

## **DIRECTIONS OF DEVELOPMENT OF FINANCIAL INNOVATIONS IN UKRAINE**

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**Abstract.** As a result of the research, it was found that today there are several characteristic general directions of development of modern financial innovations in Ukraine: securitization; liberalization of financial markets; globalization of financial markets; digitization. All these directions have internal interrelationships, and in the process of development of one of them in the national economy, the development of the others is necessarily taking place.

The experience of Poland regarding the introduction and spread of innovations in the agricultural sector has been analyzed, the main common problems for agrarian financial innovations of Ukraine and Poland have been identified. Barriers to the development of financial innovations in the agricultural economy of Ukraine have been researched and identified, as well as their own comments and suggestions regarding the development of financial innovations in the agricultural sector have been formulated.

**Keywords:** financial innovations, securitization, liberalization of financial markets, globalization of financial markets, digitalization, financial technologies.

Financial innovations are the main driving force of global economic development and a key factor in the improvement and development of the financial systems of the developed countries of the world. In recent years, Ukraine has come very close to economic and financial integration with European countries, and therefore the development of financial innovations is taking place at an accelerated pace. And although the legislative framework is not fully formed, new financial instruments, methods and processes are already being introduced into the domestic economy, which determines the relevance of scientific research on modern directions of development of financial innovations in Ukraine in general and in its agricultural sector.

In recent years, financial innovations have been actively studied in the works of domestic and foreign scientists. Among them, we can single out the scientific publications of the following scientists: R.M. Levich, E. Harold Corrigan,

Ch. S. Sanford, J. George, J. Votya, H.P. Behr, H. Defey, M. Solivoda, A. Abalkina, H.M. Azarenkova, O. Borysiuk, T. Zadorozhna, R. Leshchenko, O.S. Novak, I.M. Parasiy-Vergunenko, N.M. Panteleeva, O.M. Petruk, O. Pomazun, V. Trokhymenko. However, in economic theory, there is still a lack of fundamental research that would give an assessment of the development of certain areas of financial innovation in the field of the domestic economy.

The purpose of the study is the process of development of financial innovations the key directions of such development in Ukraine.

The development of financial innovations, originating from the 1960s, has now spread to all developed countries and is provoking serious changes in the financial picture of the world. The variety of forms of modern financial innovations determines the wide differentiation of the integration processes associated with them in the financial and banking systems of different countries. In the same way, the speed of introduction of certain financial innovations into the national economies of states also differs significantly. All this complicates the scientific substantiation of the modern development of financial innovations and requires thorough scientific research of precisely those areas of development of financial innovations that are characteristic of Ukraine, and which are at one or another stage of introduction into the domestic financial system.

First of all, it should be noted that the concept of "innovation" is defined by us as a creative process of creating new consumer values, as well as the result of such a process in the form of new types of products, goods, works, services, technologies, marketing ideas, financial products and services, technical solutions, other ideas, the application of which requires users to change the usual stereotypes of activity, skills.

In a broader sense, innovation is progressive technical-technological, socio-economic changes, innovations in financial, research and other spheres, the emergence of new methods of production, types of products and services, the development of new sales markets, any improvement that provides cost savings or creates conditions for such savings<sup>224</sup>.

To understand the state of innovation development in Ukraine, we will analyze the number of innovatively active enterprises by economic sector and the dynamics of their number for 2016-2020.

The development of innovative activity in Ukraine has decreased in recent years. The number of innovatively active enterprises decreased in all sectors of the economy in 2018-2020. The number of innovatively active industrial enterprises in 2018-2020 decreased by 2.6 times, compared to 2016-2018, and their share in the total number of industrial enterprises decreased from 29.5% to 12.9%. In the processing industry, the situation is similar: the number of innovatively active enterprises decreased by 2.46 times, and their share decreased by 18.7 percentage points. But an even stronger reduction in innovation affected enterprises of financial and insurance activities: their number decreased from 222 to 12, and in percentage terms – by 31.8 percentage points.

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<sup>224</sup> Parasiy-Vergunenko I. M. (2015). Organizational and methodological aspects of the analysis of innovative development of enterprises, p.181-186.

Therefore, it can be concluded that the innovative activity of enterprises has decreased in all sectors of the economy. However, in our opinion, the question here is also in the methodology by which it is determined what exactly falls under the concept of "innovation". Methodological explanations to the Statistical Yearbook of Ukraine for 2020 give us the following definition: innovations – newly created (applied) and (or) improved competitive technologies, products, or services, as well as organizational and technical solutions of a production, administrative, commercial or other nature, which significantly improve the structure and quality of production and (or) the social sphere<sup>225</sup>.

From the given definition, it is not entirely clear whether financial innovations are included in the concept of "innovation" or not. Therefore, we cannot know for sure whether the reflected banks and other financial institutions. Most likely, statistical data do not consider, for example, companies engaged in financial technologies (so-called fintech companies), startups (especially at the initial stage of their development) and/or do not cover all the multifaceted aspects of their varieties. In our opinion, the need to collect and publish statistical data on financial innovations in Ukraine has increased dramatically in recent years.

Financial innovation is the development of new financial products and market instruments. In our opinion, one of the most complete and detailed definitions of the concept of "financial innovations", with which we fully agree, is given in his works by N.M. Panteleeva, who understands financial innovation as "the result of a creative search for a new approach to solving a problem in the financial industry, which is implemented through the creation and diffusion of new financial products, services, tools, technologies, processes and organizational forms, oriented on effective management of financial resources and risks, ensuring financial stability and competitiveness in conditions of variability, uncertainty and information asymmetry of the economic environment"<sup>226</sup>.

Considering the details of the process of integration of financial innovations into the national economy, which are quite strongly differentiated in different countries, and having studied the scientific literature on these issues we can nevertheless single out several characteristic general directions of development of modern financial innovations in Ukraine:

- 1) securitization;
- 2) liberalization of financial markets;
- 3) globalization of financial markets;
- 4) digitization.

All these directions have internal interrelationships, and in the process of development of one of them in the national economy, the development of the others is necessarily taking place. Let's consider each direction in more detail.

1) securitization – in a broad sense, this is the replacement of traditional forms of financing, mainly bank lending, with financing based on the issue of securities. In

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<sup>225</sup> Statistical Yearbook of Ukraine for 2020 (2021). State Statistics Service of Ukraine.

<sup>226</sup> Panteleeva N.M. (2014). Financial innovations in the banking system: theory, methodology, practice.

a narrow sense, securitization is an innovative financing technique by transforming part of the financial assets of a business entity into highly liquid instruments of the capital market<sup>227</sup>. It is a more attractive financial instrument than bank loans.

The mechanism of asset securitization is as follows. The originator company (from the English originate – to create, generate) generates assets in the process of carrying out current business activities (for example, by issuing loans, supplying goods, providing services, leasing property, etc.). As a result of such activity, the originator has assets – claims against third parties (debtors). Such assets can be, for example, a loan portfolio, mortgage, receivables. These assets are sold to an intermediary specially created for these purposes (in global practice, the intermediary is a Special Purpose Vehicle, SPV) and are completely written off from the originator's balance sheet. At the same time, the originator company converts its claims (illiquid assets: loans, receivables) into liquid income securities. Originators can be banks and other credit and financial institutions, state authorities<sup>228</sup>.

In other words, the essence of asset securitization is that a certain part of income assets (mortgage or consumer loans, car loans, leasing assets, commercial real estate, collateral objects, etc.) is withdrawn from its balance sheet and refinanced by issuing securities, which he sells on the open market. The purchase of securities by investors gives them the right to receive income in the form of a fixed interest, the source of which is interest and the principal amount of payments on securitized assets (from the cash flows of the assets of the pool)<sup>229</sup>.

It should be emphasized that securitization is an effective tool for financing the activities of agricultural enterprises. Thanks to the instrument, large creditors of the agricultural sector will be able to refinance their loans, including agricultural receipts, through access to capital markets, to reduce credit risks and increase the volume of financing for their agro-producer clients. The direct user of securitization is creditor companies, but the final beneficiaries of this instrument are agricultural producers. Practice shows that in saturated and mature markets, lenders use securitization to increase cooperation with customers and improve financing conditions. It is universal for various sectors of the economy and in global practice. In general, with the introduction of securitization, the cost of financing in the sector decreases. In developed countries, it is used in the markets of real estate, auto loans, consumer loans, etc.<sup>230</sup>

The successful experience of implementing this tool in the agricultural sector was shown by Brazil: in the 90s, the country faced a shortage of credit for farmers and a course of securitization was announced. Creditors began to use receivables from agricultural receipts as collateral for issuing securities. Today, the financing of

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<sup>227</sup> Levich R.M. et al. (1988). *Financial Innovations in International: out-of-print volume from the Financial Markets*, p.215-277; Baer H.P. (2006). *Securitization of assets*; Petruk O. M., Novak O. S. (2012). *Management of the risks of securitization of investment funds*, p.86-90.

<sup>228</sup> Petruk O. M., Novak O. S. (2012). *Management of the risks of securitization of investment funds*, p.86-90.

<sup>229</sup> *Securitization of agricultural assets: Position of the Land Law Center of the Academy of Sciences of the National Academy of Sciences of the Russian Academy of Sciences* (2021).

<sup>230</sup> Leshchenko R. (2021). *Securitization for Ukrainian farmers*.

the agricultural sector in Brazil reaches tens of billions of dollars. This allows the country to enter the TOP-5 world exporters of agricultural products for a long time.

With the potential of agricultural production that Ukraine has, such a financial innovation as securitization will allow it to become one of the leading positions in the world in the production and export of agricultural products. And over the past five years, the mechanism of agricultural receipts has already confirmed its effectiveness in Ukraine.

In 2017, agricultural enterprises issued agricultural receipts in the amount of UAH 1.2 billion, and in 2018 – 4.3 times more, for UAH 5.2 billion. During 2021, farmers issued 1,706 agricultural receipts with a total value of UAH 15 billion. The trend line shows a rapid increase in the volume of funds raised with the help of agricultural receipts: the average annual increase is UAH 3.54 billion. Most agricultural receipts were issued by small and medium-sized enterprises. Thus, securitization will allow for easier access to credit resources for small firms and will be in line with the already implemented and effective today's soft credit programs and loans.

Such a financial instrument as agrarian receipts in the conditions of war, unfortunately, is not used to its full extent. Therefore, the government plans to introduce another financial innovation: draft law No. 2805-d has already been developed, which aims to facilitate access to work with agrarian receipts. If it is adopted, users will be able to independently carry out operations with agricultural receipts directly in the Register of Agricultural Receipts through online access with electronic digital signatures without mandatory notarization. Previously, the Register of Agricultural Receipts had already been technically updated, as well as integrated with the necessary state registers for automatic data verification. Therefore, the accelerated adoption of draft law No. 2805-d will simplify access to financing for agricultural producers, which will greatly support the industry in difficult wartime, and will also contribute to its recovery in the post-war period<sup>231</sup>.

The market of agricultural receipts grows very dynamically with each season. It is expected that this trend will continue for the next few years. So far, about 1.5 thousand farmers have issued agricultural receipts. With such receipts, producers used the future harvest as collateral to raise financing and invest in production in time. All these agricultural receipts can become the basis for the development of securitization, which will be a breakthrough for the development of the agricultural sector, as well as one of the most modern financial innovations in the field of agriculture introduced in Ukraine over the last year.

2) liberalization – a change in the established practice of the domestic financial market either through explicit deregulation or through a change in the principles of its operation. It is a stimulating factor of economic growth and has direct and indirect consequences for the economy.

As we can see, the positive impact of liberalization on economic growth is carried out through the movement of capital and technology to Ukraine. The stimulating effect of liberalization is manifested both in the growth of savings and the

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<sup>231</sup> Government portal: The single web portal of executive authorities (2022).

reduction of the cost of capital, and in the increase in the level of technology of the economy, in particular the financial sector, and indirectly causes the deepening of the specialization of production, the increase of financial flows and the general digitization of the country.

Analyzing the development of the banking services markets of the CIS countries at the current stage of the evolution of global economic relations, it is worth paying attention to significant differences in the levels of their liberalization. It is about the fact that the banking systems of the CIS countries are sufficiently differentiated in terms of their degree of openness. The most liberalized are the banking services markets of Kyrgyzstan, Georgia, Armenia, and Ukraine, where the share of foreign capital reaches 50-60%. Tajikistan and Azerbaijan are next in terms of the level of openness of the banking services market (about 30%). The banking systems of Uzbekistan, Kazakhstan and Belarus are the most closed<sup>232</sup>.

As for the Ukrainian banking system, it is now completely open to the entry of foreign capital. Current legislation makes it possible to create banks in Ukraine with 100% foreign capital, but with a mandatory requirement – they must be subsidiary banks operating in the legal field of Ukraine<sup>233</sup>. This is confirmed by the significant increase in the number of banks with 100% foreign capital over the past five years.

Currently, the number of commercial banks with 100% foreign capital has been steadily increasing since 2015. As of January 1, 2022, 23 banks with 100% foreign capital were operating in Ukraine, which is 35.3% more than in 2015. The specific weight of banks with foreign capital in the total number of banks in Ukraine is 46.5%, which indicates a high level of liberalization of financial services in Ukraine.

3) the globalization of financial markets is a stage of their development characterized by liberalization and deregulation, the reduction of restrictions on the international movement of capital, the standardization of financial products, as well as the development of technologies that facilitate the cross-border movement of capital and accelerate the spread of information, in which an extremely close connection is formed "connection between local financial markets, as a result of which important events on one of them are reflected on all others<sup>234</sup>.

But globalization is not only a process of growing economic interdependence between the countries of the world due to an increase in the volume and variety of cross-border operations and international capital flows, but also one of the important directions of the development of financial innovations. As national barriers become less visible and financial markets become more integrated, the world's financial system faces new challenges that are being addressed through financial innovation. In connection with the weakening of national financial barriers, the liberalization of the financial services market is rightly considered one of the manifestations of financial globalization, and these two concepts are considered inextricably linked.

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<sup>232</sup> Abalkina A. (2008). Preconditions and Prospects for Banking Integration in the Eurasian Economic Community, p.102-114.

<sup>233</sup> Trokhymenko V. (2011). Liberalization of the market of banking services as a manifestation of financial globalization, p.50-53.

<sup>234</sup> Zadorozhna T. (2020). Globalization of financial markets: essence and impact on the regulation of national securities markets, p.81-89.

**Table – Number of commercial banks in Ukraine from 2008 to 2022<sup>235</sup>**

	Number operating banks	Of them with foreign capital	In t.s. with 100% foreign capital
на 1.01.2008	175	47	17
на 1.01.2009	184	53	17
на 1.01.2010	182	51	18
на 1.01.2011	176	55	20
на 1.01.2012	176	53	22
на 1.01.2013	176	53	22
на 1.01.2014	180	49	19
на 1.01.2015	163	51	19
на 1.01.2016	117	41	17
на 1.01.2017	96	38	17
на 1.01.2018	82	38	18
на 1.01.2019	77	37	23
на 1.01.2020	75	35	23
на 1.01.2021	74	33	23
на 1.01.2022	71	33	23

In confirmation of the relationship between liberalization and globalization, G. Defey notes that the mastery of the financial and credit sphere of financial innovations relates to the liberalization and deregulation of financial markets, which take place against the background of their globalization. Therefore, the growth of competition from banks and various segments of the financial market has objectively led to a decrease in the traditional role of banks as lending institutions. At the same time, signs of such competition affect the profitability of traditional banking operations<sup>236</sup>.

4) digitalization – the process of transformation of traditional forms of the financial market with the help of electronic technologies into the latest digital systems, which in the new economic theory are united by the term FinTech – literally translated "financial technologies" – a term used to denote the introduction of digital technologies in the market of financial services, in order to improve the quality of financial services for customers and improve financial transactions: speed, reliability, encryption, etc.

In other words, FinTech is a symbiosis of finance and new technologies using mobile applications and algorithms<sup>237</sup>. Today, FinTech is the newest branch of the

<sup>235</sup> The number of commercial banks in Ukraine: performance indicators of the banking sector of Ukraine (2022).

<sup>236</sup> Defey G. (2001). The blurring of banking. The world's new financial landscape, p.117-137.

<sup>237</sup> Borysyuk O., Shmatkovska T., Datsyuk-Tomchuk M. (2021). Drivers and barriers to fintech development in the financial market, p.44-53.

economy, which unites financial companies that are focused on meeting the needs of customers with the help of new software for financial transactions, offering them efficient, convenient, automated, transparent online products.

Currently, the global market for technological solutions for the financial sector is one of the fastest growing in the world. As for the Ukrainian Fintech market, according to UAFIC, as of the end of 2021, there are 196 fintech companies, the vast majority of which are providers of payment services and electronic transfers, innovations in the field of technology and infrastructure (the direct product is the creation of IT solutions for financial companies and banks), consulting and analytical systems<sup>238</sup>.

According to forecasts, the following areas of FinTech will be the most common in the coming years: bitcoins and cryptocurrency, RegTech (regulatory technology), innovations in the banking sector, SupTech (super-vising technology), banking and open application programming interface (API), mobile devices, voice user interface, fintech development in the B2C market. It is assumed that the biggest problem fintech companies will face will be cyber attacks<sup>239</sup>.

Among the FinTech innovations that have been successfully operating in Ukraine since 2019 for the agricultural sector, I would like to single out Agrifinance – a platform that provides farmers with financing quickly and easily online. Its features are that it allows individual entrepreneurs, as well as representatives of small and medium-sized businesses in the field of agriculture, to get a loan online without paper documents. The developed technology allows lending to farmers without the client providing information. To approve the application, only the EDRPOU of the enterprise and the TIN of the founders are required.

It is worth noting that it is particularly difficult to implement financial innovations in the agricultural sector in any country. This is due to the specifics of the industry and usually requires more time for the successful implementation of fintech projects. In particular, the Polish scientist Skornicki listed the following factors that can be considered as barriers to the innovativeness of Polish agriculture. In our opinion, they are fully characteristic of the agricultural sector of Ukraine:

- specifics of agriculture,
- fear of novelty, high average age of farmers
- significantly lower level of education compared to urban residents and
- deficit of own funds (in addition, low level of debt).

The World Bank emphasizes some advantages associated with the use of "new technologies" in financing agriculture: firstly, "lower costs per unit of production" and "higher volume of productivity"), secondly, the use technology is an indirect improvement in operations through better risk management. From the Polish perspective, the technology can be used to create local data repositories that can be aggregated through data consortia to form broader data sets and more statistically meaningful risk reduction analysis.

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<sup>238</sup> Fintech market development in the world and in Ukraine. (2022), p.21-127.

<sup>239</sup> Pomazun O. (2018). Modern state and development trends of the fintech industry, p.67-69.



The process of development of financial innovations in Ukraine takes place in such directions as: securitization, liberalization of financial markets, financial globalization, digitalization, and financial technologies. All these directions have internal interrelationships, and in the process of development of one of them in the national economy, the development of the others is necessarily taking place.

Starting from 2019, the mechanism for implementing securitization in the domestic financial sector is being actively developed and refined. A project with the support of the Swiss IFC Confederation "Development of access of the agricultural sector of Ukraine to capital markets" is already operating, which will help create a favorable environment and infrastructure for the spread of securitization. And we can say that currently in Ukraine there is an urgent need to legislatively regulate the issue of securitization of non-bank assets.

The process of liberalization and globalization of financial markets in Ukraine has been going on for a long time, and the development of financial innovations in this direction is taking place in full, which has a positive effect on the entire financial system of the state.

In the direction of digitization and development, Ukraine has been moving quite rapidly in recent years and already has certain assets. And although financial technologies are introduced somewhat more slowly than in developed countries, it can be confidently stated that the domestic industry will at least double in the next few years and will be replenished with new financial products and new participants in the FinTech market.

The advanced experience of Poland in the introduction and spread of financial innovations in the agricultural sector can be used to a certain extent in relation to domestic agricultural enterprises, and especially for the attraction of current financial resources in farms with small land area. We have researched and identified barriers to the development of financial innovations in Ukrainian agriculture, as well as formulated our own observations and proposals regarding the Ukrainian situation in the agricultural sector.

Further research will be aimed at developing effective cases of the application of financial innovations in the domestic economy, as well as at a more detailed study of the development of the blockchain and cryptocurrency market of Ukraine.

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