

Global Challenges and Trends in the Securities Market in Ukraine

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ABSTRACT. The article is devoted to substantiation of key global challenges and trends in the securities market in the context of digitalization of business processes, the appearance of new financial instruments and technologies, as well as the special macroeconomic situation in the country. The article uses methods of analysis and synthesis, graphical research methods, economic and statistical methods of collecting and processing information, including sampling surveys, groupings, statistical comparisons of values, trend analysis – in evaluation process of the state of the derivatives market, as well as logical generalization – in formulation of the conclusions. The statistical and information base of the study were monographic studies and periodicals of domestic and foreign economists, materials and analytical reports of the World Bank and the International Bank for Reconstruction and Development, the National Commission on Securities and Stock Market, open information Internet resources.

It is noted that a characteristic feature of economic development is the ability to do business. It is the high level of ease of doing business, calculated on the basis of 15 indicators, due to the reduction of bureaucracy and corruption, protection of property rights and investments, that positively affects the development of innovation and technology, creates trade and financial freedom and creates per-conditions for investment climate and the development of the securities market in the country. In this context, the analysis of the macroeconomic situation in Ukraine and the ease of doing business with the help of relevant indicators calculated by the World Bank, the place of the country among 167 countries of the world, in accordance with this indicator, was estimated. It was noted that an important indicator that characterizes the growth of the country's economy is the GDP per capita. The author's own position on the possibility of its rapid development in the country over the next five years was given.

The low level of development of derivative financial instruments in the domestic securities market in comparison with foreign counterparts was estimated. The critical characteristic of the legislative and regulatory decisions regulating activity with derivative securities in Ukraine was given.

The significant impact of digitalization of business processes on the development of innovative financial instruments and technologies and as a consequence of the appearance of cryptocurrencies and blockchain technology has been substantiated. From an online medium, they are transforming into a highly liquid means of payment, taxed and regulated by central banks, as well as an independent investment instrument. Positive examples of their application in the world, as well as prospects for their development in Ukraine have been given.

* This article was translated from its original in Ukrainian.

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The article proves that, in order to effectively develop the securities market, it is necessary to improve the macroeconomic situation in the country, increase the ease of doing business, introduce innovative financial instruments and take into account the rapid global development of digital technologies in business. The results of the work can be used in further research and practical developments in the field of formation and substantiation of patterns of development of the domestic securities market.

KEY WORDS: globalization, global challenges, securities market, world economy, financial innovation, digitalization of business processes, blockchain, cryptocurrencies

Introduction

The world securities market in recent decades is characterized by a high level of dynamism, an increase in the level of its digitalization, it is developing under the influence of globalization, which is based on the movement of capital. Unimpeded movement of capital leads to an anticipatory growth of financial services. National securities markets can be considered to be the most influenced by the positive and negative effects of globalization, due to the widespread use of securities trading in the secondary market. Globalization of financial relations in the securities market involves the formation of a global securities market by overcoming legal and economic barriers between national securities markets. The main global challenges that in recent years determine the development trends of the domestic securities market are: place of Ukraine in the global economic space, digitalization of economic processes and, as a consequence, the introduction and development of financial innovations.

In this context, the study of modern world practice and the latest trends in the securities market will allow to identify areas for further development in Ukraine. Theoretical and methodological aspects of the formation and development of the domestic securities market, features of infrastructure and instrumental content, legal framework and institutional support are problems that are studied and covered in the publications of domestic and foreign scholars. Among the domestic scholars the authors, who reveal the problems of formation and development of the securities market of Ukraine, should be noted the following scholars: M. Haponiuk³, I. Liutyi⁴, S. Onyshko⁵,

³ Haponiuk, M. A. Infrastructure of the stock market of Ukraine: problematic issues and prospects for development (ukr. Infrastruktura fondovoho Sayty Vsyia Ukrainy: problemni pytannya ta perspektyvy rozvytku). *Zbirnyk prats' NU DPS Ukrainy*. No 2. (2010): 36-44. [In Ukrainian].

⁴ Lyutyi, I. O. Financial infrastructure: an innovative approach to financial research (ukr. Finansova infrastruktura: innovatsiyny pidkhid do doslidzhennya finansiv). *Finansy Ukrainy*. no. 4 (2017): 121-125. [In Ukrainian].

⁵ *Innovatyka na finansovykh rynkakh*. Ed. S. V. Onyshko. Irpin': Un-t DFS Ukrainy: (2018). 465 p. [In Ukrainian].

I. Rekunen⁶, N. Sheludko⁷, V. Oparin and Fedosov V.⁸ and others. The study of the basics of institutionalization, namely, the legal support of the securities market, conducted by the scholars below, should also be noted. Yu. Kovalenko⁹, D. Leonov¹⁰, O. Mozhovyi¹¹, N. Riazanova¹², V. Oparin and Fedosov V.¹³ and others. These authors reveal the problematic issues of development of the securities market and form proposals for possible solutions. At the same time, there is an increase in the research interest of scientists (D. Lukianenko¹⁴, O. Patsenko and E. Molchanova¹⁵, Ye. Redziuk¹⁶, E. Naiman¹⁷, A. Fedorenko¹⁸ and others) to the impact of globalization processes on the domestic securities market. Noting the importance of the contribution of fundamental research of these scientists in the development of theory and practice of the domestic securities market, we believe that the dynamic development of world securities markets and their globalization create new challenges and necessitates further work on the development of the domestic securities market, the impact of global digitalization of business processes and the formation of innovative financial instruments.

⁶ Rekunen, I. I. *Infrastructure of the financial market of Ukraine: current state and prospects of development* (ukr. Infrastruktura finansovoho rynku Ukrayiny: suchasnyy stan ta perspektyvy rozvytku). Sumy: DVNZ "UABS NBU". 2013: 411 p. [In Ukrainian].

⁷ Shelud'ko, N. M. (2008). Credit mechanism for investment policy implementation (ukr. Kredytnyy mekhanizm realizatsiyi investytsynoyi polityky). Thesis abstract for Doc. Sc. (Economics), Kyiv, Ukraine. [In Ukrainian].

⁸ *Financial infrastructure of Ukraine: state, problems and prospects of development* (ukr. Finansova infrastruktura Ukrayiny: stan, problemy ta perspektyvy rozvytku). Ed. V. Oparin, V. Fedosov. K.: KNEU, 2016: 695 p. [In Ukrainian].

⁹ Kovalenko, Yu. M. *Institutionalization of the financial sector of the economy* (ukr. Instytutstyalizatsiya finansovoho sektoru ekonomiky). Irpin': NU DPS Ukrayiny; (2013). 606 p. [In Ukrainian].

¹⁰ *Financial services market: the paradigm of European integration* (ukr. Rynok finansovykh posluh: paradyhma yevrointehratsiyi). Ed. V. M. Fedosov. UIRFR. 2008: 848 p. [In Ukrainian].

¹¹ Mozhovyi, O. M. (1999). *Formuvannya systemy rehulyuvannya fondovoho rynku Ukrayiny (metodolohiya i orhanizatsiya)*. Thesis for Doc. Sc. (Economics), Kyiv, Ukraine. — 360 p. [In Ukrainian].

¹² Ryzanova, N. *Instytut finansovoho rakhivnystva informatsiynoho suspil'stva: sutnist' ta suchasna paradyhma rozvytku*. Kyiv: KNEU. 2017: 337 p. [In Ukrainian].

¹³ *Innovatsiyi u finansoviy sferi*. Ed. V. M. Oparin. DVNZ. "KNEU named after V/ Hetman, In-t fin.-innovats. doslidzh. KNEU: (2013). 444 p. [In Ukrainian].

¹⁴ Luk'yanenko, D. H. *Stratehiyi ekonomichnoho rozvytku v umovakh hlobalizatsiyi*. KNEU: (2001): 538 p. [In Ukrainian].

¹⁵ Patsenko Oleh, Ellana Molchanova. Special Features of Development of the Present World Financial Market Structure. *International Economic Policy*, Vol. 1-2, no. 16-17 (2012): 177-206.

¹⁶ Redziuk, Ye. V. Rozvytok rynku tsinnykh papieriv Ukrayiny v umovakh hlobalizatsiyi: vyklyky ta mozhyvosti. *Finansy Ukrayiny*. no 5. (2016): 112-126. [In Ukrainian].

¹⁷ Nayman, E. *Stratehichne tarhetuvannya Ukrayiny 2015—2040: prezentatsiya do dopovidi na konferentsiyi "Ekonomika Ukrayiny. Shlyakh vid zanepadu do protsvitannya*. <http://www.slideshare.net/dlubkin/20152040>. [In Ukrainian].

¹⁸ Fedorenko, A. V. Ways of integration of the national stock market of Ukraine into world capital markets (ukr. Shlyakhy intehratsiyi natsional'noho fondovoho rynku Ukrayiny v svitovi rynky kapitalu). *Visnyk Ternopil's'koho natsional'noho ekonomichnoho universytetu*. No 3. (2009), p. 7–19. [In Ukrainian].

Ukraine in the global economic environment

The efficiency of the economic development of any country in the world depends on the actions of its government and is determined by its macroeconomic policy. It is determined by the country's place in the global economic environment in conditions of transparency of national economies.

The analysis of the securities market development in the context of evaluation of the social and economic development of the country is so multifaceted that it requires consideration of both the main macroeconomic indicators and individual domestic social and economic indicators.

Forbes magazine published a ranking of the most suitable countries for doing business in 2019, where Ukraine was ranked 77th out of 161 (inflation was estimated at 14.4%, GDP growth — 2.5%, and the negative trade balance — 1.9%).¹⁹ The first place in the ranking was taken by Great Britain, the second place was taken by Sweden, and the third — by Hong Kong. The Top 10 ranking includes the following countries: The Netherlands, New Zealand, Canada, Denmark, Singapore, Australia and Switzerland. When calculating the rating, 15 different indicators were taken into account: protection of property rights, innovation, taxes, technology, corruption, market size, political risks, living standards, quality of labor, personal, trade and financial freedom, bureaucracy and investment security (Fig. 1)

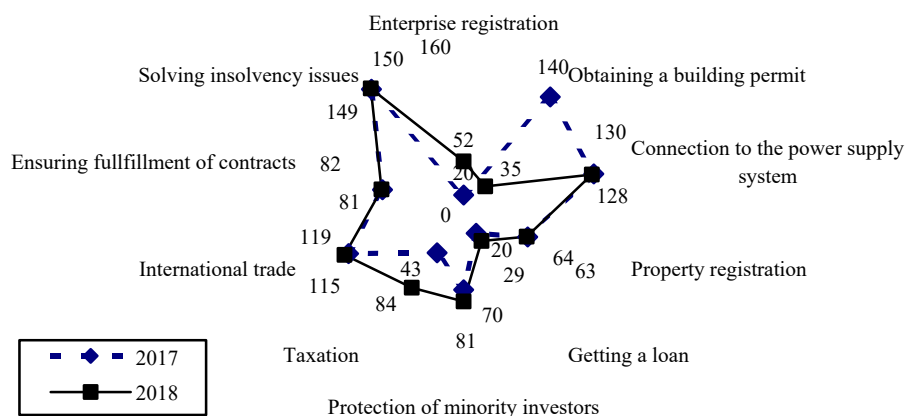


Fig. 1. Change of positions of Ukraine according to the main indicators of the ease of doing business ranking during 2017-2018²⁰.

¹⁹ Best Countries for the Business. Forbes. URL: <https://www.forbes.com/best-countries-for-business/list/#tab:overall>

²⁰ Developed by the author in accordance with the data of Doing Business International Bank for Reconstruction and Development / The World Bank. URL: <http://www.doingbusiness.org/content/>

Over the year, Ukraine improved its position in the ease of doing business ranking by 4 positions, rising from the 80th to the 76th place. Positive changes occurred in 4 of the 10 main components of the study. Moreover, a significant improvement in positions can be noted only in two of them – “obtaining a building permit” for which the country ranked 35th against 140 in the 2017 ranking and the indicator of “taxation” (43rd place against 84).

According to the indicator of international trade, it measures the time and financial costs of passing the stages required for the export or import of goods: Ukraine complied with 119th place in the ranking for compliance with the established requirements for the execution of documents and for compliance with the requirements of border and customs control. The worst rating indicator of Ukraine, as of last year, is the solution of insolvency problems (149th place among 190 countries), which examines the time and financial costs, as well as the end result of the process of resolving insolvency issues of an enterprise.

According to the rankings of the development of the institutional and legal field, Ukraine improved its position during 2016-2018, entering the top 50 countries according to the ranking of army capacity. However, according to other indicators, as we noted above, Ukraine is “lagging behind”. This is primarily due to hostilities in eastern Ukraine, the annexation of Crimea, political instability, corruption and incomplete judicial system. The inefficiency of public administration of economic processes causes crises in the financial sector. At the same time, the securities market is experiencing chaos, accompanied by the withdrawal of capital, destabilization of the state of enterprises and financial institutions, reduction off the liquidity of assets, increase of unpredictability and freezing of investment in the real and financial sectors of the economy²¹. In 2019, the Prime Minister of Ukraine declared a course for economic growth of 40% over the next 5 years. One of the best indicators of the country's economic growth is the GDP per capita (ideally it should be calculated in comparable prices to be able to compare with other countries). On the one hand, it seems quite real for this indicator to grow by 6.96% annually, but on the other hand, if you look at the statistics of Ukraine in 2018 there is an increase in GDP per capita “+3.86”% per year over the past 5 years the average increase was “-0.32”%, for the last 10 years “-0.66”%, and for the last 20 years on average “+3.11”%. In our opinion, today Ukraine should

dam/doingBusiness/media/Annual-Reports/English/DB2018-Full-Report.pdf; Doing Business-2019. International Bank for Reconstruction and Development / The World Bank. URL: http://www.worldbank.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report_web-version.pdf

²¹ Redzyuk, Ye. V. Rozvytok rynku tsinnykh paperiv Ukrainy v umovakh hlobalizatsiyi: vyklyky ta mozhyvosti. *Finansy Ukrainy*. no 5. (2016): 112-126. [In Ukrainian].

focus its efforts on improvement of the macroeconomic situation and creation of an effective business environment, improvement of its position in the international geopolitical space.

Geopolitical, state and financial crises lead to the search for individuals and entrepreneurs to find alternative ways to store and increase funds. The modern consumer feels an urgent need for prompt and secure payments, security, the absence of third parties, the independence of the value of the financial asset from the political situation in the country. There is a need to develop and implement innovative financial instruments that can meet this need.

Derivatives in the global securities market

In the 90s of the twentieth century, derivative financial instruments (forwards, futures, swaps, options) and hybrid instruments (futures contract option, bi-currency bond, synthetic stock, etc.) became objects of exchange trading and within a short period of time have become so popular that for them specialized exchanges (Chicago Board Options Exchange, London International Financial Futures and Options Exchange, European Exchange, etc.) were created. Today, the global market for securities, including derivatives, despite the bankruptcy of well-known banks, continues to grow dynamically. The market of derivative financial assets in economically developed countries serves as an indicator of the state and prospects of change in both national and world economies.

Trends in the global derivatives market are positive. The dynamics of exchange trading in derivative securities is ascending, the types and number of derivatives are increasing, which generally shows their significant growth (Fig. 2.).

The largest share among derivatives is occupied by interest rate contracts (75% in 2018). This type of derivative securities is characterized by increased demand and is due to constant fluctuations in interest rates. In developing countries, companies are not able to adequately respond to this, so credit and financial resources are scarce for them. Therefore, it is derivative interest rate contracts that can effectively balance the financial interests of participants with different levels of creditworthiness in the market. Interest rate derivatives are followed by foreign exchange derivatives (12% of the total). There are characteristic differences between them: among currency derivatives, forward contracts predominate, while among interest derivatives, the share of swap contracts is the highest (more than 70%). This situation is explained by the fact that under the terms of an interest rate swap contract, companies with low credit ratings have the opportunity to

raise money capital at a fixed interest rate, which reduces the credit risk that would normally arise when lending by a banking institution. As it can be seen, the global market for derivative financial instruments is large-scale and combines a significant number of derivative contracts to hedge various risks: currency, interest rate, credit and other financial risks.

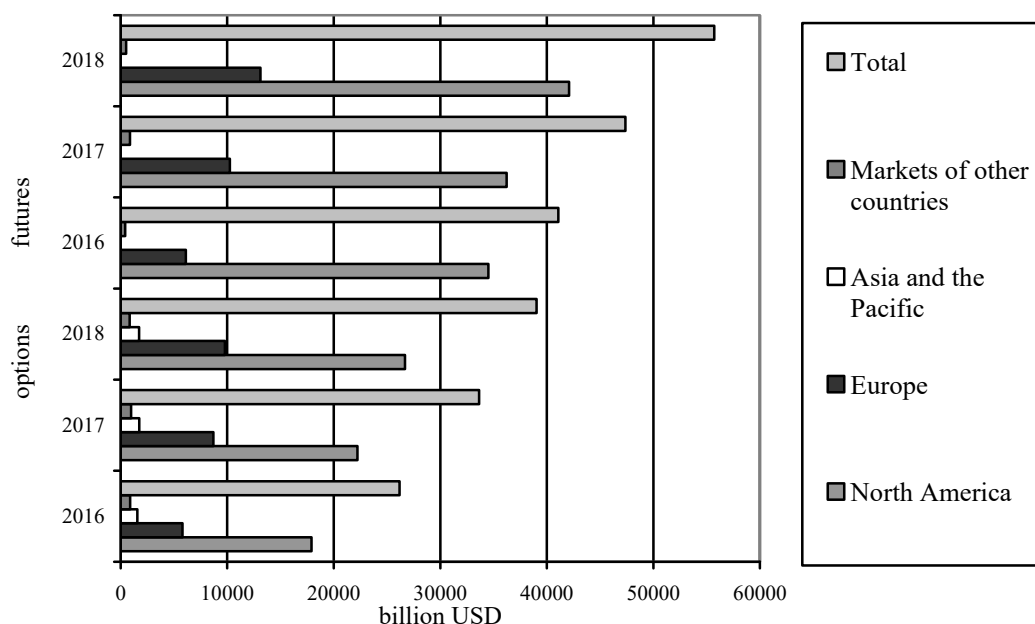


Fig. 2. Volumes of world exchange trading in futures and options during 2016-2018²²

The use of derivatives in the global securities market has gone through three stages of development and is currently in the fourth stage. The first stage was characterized by the use of dealer-initiated financial instruments in certain transactions to manage a growing portfolio of illiquid assets. In the second stage, this tool was used by investors with financial assets, namely by government and corporate securities. Accounting for the underlying asset on their own balance sheets, dealers sold risks in commercial form (through swaps or structured bills) to investors. In the third stage, dealers “compiled” trading transactions and cross-hedged them, managing portfolio risks in the same way as they managed risks via interest rate derivatives. In the fourth stage of

²² Developed by the author in accordance with the data: Exchange-traded futures and options, by location of exchange. URL: <http://stats.bis.org/statx/srs/table/d1>

development, where the market is today, an analysis of the negative consequences and causes of the derivatives market on the depth of the crisis in the world economy, new approaches to regulatory laws and regulations are discussed and developed with the aim to facilitate their proper implementation by derivatives market²³.

The derivatives market should perform two functions. The first is the redistribution of risks among business entities (it reflects hedging transactions), the second is the redistribution of income between market participants in futures transactions (related to speculative transactions)²⁴. In addition to these two functions, there are the following²⁵:

- certification of rights arising from the possession of major financial assets (futures, options, warrants);
- assurance of the functioning of major financial assets;
- the possibility of using derivatives in order to ensure the stability of the financial condition of economic entities in a volatile market economy;
- hedging (insurance) of owners of financial assets against changes in the value of the financial asset in the future (futures, options);
- penetration of financial assets on foreign stock exchanges (depository receipts), etc.

In Ukraine, trade in derivatives stated in 1995, but is still in its infancy. The volume of trade in derivatives is insignificant and decreases during the analyzed period, while the range of these instruments is extremely limited. The market for derivative financial instruments in Ukraine does not fulfill its main purpose — risk hedging, but operates mainly to meet the needs of speculation²⁶. Today the level of development of domestic exchange activity by derivative financial instruments remains extremely unsatisfactory. This situation is due to the following problems:

- low level of liquidity of derivative financial instruments;
- high volatility, although it is rather a negative factor given the low liquidity. Otherwise, given the appropriate level of market

²³ *Diyal'nist' bankiv na kredytnomu rynku v umovakh asymetriyi informatsiyi*. Ed. L. V. Kuznyetsova. Odesa: ONEU: (2015). 292 p. [In Ukrainian].

²⁴ Hordon, V. B. (2005). *Rynok pokhidnikh finansovykh instrumentiv ta perspektyvy yoho rozvytku v Ukraini*, Thesis abstract for Cand. Sc. (Economics), Kyiv, Ukraine [In Ukrainian].

²⁵ Hoffe, V. V. (2005). *Rynok deryvatyviv: zarubizhnyy dosvid ta perspektyvy rozvytku v Ukraini*, Thesis abstract for Cand. Sc. (Economics), Kyiv, Ukraine [In Ukrainian]; Ivashchuk, N. L. *Rynok deryvatyviv: ekonomiko-matematychne modelyuvannya protsesiv tsinoutvorennya*. L'viv: NU: (2008). 472 p. [In Ukrainian]; *Mishchenko, V. I. Finansovi deryvatyvy: analitychni ta oblikovi aspekty*. KNEU, 2012. — 263 p. [In Ukrainian]; Prymostka, L. O., Bereslavs'ka, O. V. Rol' i funktsiyi strokovoho rynku v ekonomichniy systemi. *Visnyk NBU*. No. 8 (2012): 16–17. [In Ukrainian].

²⁶ Lysa, O. V. *Napryamy rozvytku rynku deryvatyviv v Ukraini*. *Naukovyy visnyk Khersons'koho derzhavnoho universytetu*. No. 5 (2014): 80–83. [In Ukrainian].

capitalization of derivatives, it is the volatility that attracts speculative traders;

– narrow range of exchange instruments, etc.

In general, the low level of development of the derivatives market in Ukraine is a consequence of a significant number of problems, both strategic and operational. One of them is the lack of a clear and systematic regulatory framework in this area. Thus, the Law of Ukraine “On Securities and Stock Market”²⁷ identifies the concepts of “derivative securities” and “derivatives”. However, these concepts are not identical, which is the main mistake of the legislator.

The category “derivative” means a financial instrument, the mechanism of issue and circulation of which is associated with the purchase and sale of certain financial or tangible assets and the value of which is derived from the value of underlying instruments which are the basis of the transaction²⁸.

An important feature of domestic derivatives is their difference from foreign basic assets, which is the next problem in the development of the domestic derivatives exchange market. Today, three types of underlying assets are allowed in Ukraine: securities, commodities and funds. In addition, there are restrictions on their issuers, in particular, issuers of options can be only legal entities – securities traders who are members of stock exchanges or trading information systems and must meet mandatory standards of adequacy of their own funds and other indicators²⁹. The legal framework for the issuance and circulation of derivatives in the domestic market is similar to a puzzle, which consists in part of the articles of the Tax Code of Ukraine³⁰, the Laws of Ukraine “On Securities and Stock Market”³¹, “On Private Pension Provision”³², “On Joint Investment Institutions”³³, Resolutions of the Cabinet of Ministers “On approval of the Regulation on requirements for standard (typical) form of derivatives”³⁴, Decision of the National Commission on Securities and Stock Market “On approval of the Procedure for registration and issuance of option certificates and their issue prospectus”³⁵, Resolutions of the National Bank of Ukraine Board

²⁷ *Pro tsinni papery ta fondovyy rynok*. <http://zakon4.rada.gov.ua/laws/show/3480-15>

²⁸ Khomenko, V. Problemy zakonodavchoho rehulyuvannya rynku deryvatyviv v Ukrayini. *Liga zakon*. http://ifrs.ligazakon.ua/ua/magazine_article/FZ000860

²⁹ *Zakonodavcho-pravova baza Ukrainy*. <http://zakon.rada.gov.ua/cgi-bin/laws/>. [In Ukrainian].

³⁰ *Podatkovyy kodeks Ukrainy*. http://www.zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=2755_17. [In Ukrainian].

³¹ *Pro tsinni papery ta fondovyy rynok*. <http://zakon4.rada.gov.ua/laws/show/3480-15>

³² *Pro nederzhavne pensiine zabezpechennia*: Zakon Ukrainy. <http://zakon2.rada.gov.ua/laws/show/1057-15>

³³ *Pro instytuty spil'noho investuvannya*. <http://zakon2.rada.gov.ua/laws/show/5080-17>. [In Ukrainian].

³⁴ *Pro zatverdzhennya Polozhennya pro vymohy do standartnoyi (typovoyi) formy deryvatyviv*. <http://zakon5.rada.gov.ua/laws/show/632-99-%D0%BF>. [In Ukrainian].

³⁵ *Pro zatverdzhennya Poryadku reyestratsiyi ta vypusku optsonnykh sertyfikativ ta prospektu yikh emisiyi*. <http://zakon5.rada.gov.ua/laws/show/z0916-09>. [In Ukrainian].

“Regulations on the procedure for approval by the National Bank of Ukraine of standard (exemplary) forms of derivatives”³⁶, etc. The main problem is that all these documents do not follow a single regulatory approach to the regulation of the derivatives market. Since the underlying asset of derivatives can be both securities and commodities or funds, accordingly, there should be separate bodies authorized to regulate the issuance and circulation of various types of derivatives: National Commission on Securities and Stock Market, National Bank of Ukraine and the body that regulates the circulation of commodity derivatives. Today, in fact, the functions of these three entities are performed by the National Commission on Securities and Stock Market.

In 2013, there was an attempt to adopt a law on derivatives, which addressed a number of key issues: requirements for derivatives market participants, trade organizers, traders, provisions on securities clearing, ways to reduce the risk of default on futures contracts, features of option certificates and stock warrants, as well as government regulation and control of these processes.³⁷ Although it was never adopted, today the value of this regulation is extremely high, given the large-scale financial turnover in the global derivatives market and forecasts for their further growth. Although the derivatives market in Ukraine is young, it already needs legal regulation and has a significant impact on the state's economy.

In addition, the mechanism of circulation of derivatives (forward, futures and swap contracts) is not fully understood due to the low level of protection of the rights and interests of both creditors and debtors. The buyer and seller have their own obligations and the right to demand their fulfillment, so when the creditor and the debtor alienate the contract, there is a variation margin. The debtor is not interested in paying it, and this is the problem. Domestic scholars suggest (according to Bielov V. A.) to draw up a futures contract with 2 documents: one for the buyer, the other for the seller. Therefore, the buyer will have the right within the period specified by the buyer's futures, to demand payment of the variation margin in case of its formation. However, this model is imperfect because it is very similar to the mechanism of options and does not solve the original problem: the possibility of non-payment of the variation margin in case of change of roles³⁸. The way out of this situation may be the regulation and accounting of the subjects of

³⁶ *Polozhennya pro poriadok pohodzhennya Natsional'nym bankom Ukrayiny typovykh (zrazkovykh) form deryvatyviv*. <http://www.bank.gov.ua/doccatalog/document?id=12561355>. [In Ukrainian].

³⁷ Khomenko, V. *Problemy zakonodavchoho rehuluvannya rynku deryvatyviv v Ukrayini. Liga zakon*. http://ifrs.ligazakon.ua/ua/magazine_article/FZ000860. [In Ukrainian].

³⁸ Kolodizyev, O. M., Kotsyuba, O. V. *Analiz perspektyv rozvytku rynku deryvatyviv v Ukrayini z urakhuvanniam vyrishennya problemy yoho normatyvno-pravovoho rehuluvannya. Problemy ekonomiky. no. 1 (2016): 242-248*. [In Ukrainian].

derivative contracts by clearing institutions. Since 2013 the Settlement center has regulated the performance of clearing organizations' responsibilities³⁹ at the legislative level, but derivatives are still equated to other securities, so the quality of this regulation is low.

Digitization of business processes and the appearance of new tools in the global securities market

Observing the economic and social processes in the world, we can say that society is entering a new stage of development, where information plays an important role. In the context of global development of digitalization of business processes, the appearance of new technologies in the securities market is a consistent phenomenon.

Digitalization characterizes the digitization of the physical world and physical interaction into a new, digital plane, where information and digitized objects of the physical world can acquire any previously extrinsic characteristics. This is a world where a large amount of information is transmitted in a very fast way and everyone has equal access to available information and its formation.

Digitalization is a digital breakthrough – a phenomenon of radical change and progress caused by new digital technologies and innovative digital business models. This phenomenon allowed such giants as Google, Facebook, Alibaba, Uber to appear on the market, made it possible to create the first iPhone and the entire era of smartphones.

For the past 25 years, digitalization has remained the fastest way to increase capital and enrich people. In the world, the largest amount of investment continues to come from companies with a digital business model and companies that produce digital technologies. Reducing the cost of development of IT technologies and increasing demand for them, as well as increasing investment in new financial products lead to an increase in the number of companies in this area. The development of new technologies, their introduction into all spheres of human activity necessitate profound changes in global markets. Automation, robotics and intellectualization become “rampant” technological processes. There is a technological transformation of the financial system on the way. The global financial crisis, distrust to the traditional financial system, increased demand for innovative financial technologies, and a decrease in the cost of launching IT products led to an increase in the number of fintech companies. In particular, from 2013 to 2018, the volume of investments in fintech companies in the world increased from USD 18.9

³⁹ Shishkov, S. Spasut li fondovyy rynek derivativy. Informatsionnyy portal o lichnykh investitsiyakh i finansakh “Investfunds. <http://www.investfunds.ua/news/spasut-li-fondovyyj-rynokderivativy-forbes-ukraina-126709/> [In Ukrainian].

billion up to USD 111.8 billion. (Fig. 3), while the cost of launching IT products from 2000 to 2018 decreased from USD 5 million up to USD 5 thousand and continues to decline further.

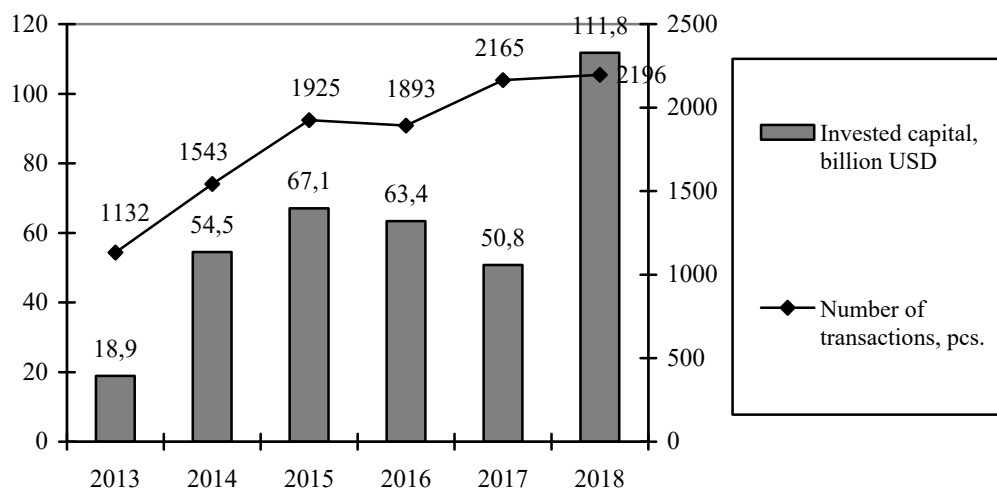


Fig. 3. Global investment in fintech companies during 2013-2018⁴⁰

Innovative digital financial products such as: Bitcoin, Litecoin, Ethereum, Dash, Monero have made a powerful step forward in a short period of time. Users do not need to spend money on intermediaries in the process of conclusion of trading transactions, since you can use a crypto wallet on your computer or store funds online on a specific service.

The relevance of the cryptocurrency to the securities market is not in doubt due to the presence of the exchange-traded investment fund Bitcoin Investment Trust, whose shares are freely traded under the GBTC ticker on over-the-counter trading platforms. In 2015, the Bitcoin Investment Trust received regulatory approval and became the first public Bitcoin Fund to enter the OTC Markets platform. From the name of the fund, it is clear that its assets are formed from the Bitcoin cryptocurrency.

The cryptocurrency market is very young, almost unregulated, so there are many fraudsters who profit from a popular topic, forming financial pyramids or fraudulent schemes under the guise of new revolutionary companies that develop innovative financial technologies. Most often, the price of such cryptocurrencies is based solely on

⁴⁰ Developed by the author in accordance with the data of The Pulse of Fintech in 2018. <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf>

speculation and deception. However, this does not mean that absolutely all alternative cryptocurrencies are fraudulent. Some altcoins have a completely transparent pricing model, in particular, Ether, Dash, Ripple, Litecoin, NEM, Monero, which really form the value, and their value is due to not only pure speculation⁴¹. The rapid increase in the value of bitcoin during 2017-2018⁴² is logical. The growth of the user base and the growth of "filling" this database with money causes the growing value of bitcoin. As in any economic system, this value directly depends on the number of participants involved in the functioning of this system. The axiom is that the size of the economy is proportional to the square of the number of participants, not the number itself, so the value of bitcoin grows much faster than the user base does. In fact, bitcoin is just a financial protocol designed to implement, validate and store transaction information among members of a virtual network. Because the bitcoin code is publicly available, each participant has the opportunity to learn how the entire virtual network works. However, some participants cannot simply keep the bitcoins of other participants.

In terms of content, bitcoin is a form of digital currency used by network members. The number of virtual wallets for its storage today already exceeds 8 million worldwide. Of course, there are a significant number of factors that shape the price of a currency, but one of the main is the volume of demand for the currency and the number of users of this currency. Therefore, it is logical that with the expansion of the user network, the price of bitcoin continues to rise. This is natural for any currency, including bitcoin⁴³.

At the cryptocurrency exchange (virtual platforms) you can exchange some cryptocurrencies for others. On cryptocurrency exchanges you can meet traders, investors and ordinary people who need to exchange money. They all use exchanges either to make money or to exchange money. Cryptocurrency exchanges can be used in the same way as stock exchanges, where traders earn on them on the same principle. At this stage, they are more attractive to investors than traditional analogues, because cryptocurrency has high volatility. If a trader in the traditional market earns 9% on stock price fluctuations (and this is considered a good indicator), then in the crypto market, where currencies can grow by 20% per day, an investor with the necessary skills and experience can receive a significant profit. Some traders carry out transactions within

⁴¹ *Bitcoin – finansovaya piramida: pravda ili mif?* Obozrevatel. <https://cryptonet.biz/ru/bitkoin-finansovaya-piramida-pravda-ili-mif/> [In Russian].

⁴² *Bitcoin price.* <https://www.coindesk.com/price/>

⁴³ *Bitcoin – finansovaya piramida: pravda ili mif?* Obozrevatel. <https://cryptonet.biz/ru/bitkoin-finansovaya-piramida-pravda-ili-mif/> [In Russian].

not one, but several exchanges. Thus, they earn not only on exchange rate fluctuations relative to others, but also on exchange rate differences of the same currency on different exchanges. However, traders do the same on traditional stock exchanges.

There is no doubt that the share of cryptocurrency trading in the world will continue to grow due to its advantages over traditional financial instruments. Firstly, it is the possibility of making a profit due to fluctuations in the prices of the relevant exchange asset, and secondly, the possibility of protection against changes in market prices for the exchange asset. Cryptocurrencies need to be regulated, otherwise the situation risks getting out of control as more investors invest in these digital assets. Let us recall the situation in 2017, in Europe, individuals using a computer virus blocked the internal data systems of several companies and demanded a ransom in bitcoin. Some did pay, after that bitcoins were exchanged for another cryptocurrency on a digital platform based in the Zug, Swiss city⁴⁴. The scale of the economic potential of cryptocurrencies depends on how this market will be regulated. In addition, the status of not only cryptocurrencies, but also ICOs, open-end investment and exchange-traded funds, related digital platforms and many other things related to cryptocurrency should be regulated by law.

Methods of state regulation of the cryptocurrency market can be different: repressive measures, such as in China, or the possibility of free circulation in the status of “foreign currency”, as in Switzerland.

The following state regulation instruments can be distinguished tax regulation (applied in USA, Argentina, Singapore), licensing (Japan), equating mining to business (Belarus), official registration of exchanges (USA, Japan, Luxembourg, Russia, Belarus, etc.), KYC-procedure for registration on exchanges, exchange sites and wallets (USA, UK, etc.), recognition of the legality of ICO (Russia, Belarus), recognition of cryptocurrency as an investment asset (USA — bitcoin futures, Poland — futures, Hong Kong — cryptocurrency equated to securities); recognition of cryptocurrency as a payment instrument⁴⁵. The main problem of state regulation of the cryptocurrency market is that almost all of the above instruments can be bypassed. Therefore, the actual regulation of cryptocurrency, its circulation and use can be effective in two cases: (1) if the introduction of cryptocurrency into the country's economy is so tight that it will be impossible to do without government

⁴⁴ *Rynok kriptovalyut: zachem nuzhno regulirovanie i kak eto proiskhodit v drugikh stranakh. Obozrevatel.* <https://www.obozrevatel.com/economics/business-and-finance/rynok-kriptovalyut-zachem-nuzhno-regulirovanie-i-kak-eto-proiskhodit-v-drugih-stranah.htm> [In Russian].

⁴⁵ *Regulirovanie rynka kriptovalyut: nedostatki i preimushchestva. Cryptonet.* <https://cryptonet.biz/ru/regulirovanie-rynka-kriptovalyut-nedostatki-i-preimushchestva/> [In Russian].

regulation and cryptocurrency markets will be forced to interact with government regulators and supervisors; (2) if a draft law on methods of controlling the cryptocurrency market, similar in essence and significance, is introduced by all states at the same time. Both the first case and the second case are currently unlikely, so the question of the need for state regulation of cryptocurrency will be on the agenda for a long time, both at the state and global level. However, there is no doubt that the regulation of cryptocurrencies has a number of advantages for investors. Firstly, this increases security. Today's mechanisms for protection of investors from unscrupulous market participants are far from ideal, and there are no reliable means of protection of an investor's funds in the event of a project failure. Therefore, government regulation can solve this problem.

The term "bitcoin" is very often associated with the term "blockchain", which means "chain of blocks". Let us dwell on this in more detail. The database (data on transactions) must have a place where they are stored. The blockchain is the tool that allows you to store this data. This explains the fact that blockchain technology is now used not only in transactions with bitcoins and latcoins, but also arouses great interest among financial institutions. For example, in 2016, Bank of America and Microsoft informed the market of the importance of development and implementation of a blockchain platform, while in the same year, Israeli startup Wave, Bank of Britain Barclays and Ireland's Ornuia issued a USD 100,000 letter of credit. The basis of this operation was the process of cryptography and automated data encryption, which reduced the time of this transaction from seven days to four hours. Users of blockchain technology have experienced a positive result due to the high level of security of the transaction, its speed and, most importantly, anonymity regarding the parties to the transaction.

The use of blockchain technology in the process of introduction and subsequent circulation of cryptocurrencies is due to the need for central banks to optimize the process of speculation in the monetary supply market. Subsequently, in practice, this aroused the interest of speculators, increased demand for cryptocurrency and led to significant volatility in the value of this asset. Financial institutions, in particular banking institutions, were initially quite cautious about this innovation, observing and waiting for the results of the implementation. As soon as blockchain technology proved to be an effective tool, financial institutions began working with IT companies to find and develop technical solutions for their activities.

Gradually, the institutions of the financial sector of the economy began to use this technology. Virtually all financial transactions, in

particular, the issuance of securities were executed instantly, and it saved time in the amount of about several hours to several weeks. Information about the effectiveness of this kind of tool spread quickly. Therefore, payment system institutions, such as: Western Union and MoneyGramm became interested in the possibility of implementation of blockchain technology in their activities. At present, we can name the existing platforms for the issuance of financial instruments and further clearing of these transactions. These are: Digital Asset Holdings. R3 and Hyperledger — for trading on the financial market and customer identification.

Today, the main advantage of blockchain technology is the transparency of transactions and the ability to scale them so that each counterparty has a complete information base on any actions of all parties to the transaction. The complete chain of transactions is copied and stored in a verified form by each of the counterparties, thus ensuring an appropriate level of transparency of the transaction. Blockchain technology does not have a single command and control center where data on transaction participants can be manipulated. Blockchain is the newest form of self-organization of business entities in order to be able to maintain a competitive position in the market for as long as possible. As in the context of globalization of the world economy, national borders are not always able to protect the interests of economic agents, so their search for institutional innovations — the latest forms of doing business are extremely important.

In 2017, the World Economic Forum included the blockchain in the list of the top 10 most promising technologies. Economists acknowledge that the use of blockchain can have a profound effect on the modern economic market. The structure of the decentralized digital register of these transactions makes it possible to be used simultaneously by all market participants, which allows to make transactions and do business much faster and easier.

Within the European Union, blockchain technology has been actively used by energy companies to market electricity. In particular, in May 2017, the Enerchain trading platform started operating in a test mode with some of the largest European energy companies currently present: E.ON, RWE, Uniper, Total, Statoil, OMV, Enel, Engie. The main advantage of this system is the availability of: information among participants on the financial condition of companies in the online network; financial and non-financial (“full sustainability”) indicators by which participants can analyze the state of counterparties; investment companies to this system and the possibility of investment operations and risk insurance transaction. There is planned to launch China's greenhouse gas emission permits trading system, based on blockchain

technology. Russia is keeping pace with China, where they are actively working on the development of similar systems.

Ukraine is traditionally in no hurry to apply new technologies. Today, the country has not yet finally decided on its position on the blockchain. Initially, there was a solid negative attitude, but gradually the general rhetoric is changing, forums, symposia and meetings are held, which cover the effectiveness of the implementation and use of the blockchain.

At the moment, Ukraine is behind all its direct competitors on the world stage. The transition to digital platform technology should have been initiated a few years ago, but this issue is still only under discussion. There are almost no companies in the country that could be named active players in high-tech markets.

However, there are a number of unique factors for Ukraine, which in combination with an efficient infrastructure contribute to the development of the blockchain in Ukraine⁴⁶:

1. Infrastructure. Internet coverage among the population in Ukraine has been growing since 2008 till present day. If in 2008 only 24% of the adult population had access to the Internet, in 2018 this figure was 74%. The speed of the Internet in Ukraine is constantly increasing in parallel with the reduction of the cost of access, which will further contribute to the development and use of the blockchain in Ukraine.

2. Regulatory and legal support. On the path of reform, one of the important developments was the approval of the Law of Ukraine "On Electronic Trust Services"⁴⁷ for possible electronic identification and introduction of services for electronic transactions. This made it possible to certify invoices and transactions with an electronic signature.

3. Investment climate. Government regulators are trying to balance the conditions for doing business for foreign investors with the conditions for domestic companies. On a positive note, it should be mentioned, that the requirement to obtain a permit during direct investment transactions was abolished. In our opinion, the development of blockchain technology will reduce costs and improve the overall investment climate in the country.

4. Qualification level. Ukraine is trying to maintain a high level of education, especially for progress in the exact sciences: mathematics and programming, while skilled workers in the field of high information technology respond positively to the development of the blockchain industry.

⁴⁶ *Pro natsional'nu depozytarnu systemu ta osoblyvosti elektronnoho obihu tsinnykh paperiv v Ukraini.* <http://zakon2.rada.gov.ua/laws/show/710/97-вр>. [In Ukrainian].

⁴⁷ *Pro elektronni dovirchi posluhy.* <http://zakon5.rada.gov.ua/laws/show/2155-19/page3>. [In Ukrainian].

Highlighting the advantages of blockchain technology, we note the following: 1) the possibility of rapid implementation of the transaction; 2) systematization, accumulation, processing and analysis of a significant amount of data on the terms of transactions, which has a unified form and is convenient for both enterprises of the real sector of the economy and financial institutions. Attention should also be paid to providing this process with powerful computer technology, artificial intelligence systems and machine learning. This allows not only to collect data, store it and share it, but also it will allow to analyze and suggest programs for management decisions in the future.

Conclusions

The development of the domestic securities market in the last decade is under pressure from a number of global processes that shape the main challenges and trends for its further change. The political and economic situation in the country has a negative impact on the development of the domestic securities market. This is evidenced by the low level of the indicator of ease of doing business and 77th place in Ukraine among 161 countries. As a result, foreign and domestic investors refrain from investing. For Ukraine, in the context of improvement of the macroeconomic situation, stabilization of the business environment and development of the securities market, the activities of public authorities should be aimed at reduction of bureaucracy and corruption, protection of property and investment rights, development of innovation and technology, trade and financial freedom.

Geopolitical, state and financial crises determine the search for alternatives by investment market participants. There is a need to develop and implement innovative financial instruments. Today, the global derivatives market continues to grow dynamically and in economically developed countries serves as an indicator of the state and prospects of change in both national and global economies. In Ukraine, the volume of derivatives trading is insignificant and decreases during the analyzed period due to the low level of their liquidity, high volatility and a narrow range of exchange instruments.

The global financial crisis in 2008, distrust to the traditional global financial system, increased demand for innovative financial technologies, and a decrease in the cost of launching IT products led to an increase in the number of fintech companies with their activities aimed at development of digital financial products. The global spread of blockchain technologies and cryptocurrencies on global financial platforms has transformed them into an independent investment instrument. Today, there is still no clear position on the possibility of

development of these financial innovations in Ukraine, but there are a number of unique factors that, combined with an effective infrastructure, contribute to their development, namely: information infrastructure, regulatory support, investment climate, level of qualification of employees, etc.

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