial technologies and the peculiarities of legalization of cryptocurrency as an innovative financial market instrument in order to ensure the development of the national economic system. The problems of the nature and development of cryptography, their types, advantages and disadvantages are the works of M. Likhachev, N. Polivki, M. Kutsevola, O. Shevchenko-Naumova, A. Kvitka, I. Lubentsa, and others.

Setting objectives. The purpose of the paper is to substantiate the peculiarities of the functioning of FinTech business in Ukraine and the use of digital currency as an innovative tool for its development.

Presenting main material. Given the fact that the transition to a neo-economics (finance-economics) is determined by processes of transformation of the financial sector into a separate specific form of activity with its resources, tools, technology and development laws, the implementation of financial transactions involves the use of innovative financial technologies and digital platforms, innovation of financial instruments. They allow maintaining competitive positions in the market, or vice versa, can stimulate the intensive development of individual ecosystems in order to achieve leadership. It is clear that the ill-considered introduction of innovative financial technologies or products can serve as the emergence of economic challenges and threats, violation of the integrity of the financial system, the loss of its equilibrium state. Nevertheless, according to W. Scott Frame and Lawrence J. White, financial innovations make it possible to create something new that reduces costs, reduces risks, or provides an improved product /a service/ tool that better satisfies the needs of participants in financial relations» [3, p. 3]. In addition, according to M. Buckle and J. Thomson, financial innovation leads to «the creation of new financial instruments and techniques of financial intermediation, structural changes in the financial system with the emergence of new financial markets and changes in the organization and behaviour of institutions» [4, c. 48]. The aforementioned positions are shared by the Nobel Prize winner Miller [5], Professor of the Harvard Business School P. Tufano [6], British banker and financial market specialist D. Llewellyn [7]. Venezuelan scientist C. Perez concludes that innovations provide: the initiation of production activity or its development and expansion; Improving the functioning of the financial sector itself as an industry of financial services; reducing risk and increasing the possibility of receiving investment income; mobilization of assets and refinancing of obligations; manipulation of financial intermediaries with various financial instruments [8].

Financial Technologies, or FinTech, is a field that is comprised of companies that use technology and innovation to compete with traditional financial institutions in the form of banks and intermediaries in the financial services market [9]. According to the results of his research, Patrick Schueffel states: «FinTech is a new financial industry that uses technology to improve its financial performance» [10]. N. Morozco, while referring to the interpretation of the term FinTech, uses synonymous with «financial technological space» and defines it as an industry that incorporates technologies for banking and corporate finance, capital markets, financial analytics, payments, and personal finance management, besides, it additionally includes it definition of private investment and private venture investments [11, p. 10].

FinTech itself includes both numerous technology startups and large financial organizations that are trying to improve and optimize their services [12]. FinTech is a significant asset for

distributing financial services and products in new areas and among different segments of the population. Given the high percentage of people who are outside the banking system or receiving insufficient services, as well as difficulties for micro, small and micro enterprises, and people living in remote areas, the market has an untapped financial niche. This creates significant investment opportunities for FinTech. In addition, investments are needed due to the emergence of e-commerce and the need for cheap payments, money transfer services (especially with expensive money transfer services).

After the global financial crisis of 2008, banks in all countries were forced to adapt to the new world. Regulators have strengthened the capital requirements of banks, introduced new risk management standards and more stringent requirements for KYC procedures (Know Your Customer – a customer identification procedure known as «Know Your Client») and AML (Anti Money Laundering). More than 80 Ukrainian companies are developing technologies and introducing innovations to compete with banks and intermediaries in the financial market. At the same time, technology and innovation have been rapidly developed: technology companies from the Big Five (Amazon, Facebook, Google, Apple, Microsoft) have developed innovative products and services that shape new standards of quality, speed and convenience for consumers; increased labor migration and, accordingly, increased volumes of money transfers to their relatives; small and medium-sized businesses began to look for alternative ways to finance their activities; Private investors who were previously engaged in real estate, began to look for new directions for earnings.

The organizational and institutional basis for the development of the FinTech Industry in Ukraine is the following: 1. USAID project «Transformation of the Financial Sector» is a four year program (from October 2016 to December 2020) funded by the United States Agency for International Development (USAID) and executed by DAI Global LLC (DAI). The purpose of the Project is to turn the financial sector of Ukraine into a transparent, fair and diversified system that supports enterprises of all sizes and serves the needs of citizens. The project supports the reform of the financial sector in Ukraine and provides assistance in the following areas: increasing confidence in the banking sector; increasing access to finance in the non-banking financial sector; expanding the use of electronic finance; reforming the pension system; as well as informational and educational work with vulnerable groups of the population to facilitate their more active participation in financial activities. 2. UNIT.City is the first innovation park in Ukraine. The place where the economic system and infrastructure for business development in high technology and creative industries are created. The purpose of the park is to become the center of innovation and the point of entry into Ukraine for investors, partners and new technologies from around the world. A place where the concentration of companies, startups, individual specialists, research laboratories provides conditions for businesses within the park to grow faster than outside it.

The financial system of FinTech combines all the participants in the financial market: FinTech-startups, regulators, banks, international payment systems, associations of bankers and financiers, incubators, accelerators, suppliers. One of the most important factors in the development of FinTech is the favorable legal and regulatory environment. In markets such as the United Kingdom, Singapore and Hong Kong, FinTech's development stimulates the existence of a regulatory test environment («sandbox») and relevant legislation. A legal field that provides for simple and transparent rules for business creation, proper tax rules, licensing requirements, and investor and business protection is key. However, even in those markets where the formation of the environment is still in the process, it is possible to use the «learning test» approach, according to which FinTech companies write about the absence of objections from regulators to develop FinTech-innovations. This approach, which has been applied by the Philippines and Kenya, promotes the promotion of FinTech even when the relevant legislative and regulatory environment is still in the process of being formed.

FinTech's development is actively supported by a variety of initiatives and activities of the National Bank of Ukraine. The National Bank of Ukraine approved the Integrated Program for the Development of the Financial Sector of Ukraine until 2020 (Resolution No. 391 dated June 18, 2017). The environment for supporting FinTech and other startups is improving now. Among the important changes that were recently introduced in the Ukrainian legislation are: the authorization for signing

of accounts and transactions by electronic signature; banks are no longer required to translate documents into Ukrainian, if they are in English; domestic IT companies continue to use simplified taxation – 5 % per year; The National Bank of Ukraine continues to gradually remove restrictions on the repatriation of dividends – the limit has been raised to \$ 5,000,000 per legal entity per year; The National Bank of Ukraine actively advocates the adoption of directives of the European Union, for example, in PSD2, in internal legislative acts; adoption of the law on electronic identification and trust services for electronic transactions in the domestic market (Law on Electronic Trust Services).

Ukraine regularly announces the support of foreign investment in Ukraine. On the whole, from the regulatory point of view, starting and doing business in Ukraine for foreign investors is no different from the business environment for domestic investors. Recently, the requirement to obtain a special permit for public services for foreign direct investment has been canceled. Ukrainian start-ups increasingly use the services of crowd-funding platforms for financing. According to a study by Mastercard, about 87 % of the banking sector is ready to partner with FinTech start-ups. Creating new accelerated programs in the country will reduce the costs of FinTech startups and stimulate initial funding.

Many of FinTech-based companies established in Ukraine are aimed at a common European market. Exports of intellectual property to other countries. But, in a positive light, the infrastructure necessary for the development of the startup environment, in the form of accelerators and incubators, is formed. However, in order to stimulate the growth of new projects, it is still necessary to go through a serious way to create the right conditions for doing business in the country – this applies both to the regulatory environment, legislative changes, and taxation policies for innovative companies, as well as to the simplicity and transparency of creating startups. As a result of this research, the directions of functioning of domestic business in the sphere of FinTech are determined (Fig. 1).

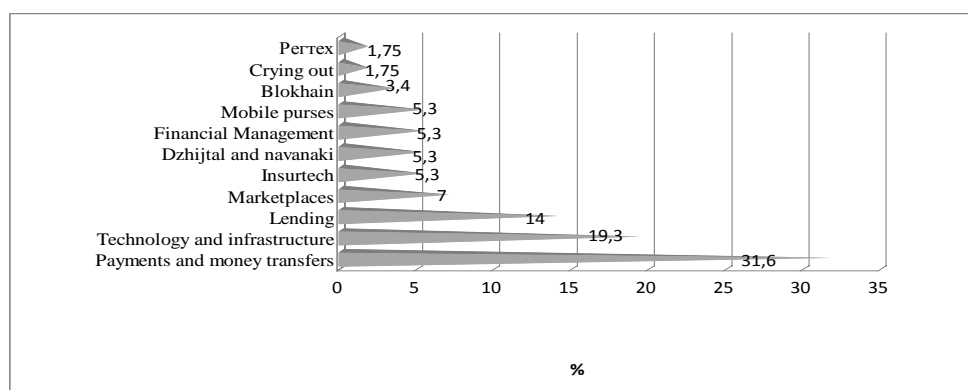


Fig. 1. Areas of operation of FinTech business in the economic system of Ukraine *
* Source: [2]

More than 37 % of FinTech providers deal with market segments of payments between legal entities (B2B) and are aimed at servicing small and medium business enterprises (Fig. 2).

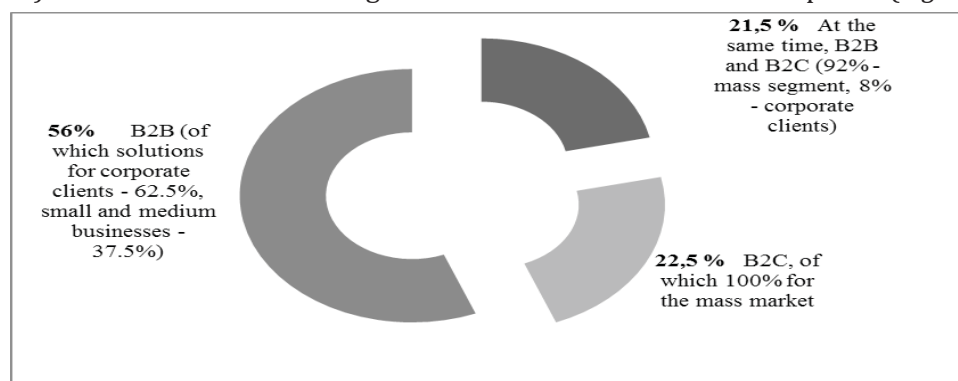


Fig.2 Market segments of FinTech business in Ukraine *
* Source: [2]

From the point of view of business models, FinTech providers function by obtaining various commissions. A small number of such providers are based on the premium model or licensing model. Although most FinTech companies use their own funds to finance operating activities, a large part (49 %) searches for foreign investors (Fig. 3). The largest volume of investments was received by such sectors as: payments, lending and banking technologies. Other global trends include mobile financial services, finance and accounts management, remittances, job advisers, insurance technologies, crowdfunding, P2P lending, blockade and cybercurrency. It should be noted that 72 % of FinTech businessmen are ready to attract investment for development, which will contribute to the growth of FinTech industry in Ukraine. It is also positive that the domestic FinTech business is developing in parallel with the world's technological trends. Biometric identification, machine learning, artificial intelligence are strategic benchmarks for today's domestic FinTech business. We have systematized the activities of FinTech business in Ukraine that already have positive results (electronic wallets, mobile applications, cash transactions, mobile technologies, payment cards and Internet acquiring) and current and future directions (electronic banking, automation, biometric identification, machine training and artificial intelligence, forecasting and modelling, smart contracts, chat boots, blockade, running date, digitalisation of all registries, ISO, IT security, cyber security, payment security, open APIs).

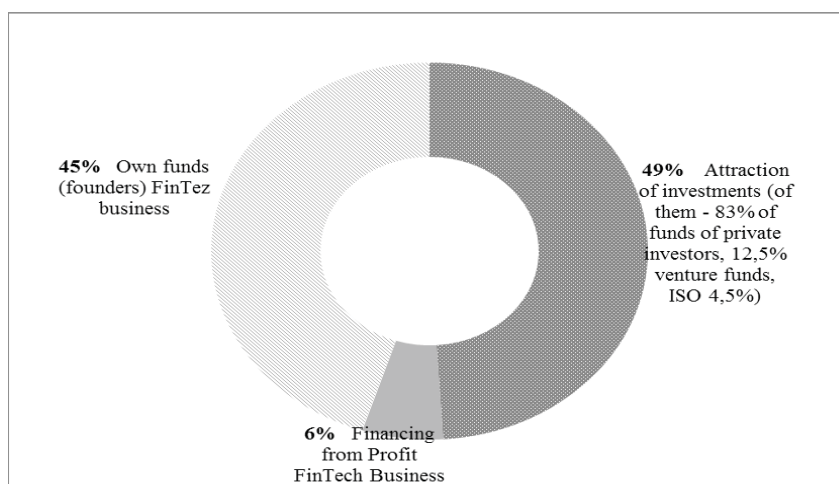


Fig. 3 Funding sources of FinTech business in Ukraine *

* Source: [13]

At the same time, the development of financial technologies in Ukraine is accompanied by a number of problems. The financial sphere remains rather conservative, primarily because of the high risk of operations carried out inside it (the loss of cash for the client of a financial company is much greater than, for example, the loss of an account in some other service). As a consequence, the financial industry remains one of the most regulated in the regulatory framework. Often financial technology initiatives face the need to obtain licenses and special permits, often innovative approaches violate instructions for those or other transactions, the principles of verification and identification. It is very important for state regulation of financial activity to predict and assess trends in the development of technologies, reacting to their occurrence by an adequate change in regulatory acts. Moreover, the relevant bills should not have a situational or repressive character. Recently, the regulators of the Ukrainian financial market have repeatedly stated their loyalty to FinTech. In this regard, the initiatives of the State Agency for e-Governance are positive.

Particular attention when considering the prospects of the development of FinTech business in Ukraine deserves analysis of the market cryptocurrency. The market of cryptography (or «virtual» or «electronic» money) is successfully functioning and allows you to analyze the dynamics of value, supply and demand of about 90-100 different crypto-goods. Among the largest in terms of capitalization are cryptographic products such as: Bitcoin, Ethereum, Ethereum Classic, Dash, Ripple, Monero, Litecoin, NEM, Augur, MaidSafeCoin and others [14–15]. Characteristics of the main of them are presented in Table 1.

The most common and most expensive cryptographic currency is bitcoin (Bitcoin). The term «bitcoin» is borrowed from the English language («bitcoin») and is formed by the fusion of words: «bit» (unit of computer memory) and «coin» (coin) [17]. This virtual currency has the advantages of being decentralized, all transactions with its participation are anonymous, and there is no emission center. Trade deals are conducted only in electronic format, and sales transactions of the currency can be made through online exchanges (for example, BTC-E). With the help of special exchange points in online networks (WebMoney) or through the Forex broker (FXOpen), cryptographic currency can be exchanged for major currencies of the world. Bitcoins can also be obtained as a result of acceptance of payment for the goods and services provided or through purchase directly from another owner.

Table 1

Characteristics and market structure are crippled in terms of their individual types

№	The names of digital currency	% in the structure of the cryptocurrency market	Characteristics of cryptocurrency
1	BITCOIN	72	The first decentralized cryptocurrency, which began operating in January 2009. The basis of its implementation in practice is the process of «production». Individuals that provide it, make expensive software and computing operations on a competitive basis: the winner has the right to create a new history on the network, updating the «blockchain». In its simplest terms, the term covers the totality of all past transactions – or rather, their identification records. The process of «mining» cryptocurrency is not unlimited, clearly defined limits of such emissions are set
2	ETHEREUM (ETH)	16	Officially operates since 2015. Especially popular among innovators and institutional actors. It is based on a detailed computing platform with its own unique programming language «Turing». «Blockchain «contains full information about the operations in the system of each participant – «node». The relationship between them is realized thanks to the cryptocurrency «ether»
3	DASH	3	Became effective in 2014, however, became widespread only in the beginning of 2017 thanks to the full privacy policy. The specifics of this crypto currency is the distribution of block rewards not only between «getters», but also between server – nodes «masternode». In addition, 10 % of the remuneration is aimed at marketing and innovative improvement of the system
4	MONERO (XMR)	1	Officially operating since 2014, has gained popularity in 2016. Meets the General principles of functioning of crypto-currency systems: anonymity, confidentiality. Created enhanced privacy targeted messages
5	RIPPLE (XRP)	1	A crypto currency that is not based on the «Blockchain», unlike most others. The essence of the operation is to use a global consensus. Therefore, large institutions (e.g. international banks) are the main clients of the system. This crypto currency serves as a bridge between national, including hard-to-convert, monetary units
6	LITECOIN (LTC)	1	Officially operates since 2011. It was positioned on the market as silver (compared to gold-bitcoin). The mechanism of operation is actually identical to BITCOIN, a few different only mining algorithm

* Source: [14–15]

The latter option is considered to be the most advantageous, since it does not provide for a commission inherent in an exchange point. Another way of obtaining a digital currency is mining. It consists in the fact that on computers of users who are located at different points of the planet, install a special software, by which, as a result of solving certain mathematical problems, bitcoins are created. In this case, the process of their creation and distribution is not controlled by a single emission center, and branching provides security [16]. Bitcoin is similar to electronic money, but it is the principles of complete anonymity, lack of control and limited release distinguish it from the work of electronic payment systems. One of the main benefits of this currency is that it is protected from inflation, since the emission procedure is programmed to reduce the amount of virtual money in circulation.

Bitcoin network is based on «blockade» (chain of blocks) and is a public register that stores data about all system transactions. These transactions are protected by electronic signatures of users – network members who extract bitcoin or carry out any transactions with them. The external system works similarly to any electronic payment system, for example, Webmoney. However, among the drawbacks of cryptography, one can mention that in the event of a lost password or access to an electronic purse, the existing cryptic currency will be completely lost. It is also attractive to investors that the course of the bitcoins is not influenced by the political conditions or activities of the Central Banks of the countries. The rate of such a currency depends only on demand and supply on it: the volume of demand depends on how many goods and services it is possible to buy for bitcoins, and the offer is strictly limited. For 8 years of existence, this cryptography has become widespread in the online space. The number of companies that accept bitcoin payments is increasing every day. Among them are VirginGalactic, The New York Times, CNN, Reuters, Zynga, Overstock and Tiger Direct, as well as American divisions of Red Cross, who take donations in bitcoins. A rather powerful impetus to the development of the Bitcoin system was its inclusion as one way to pay for goods to the world’s largest online eBay store, which took place in April 2015 [16]. Despite the fact that at the beginning of its development, bitcoin was a local cryptography that was used only by a limited circle of people (its founders and related persons), in a few years it became a world-class system. Today, besides exchanges, exchangers and Internet resources, operations with bitcoins are carried out by some stores and service centers.

Market courses for cryptography varied significantly from the moment they came to the present (Fig. 4). The cost of BITCOIN for archival data as of July 2010 was only \$ 0.06. Significant growth in the price of cripples occurred in 2013–2014. At the beginning of 2014, the course was \$ 881.66. In 2015, there was a tendency to reduce the cost of BITCOIN. Beginning from 2016 and until now, the course of this cryptography has grown, but it has been characterized by high-Amy fluctuations. For example, on December 11, 2017, the highest bid price of BITCOIN was \$ 17549.67. As of the end of October 2018, its value is about \$ 6498.39 (Fig. 4).

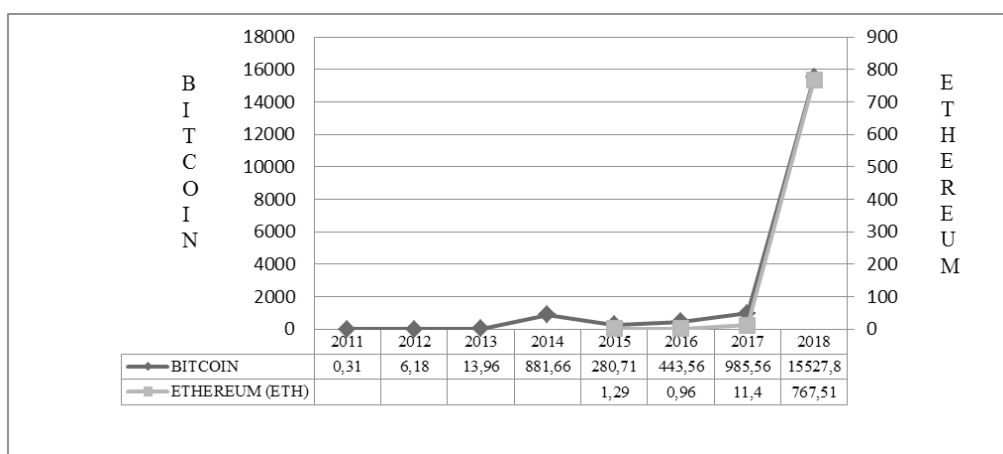


Fig. 4 The dynamics of the value of the cry is on the beginning of 2011-2018, \$ *

* Source: [14; 18]

The most important reasons for the possible devaluation of bitcoin analysts are the complete absence of its inflation and the desire to take the turnover of cybercurrencies under state control. The latter probably due to a desire to concentrate state money creation tool at its disposal and prevent the formation of alternative means of payment which are not subjected to state regulation. Physically prohibit Internet transactions by bitcoins almost impossible, because in this case requires access to any computer device, prohibited by law in most countries as an interference with privacy.

The legalization of these virtual money in the world is quite diverse. In the US, bitcoin is recognized as one of the types of payments in e-commerce, and in Germany, this currency is classified as private money, through which multilateral clearing transactions can be carried out. In early 2017, the first bitcoin-bank (Bitcoin-Bank) [15] was officially opened in Vienna (Austria), and in Japan from April 2017 bitcoins began to function as a full-fledged currency [16]. In Spain, the opening of 7 thousand ATMs for the exchange of bitcoins in euros, 3 thousand of these ATMs are available in Poland [17]. Another trend is observed in countries such as Russia, Ecuador, Kyrgyzstan, where the use of bitcoins is prohibited. In China, their use is prohibited only for financial institutions [14].

The existence of cybercurrencies in our country is actually ignored by the authorities, which can cause not only economic but also social problems. For a long time, discussions about the draft law «On the Crippling Currency in Ukraine» No. 7183 [19] were under discussion. Could not agree on a single approach to determining the nature and role of a financial instrument. Understanding its prevalence in the world and the inappropriateness of closing the Ukrainian economy from crippling goods, an alternative draft law was proposed «On stimulating the market for cybercurrency and their derivatives in Ukraine» [20]. Currently, both projects are under development.

It is worth mentioning that the adoption of the bill «On the circulation of cybercriminals in Ukraine» will lead to the impossibility of buying criminals by legal entities, since the definition of «software code» generates additional issues for which the bill does not comply. The draft law «On the promotion of the market for cybercurrency and its derivatives in Ukraine» contains restrictions on the purchase of cybercriminals by the subjects of the relations. The authors assume that a digital currency can only be acquired through special financial institutions. There is a great likelihood that such a law can be ignored by the community, as it conflicts with the current practice of crying and criminology and the very meaning of cryptographic technology. In addition, the question remains about the fate of existing cryptobacteria in the population. Both documents contain certain imperfections. They were developed without the participation of the active crypt communities in Ukraine, which directly possesses practical knowledge about the architecture of blockade and cryptographic technologies. The effective practice of Western countries is to actively participate in the drafting of bills of business representatives and non-governmental organizations of the industry. In Ukraine, over the past five years, a very strong business and experts field operating in the field of cryptography, including landlord business, cryptoexchange, start-ups, venture funds, IT companies that are developing blockchain-based software that has already received world-wide recognition, as well as the corporate sector investing in research and technology development, including the auditors of the big four, and the Ukrainian offices of such IT giants as Microsoft, IBM and others.

Submitted to the Verkhovna Rada of Ukraine Draft Law «On Amendments to the Tax Code of Ukraine regarding the taxation of transactions with virtual assets in Ukraine» No. 9083 dated September 14, 2018. The key objectives of this Law are: withdrawal from the shadow market of a large volume of operations; replenishment of the state budget of Ukraine by bringing in a fundamentally new type of income of individuals and legal entities – income from operations with virtual assets; stimulating the development of the market for virtual assets in Ukraine [21].

When adopting this project, we draw attention to the need for prior careful study of the legal and financial and economic consequences of «stimulating the development of the market for virtual assets in Ukraine» proposed in the project. First of all, this is due to the increase in risk incentives for Ukraine's financial system, first of all, for the public finance system, given the exchange rate volatility of the crippling currency. In particular, in order to stimulate the development of the market

for virtual assets, it is proposed to tax transactions with such assets with taxes on corporate profits, on incomes of individuals at a basic rate of 18 percent, and at a reduced rate of 5 percent (for the corporate profit tax temporarily until December 31, 2024).

The main scientific and expert department does not support the establishment of a preferential rate, as this approach may not only result in positive consequences (such as «stimulating the development of the market for virtual assets in Ukraine»), but also negative consequences. In particular, part of free investment resources can be directed not directly to the real sector of the economy, but for the purpose of financial speculation into virtual assets.

In this context, the European Commission published on 08.03.2018 the Notice «FinTech Action Plan: For a more competitive and innovative European financial sector», which equates crypto assets to financial assets, noting that the development of technological innovation has led to the emergence of new types of financial assets, such as crypt-assets. However, their use is associated with such risks as a sudden change in the value of crypt assets (volatility), fraud and improper computer security during the exchange of crypto assets. Under these conditions, it is now more expedient to use the base rate for the taxation of income (revenues) from virtual assets [22].

As regards the taxation of virtual assets using a mechanism similar to that which applies to the taxation of securities transactions (paras. 141.2, 170.2 PCs), we note that for the taxation of «virtual assets» such an approach, in our opinion, is ineffective. The fact is that the project does not stipulate requirements for transactions with virtual assets to be carried out through an intermediary (as it is established for trading in securities in part 8 of Article 17 of the Law of Ukraine «On Securities and the Stock Market»), who, in addition, also acts as a tax agent for the taxation of personal income. In this regard, we believe that even before the taxation of «virtual assets» should be applied the approach under which the relevant transactions should be performed solely through the appropriate intermediaries («cryptographic exchangers», «cryptoexchange», etc.) with the imposition of the functions of tax agents on the taxation of physical persons

Thus, in our opinion, the establishment of a special procedure for taxation of transactions with virtual assets, taking into account the risks of investing (in particular, the volatility of their course, inadequate protection of owners' rights, and the risks of fraud in this area), today is appropriate only for legal entities – taxpayers on enterprise profits to provide a separate definition of the financial result of such operations in order to eliminate its effect on the overall financial result of the taxpayer.

Under these conditions, in particular, taking into account that at the current stage of development, the market for «virtual assets» («crypto-currency», «tokens») should be considered as part of the financial services market, it would be expedient to limit the definition of appropriate public relations to the proper legal regulation of the relevant public relations only «Virtual assets» for tax purposes and equate transactions with «virtual assets» to securities transactions.

We draw attention that the adoption of the bill may lead to a decrease in revenues to state and local budgets. In this regard, taking into account the requirements of Article 91 (3) of the Rules of the Verkhovna Rada of Ukraine and Article 27 (1) of the Budget Code of Ukraine, a financial and economic substantiation (including appropriate calculations) should be added to the project. In addition, in accordance with the requirements of Article 103 of the Budget Code of Ukraine, the provision by the state of tax benefits that reduce local budget revenues should be accompanied by the provision of additional subsidies from the state budget to local budgets to compensate for the corresponding loss of local budget revenues. There are no such proposals in the project.

The lack of specialists involved in this area has led to gaps and confusion in the wording of the terms and categories in the bills. According to the authors, the lack of the goal of the adoption of a law and a clear definition of financial and legal nature – are the main drawbacks of documents. Proceeding from the research, the authors proposed to develop a separate bill, involving an active part of the cryptanalysis community, which would contain the following provisions [22–24]:

1) since the cryptoexchange has all the features of the currency except the issuer's presence, it is proposed to determine the cryptology as a special type of currency without the issuer, thereby

expanding the existing classification of world currencies; 2) to abandon the barter nature of the crippling currency; 3) to establish the National Bank of Ukraine as the main regulator of relations arising in connection with the circulation of criminals through the aforementioned financial and legal nature; 4) to refuse to restrict the purchase of cryptographic goods only to specialized financial regulators because of possible corruption risks; 5) establish procedures for carrying out AML and KYC procedures («Anti Money Laundering» and «Know your customer») in order to ensure transparency of the activities of business entities in the cryptographic market and additional guarantees of the fulfilment of obligations by users; 6) to provide real practical steps for the introduction of a preferential taxation system for extraction of mines with the subsequent introduction of changes to the tax legislation; 7) Establish clear requirements for the licensing of economic activities related to the turnover of cybercurrency, providing for moderate cost and volume of necessary documentation.

Ukraine became the first state in the post-Soviet space, which has developed a bill on the regulation of the circulation of cryptography and legal relations in the new field. It is a respect for the fact that the legislator has tried to introduce a legislative basis for innovation technology, refusing to ban and deny. In addition, it should be noted that Ukraine is ready to consider criminals as part of civil liberties. Evidence of this is the already developed state land cadastre on the basis of blockade technology.

Conclusions. Despite the rather early stage of the development of the FinTech Industry in Ukraine, in 2017 there was a significant growth of the industry with the potential to continue this trend in 2018. Powerful infrastructure in the form of high penetration of mobile communication and smartphones combined with a well-educated and technologically competent population will contribute to accelerating the development of FinTech. Given the current market demand, FinTech solutions that will focus on financial inclusiveness and the mass market will have the greatest potential for growth in 2019. Implementation of the «learning testing» approach or the so-called «regulatory sandbox» will help the development of FinTech business in Ukraine. And legislative and regulatory changes will «catch up» with this development. Continued harmonization of Ukraine's legal framework with EU directives on electronic money, remote account opening, multi-level customer identification (KYC), PSD2, open APIs and the use of third parties as agents can further contribute to the development of the FinTech Industry in Ukraine.

The integration of Ukraine into the European community, as well as the processes of globalization in the sphere of circulation of cryptography, are complicated by the lack of legal support and objective statistical information. Crypto foreign currency should be positioned at the legislative level as a monetary equivalent or determined by its separate role, made in highly developed countries. The conducted studies have shown that cryptographic goods in their essence can not be equated with the product. It has been proved that the mechanism of appearance and turnover of cryptovations is based on demand and supply. However, the functioning of a financial instrument, based on its essence, requires innovation, in particular in the field of software. Most cybercriminals are focused on ensuring anonymity of transactions, attracting more and more users. This situation requires an immediate settlement of the crippling position in the domestic FinTech industry.

References:

1. Chishti S., Barberis J. The FINTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries, *John Wiley & Sons*. 2016. 312 p
2. FinTech in Ukraine: why it is necessary to develop a market of financial technologies? URL: <http://evris.law/uk/stattja-fintech-vukraini-chomu-potribno-rozvivati-rinok-finansovih-tehnologij>
3. Frame W.S. Technological change, financial innovation and diffusion in banking. Federal Reserve Bank of Atlanta. Working Paper 2009–10. URL: <http://www.frbatlanta.org/filelegacydocs/wp0910.pdf>.
4. Buckle M. The UK financial system: Theory and Practice. Manchester: Manchester University Press, 1998. 411 p.
5. Miller M.H. Financial Innovations. The Last Twenty Years and the Next. *Journal of Financial and Quantitative Analysis*. 1986. Vol. 21. P. 459-471.

6. Tufano P. Financial Innovation. *The Handbook of the Economics of Finance*. 2003. Vol. 1. Part A. P.307–335.
7. Llewellyn D. Financial Innovation: a Basic Analysis. *Financial Innovation*, by Cavanna H. London : Routledge, 1992. 203 p.
8. Perez C. Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages. London : Edward Elgar Pub, 2002. 198 p.
9. Financial technology. URL: <https://ru.wikipedia.org/wiki>.
10. Schueffel P. Taming the Beast: A Scientific Definition of Fintech. *Journal of Innovation Management*. 2017. Vol. 4. Iss. 4. P. 32–54.
11. Morozko N.I., Didenko V.Yu. The main trends in the development of the financial technology industry: a monograph. Moscow: RUSINS, 2017. 176 p.
12. Nekrasov V. The day when Ukrainian FinTech was born: what the FinTech company is doing. *Economic truth*. URL: <https://www.epravda.com.ua/rus/publications/2018/02/26/634424/>
13. FinTech in Ukraine: trends, market overview and catalog: URL: http://data.unit.city/fintech/fgt34ko67mok/fintech_in_Ukraine_2018_ua.pdf
14. Jonathan Chiu, Thorsten Koepl. The Economics of Cryptocurrencies – Bitcoin and Beyond. Chapman University, 2017. 40 p.
15. Understanding Ethereum. CoinDesk: URL: <https://www.coindesk.com/research/understanding-ethereum-report/>.
16. Vasilchak SV, Kunitskaya-Ilyash MV, Dubyna M.P. Use of cryptographic in modern economic systems of Ukraine. *Scientific herald of the Lviv National University of Veterinary Medicine and Biotechnology named after S.Z. Gzhytsky*. 2017. No. 76. P. 19–25.
17. Galushka Ye.O., Pakon O.D. The essence of crypto currencies and the prospects for their development. *Young scientist* 2017. No. 4 (44). 634-638.
18. CoinDesk: URL: <https://www.coindesk.com>
19. Draft law on the circulation of crippling goods in Ukraine dated 06.10.2017 / The official web portal of the Verkhovna Rada of Ukraine. URL: http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=62684.
20. Draft Law on Cricket Market and Their Derivatives Market Promotion in Ukraine dated 10.10.2017 / The official web portal of the Verkhovna Rada of Ukraine. URL: http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=62710.
21. On Amendments to the Tax Code of Ukraine regarding the taxation of transactions with virtual assets in Ukraine: Draft Law of Ukraine of September 14, 2018, No. 9083 / The official web-portal of the Verkhovna Rada of Ukraine. URL: http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=64597
22. Naumov A.B., Panyuk T.P., Danylchenko L.I. The impact of social policy on the development of innovative medical insurance in Ukraine. *Scientific bulletin of Polissia*. 2017. № 1 (9). P. 55–62.
23. Gryshova I.Yu., Shestakovska T.L. The asymmetry of the resource configuration and its destructive impact on the capitalization of agribusiness. *The Scientific Papers of the Legislation Institute of the Verkhovna Rada of Ukraine*. 2017. №2. P. 128–133.
24. Gryshova I.Yu., Strielkowski W. Ukrainian labour migration in the Czech Republic. *Scientific bulletin of Polissia*. 2016. № 4(8). C. 224–231.

*** Gryshova Inna Yu. – Ph.D., chief scientific officer of the Institute of Legislation Verkhovna Rada of Ukraine.**

*** Shestakovska Tatyana L. – PhD, leading researcher Chernihiv National Technological University.**

Стаття надійшла до редакції 1 жовтня 2018 р.

THE PECULIARITIES OF THE FORMATION OF THE MECHANISMS OF THE STATE POLICY OF COUNTERACTION TO THE SHADOW ECONOMY

The article is devoted to the peculiarities of the formation of the mechanisms of the state policy of counteraction to the shadow economy. A classification of approaches has been made concerning the systematization of the principles of the formation and implementation of mechanisms of the state policy of counteraction to the shadow economy. The structure of the mechanisms of the state policy of counteraction to the shadow economy, based on general and functional principles, methods, tools the use of which is aimed at minimizing the level of shadowing and the exit of the state to a qualitatively new level by attracting the shadow sector capital for structural restructuring of the economy and increasing the share of the legal sector of the economy, has been proposed in the context of implementing a set of strategic tasks. The stages of realization of strategic guidelines of the mechanisms of the state policy of counteraction to the shadow economy have been substantiated. The system of realization of mechanisms of the state policy of counteraction to the shadow economy as a dynamic holistic environment has been proposed, which allows to influence the growth of indicators of the legal sector of the economy and includes a set of functional subsystems.

Keywords: state policy, mechanisms, shadow economy, strategic guidelines, counteraction.

Джумеля В. В. Особливості формування механізмів державної політики протидії тіньовій економіці.

Стаття присвячена особливостям формування механізмів державної політики протидії тіньовій економіці. Здійснена класифікація підходів щодо систематизації принципів формування та реалізації механізмів державної політики протидії тіньовій економіці. Запропонована структура механізмів державної політики протидії тіньовій економіці, яка ґрунтується на загальних та функціональних принципах, методах, інструментах, використання яких орієнтовано на мінімізацію рівня тінізації та виходу держави на якісно новий рівень за рахунок залучення капіталу тіньового сектора для структурної перебудови економіки і збільшення частки легального сектора економіки у контексті реалізації сукупності стратегічних завдань. Обґрунтовані етапи реалізації стратегічних орієнтирів механізмів державної політики протидії тіньовій економіці. Запропоновано систему реалізації механізмів державної політики протидії тіньовій економіці як динамічного цілісного середовища, яке дозволяє здійснювати вплив на зростання показників легального сектору економіки та включає комплекс функціональних підсистем.

Ключові слова: державна політика, механізми, тіньова економіка, стратегічні орієнтири, протидія.

Джумеля В. В. Особенности формирования механизмов государственной политики противодействия теневой экономике.

Статья посвящена особенностям формирования механизмов государственной политики противодействия теневой экономике. Осуществлена классификация подходов по систематизации принципов формирования и реализации механизмов государственной политики противодействия теневой экономике. Предложена структура механизмов государственной политики противодействия теневой экономике, основанная на общих и функциональных принципах, методах, инструментах, использование которых ориентировано на минимизацию уровня тенизации и выхода государства на качественно новый уровень за счет привлечения капитала теневого сектора для структурной перестройки экономики и увеличения доли легального сектора экономики в контексте реализации совокупности стратегических задач. Обоснованы этапы реализации стратегических ориентиров механизмов государственной политики противодействия теневой экономике. Предложена система реализации механизмов государственной политики противодействия теневой экономике как динамической целостной среды, которая позволяет оказывать влияние на