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# THE ROLE OF DIGITALIZATION IN THE FORMATION OF THE COMPETITIVE ENVIRONMENT OF THE FINANCIAL AND CREDIT SECTOR OF THE ECONOMY OF UKRAINE

## ABSTRACT

The purpose of the article is to formalize the genesis of digital financial technologies (DFT), identify: the impact of its stages on the competitiveness of representatives of the financial and credit sector (RFKS), the features of digital competition; quantitative assessments of the specified impacts. Achieving this goal has scientific and practical significance, in particular, for the formation of an effective digital strategy of the RFKS. It is noted that the genesis of digitalization was not uniform and took place in stages, which are a consequence of the level of development of the DFT, the need to adapt the RFKS to them and determine the peculiarities of the competition of the RFKS. The dynamics of changes in the market share by types of digital financial services of fintech companies were studied, and a significant fluctuation in their competitive positions was noted. It is indicated that the complex application of DFT by fintech companies gives them the opportunity to strategically gain a significant competitive advantage over traditional RFKS. The prospects of mutually beneficial cooperation in the market of digital services of fintech companies and banks are indicated. It is noted that a new phenomenon is manifested on the example of fintech companies - mutual multiplicative strengthening of the development of DFT, which leads to increased competition. According to the results of the study of the effects of digitalization on the PFKS, the factors of the formation of threats to the competitiveness of banks in a strategic plan are determined and the directions of actions of institutional structures that will contribute to the strengthening of the market competitiveness of non-bank financial structures are indicated.

**Keywords:** digitalization, financial market, competitive environment, financial and credit sector, innovative financial services

**JEL Classification:** G14, G20, G39, O31

## INTRODUCTION

Over the last decade, the doubling of the share of citizens who have their own bank accounts [7] has led to an increase in the significance of the level of influence on the market of financial and credit services, because this influence is converted into the profit of financial and credit institutions, which, accordingly, increases competition between them.

The development of digital technologies, their spread in society, and the growth of digital skills of citizens form the prerequisites for increasing the volume of digital financial services and, accordingly, their significant reduction in price, which contributes to the rapid development of the financial and credit market. The level and pace of adaptation of financial and credit institutions to new technologies provide opportunities to expand the range of financial services and increase the client base, which provides them with an appropriate level of competitiveness. Today, the management of financial and credit structures forms new tasks for the sector of digital financial technologies and provides its financing, which forms a feedback loop between these sectors of the economy and leads to a multiplier effect on the growth of both the financial and credit and

digital sectors of the economy. For example, the spread of financial and credit services nowadays is facilitated by the fact that digital means of remote identification provide an opportunity for the consumer to receive financial services without a physical presence in the front office. This not only makes it easier for the consumer to interact with the financial institution but also provides the financial institution with new opportunities to expand the geography of service provision.

At the same time, the full-scale war, which was accompanied by mass migration of the population, mobilization to the army, etc., led to an increase in the use of digital technologies, in particular, remote access when making money transfers. This resulted in certain deformations in the competitive environment of the financial market and the appearance of new non-banking companies in the market.

Formation of the legislative and regulatory framework of digital services, in particular, the adoption of Laws of Ukraine: No. 1953-IX "On financial services and financial companies"; No. 2074-IX "On virtual assets"; No. 2075-IX "On cloud services"; No. 1591-IX "On Payment Services", the introduction of amendments to the Tax Code, which open the possibility of using electronic money in Ukraine and equalize the use of digital wallet accounts with bank accounts, speed up the processes of digital transformation of the financial and credit sector of the Ukrainian economy, change its architecture and, respectively, lead to a change in the conditions for the formation of a competitive environment for this sector of economic activity.

Such regulatory initiatives as the implementation of the USAID project "Financial Sector Reform" will also contribute to the creation of a competitive digital market that meets international standards.

The development of digital financial technologies has a significant impact on the country's economy. For example, an increase in the volume and number of electronic payments means not only a decrease in the level of cash burden on the financial system but also an increase in the profitability of financial institutions, and the level of their liquidity, which is an effective factor in stabilizing the financial system even in conditions of military aggression. Therefore, the formation of a competitive environment in the financial and credit sector through the use of digital technologies leads to the strengthening of the economy of Ukraine.

Therefore, the main problematic issue of the presented research is the identification of general features of the development of the digitalization of the financial and credit sector of Ukraine, which will provide an opportunity to assess further changes in the role of digitalization in the formation of the competitive environment of the specified sector, its impact on the formation of the digital strategy of the financial market entity, and the identification of research directions for strengthening adaptation of the main participants of the credit and financial market to new competitive conditions.

## LITERATURE REVIEW

Many scientific works are devoted to the study of the effects of digitalization on the financial and credit sector and competition in the financial services market. Harkavenko V. and Hrinko I. [11], Roshchyna N. and others summarized the effects of the latest technologies on the global financial market [31] and the establishment of the role of digital financial technologies in the formation of the national market in the conditions of globalization, that were carried out in the article by Bobryshev Y. [6], made it possible to expand the view on the formation of a competitive environment of the financial and credit sector of the economy of Ukraine. In particular, it is noted that the development of digital financial technologies has become a separate sector of the modern economy and the use of these technologies has led to an increase in the number of users in the "alternative finance" segment [11]. It is indicated that the incentive for the spread of digital technologies in the market of financial services is not only new opportunities but also new threats created by digitalization. In particular, the threat of increased uncontrolled competition between financial market players due to the destruction of the traditional boundaries of the activities of financial companies was mentioned [31]. It is also stated that digital technologies lead to the formation of new models of interaction between players in the financial market, which makes them more flexible, increases their competitiveness, and allows to respond more promptly to the needs of consumers [6]. This, in particular, shows that the effects of digitization, characteristic of the global market of financial services, also play a significant role in the formation of a competitive environment for the financial and credit market of Ukraine.

At the same time, O. Shevchenko and Rudych L. [33] indicated that the conditions of the domestic financial market are inferior to the conditions of the global market, in particular, due to insufficient and uneven development of the digital infrastructure and digital skills of the population, underdevelopment of the venture investment market, permanent economic crisis, etc.

In the scientific work of Mohylina L., Volkova K. [22] it is indicated that in recent decades the competitiveness of banking institutions of Ukraine is determined by the level of use of digital technologies to expand the range of financial services.

Unfortunately, the analysis of the competitive positions of Ukrainian banks by Mohylina L., and Volkova K. [22] is limited only to the study of the payment card market. Akopian D. [1] indicated the emergence of new players in the financial sector - FINTECH companies determined their competitive role in the financial services market and indicated the main areas of their competitive struggle with banking institutions. It is also indicated that the collection and analysis of big data about the financial condition of customers is the newest tool for acquiring competitive advantages. According to the analysis of fintech companies entering the market, it is indicated that the majority of them direct their activities to the creation of ready-made digital solutions for banks and non-banking financial institutions. This significantly expands the range of financial services that non-bank financial institutions already provide today, creating competition for traditional structures of the financial sector.

Dudynets L. [10] studied the directions of development of the market of financial services by FINTECH companies and indicated that their activities are aimed mainly at the market sector not covered by banking services. The consequence of this is the reduction of competitive opposition between banks and FINTECH companies. This thesis is discussed in detail in the presented article.

Bezpalnyi R.V. [5] detailed niches of the financial sector market that fintech companies are successfully mastering: support of micro-businesses and small businesses, service of remote locations, support of the finances of individuals, etc. Also, Bezpalnyi R.V. [5] pointed to the stimulating role in the development of FINTECH e-commerce, which remains overlooked by a significant number of researchers of the competitive prospects of fintech companies. Sloboda L. I. and Demianyk A. N. [34] indicated that the level of combination of competitive potentials of banks and fintech companies varies from region to region. It is noted that their cooperation is mainly focused on the implementation of digital innovations. With the study of the impact of digital technologies on the competitiveness of banks, the role of fintech companies in this process was considered, rather, not as competitors, but as developers of these technologies for the banking sector by Vovchak O. and Pronko V. [39]. The issue of cooperation in the competition between banks and fintech companies in the financial market is discussed in more detail in the presented article.

In the article by Kovalenko V.V. [19] threats and prospects for Ukrainian banks [entering the financial and credit market of FINTECH companies are analyzed. The competitive advantages of banks over FINTECH companies have been studied and systematized: the scale of financial operations, stable relations with clients, a significant client base, experience and traditions of risk management, comprehensiveness of services - the opportunity to receive various services in one place. Also, the view on expanding the types of competitive risks for traditional financial institutions, where new financial market players will have an advantage due to the early adoption of digital technologies, is quite new. These are, for example, operational risks due to the increase in IT interdependencies and the need to develop a new market infrastructure, compliance risks, the risk of losing control over operations conducted by companies on outsourcing banks, etc. At the same time, Nakonechna O. and Mykhailyk O. [27] stated that digital technologies are capable of providing Ukrainian banks with complex competitive advantages only in the long term, and a large part of Ukrainian banks is not even considering the full digital transformation of banking activities, as banks with a small amount of financial resources consider digital transformation too expensive and one that does not adequately protect against the main risks. This not indisputable thesis is considered in detail in the presented article.

In the article by Kornivska V. O. [18], it is indicated that the military aggression of Russia has led to a rapid increase in the consumption of digital financial services in Ukraine (an indicator of which is a sharp increase in the number of cashless transactions with remote access in 2022), in particular, as an alternative way to ensure life important needs of consumers in conditions of significant forced migration, mobilization, loss of family ties. Kornivska V. O. [18] also pointed out that there is no alternative to the intensification of the financial services market as one of the mechanisms for restoring the economy of Ukraine in the post-war period. This thesis is expanded in the article by Prykaziuk N. et al. [29] where, in particular, it is indicated that during the war and post-war recovery, the financial market becomes unstable and, moreover, according to Prykaziuk N. et al. [29], the financial market may be destroyed. One of the main tools for overcoming this threat is the digitalization of relations of all financial market participants.

Kloba L. and others [16] with evaluating the role of the banking sector in monetary transactions as significant at the present stage, indicated the tendency of this role to decrease. In order to acquire the necessary level of competitiveness in the market, according to Kloba L. et al. [16], banks should go beyond the sphere of customer service and expand their activities "in the direction of the ecosystem". Another view on the competitiveness of banks is provided in this article.

In the article, Stashchuk O. et al. [36] indicated that the digitalization of financial services forces banks to move away from business models aimed mainly at corporate clients and, in order to acquire an appropriate level of competitiveness, to move from price and quantitative indicators of financial products to ensure proper service and quality of service, prompt

response to new needs of consumers in digital services. The above was confirmed by the use of cluster analysis by Kolodiziev O. et al. [17].

Chunytka I. and Bohrinovtseva L. [8] indicated that there is a tendency for Ukrainian fintech companies to enter the markets of the world's leading countries. Thus, 23% of them work in EU countries, 8% in the USA. The reason for this is the inability of the Ukrainian market to provide the appropriate level of scalability for new financial services. Smahlo O. [35] also stated that Ukrainian fintech companies are becoming a component of the global financial market, and indicated that their entry into the Ukrainian market led to its fundamental changes and forced traditional market participants to improve their business models. This thesis is expanded and supplemented in the presented article.

The given review of literary sources indicates both significant changes in the financial and credit sectors of the economy as a result of the spread of digital technologies, as well as a certain difference in the views of scientists regarding the impact of digitalization on the competitiveness of the main participants of the financial market and the level of realization of their potential opportunities, the state and prospects of their activities in the conditions of digitization. Therefore, the study of the specified problem is relevant.

## AIMS AND OBJECTIVES

The purpose of the article is to formalize the genesis of digital financial technologies and identify the impact of its stages on the level of competitiveness, on the formation of a digital strategy of representatives of the financial and credit sector; identify the features of digital competition, researching ways to strengthen the adaptation of the main participants of the credit and financial market to new competitive conditions; introduction of not only qualitative but also quantitative assessments of the specified impacts. The objectives of the article are an assessment of the level of competitiveness in the market of digital financial services of traditional market participants and new representatives of the non-banking sector, identification of the main threats and prospects for growth of their competitive potential, tactical and strategic advantages, directions of regulatory influence, contributing to the increase of competition in the financial market under the influence of digitalization, contributing to the adaptation of market participants to the effects of digitalization.

## METHODS

During the research, the results of which are given in the presented article, general scientific and special methods of cognition were used. Thus, using the method of logical abstraction, the unevenness and phasing of the digital transformation of the financial and credit sector of the economy was revealed, which determines the peculiarities of the formation of a competitive environment in the country's financial market. The application of statistical methods made it possible to objectify the effects of digitalization on the financial and credit sectors. The use of statistical methods, in particular correlation analysis, made it possible to objectify the effects of digitalization on the financial and credit sectors. As it is known, correlation analysis is used to identify implicit relationships between data sets, which provides an opportunity not only qualitatively, but also quantitatively to assess the specified impacts. In the presented study, based on the correlation analysis of the available data, the authors used the Pearson correlation coefficient for the population, which is known to be as follows

$$\rho_{x,y} = \frac{Cov(x,y)}{\sigma_x \sigma_y} \quad (1)$$

where: *cov* is the covariance;  $\sigma_x, \sigma_y$  - standard deviation, respectively, of the parameters of the data sets *x, y*.

Data for correlation analysis are shown in Table 1 and Table 2.

Using the comparison method through the example of the financial market sector - the payment card market, a significant disparity between the main participants of the financial market is indicated, which indicates the importance of correct and incorrect assessment of the prospects of digital services and the need for timely investments in them.

**Table 1. Data for correlation analysis.** (Source: based on data from the National Bank of Ukraine, b., 2024; National Bank of Ukraine, d, 2024; World Competitiveness Center Digital Competitiveness Ranking, 2024; Statista. ATMs & Bank Branches, 2024)

Year	The share of interest income in the income structure of commercial banks, %	The share of commission income in the income structure of commercial banks, %	The share of interest costs in the cost structure of commercial banks, %	The share of commission costs in the cost structure of commercial banks, %	Number of bank branches, thousands of units	Number of ATMs, thousands of units	Overall rating	Technology rating
2017	68,8	20,3	42,8	5,05	10,316	26,384	60	62
2018	71,9	25,7	40,9	7,5	9,489	26,811	58	61
2019	64,2	24,4	41,1	9,5	8,509	27,091	60	61
2020	58,5	25,2	34,19	11,28	8,002	27,198	58	59
2021	64,7	33,9	27,4	16,7	7,134	14,266	54	58
2022	62,4	25,9	19,48	11,87	6,685	12,815	54	57
2023	66,93	22,2	32,7	15,39	5,336	14,364	-	-

The method of generalization made it possible to indicate that the high level of uncertainty of the main influencing factors, the significant instability of the financial market during the war and post-war recovery do not contribute to the forecasting of promising directions of investments in digital services. The uncertainty of the main influencing factors also hinders the implementation of effective regulatory measures to promote the implementation of digital tools in the activities of financial institutions.

## RESULTS

In order to solve the posed problems, it is advisable to introduce a broader view of the digitalization of the financial and credit sector of Ukraine. Only such a view is able to reveal the role of digitization for the financial and credit market in the previous periods and, most importantly, in the long term, which will contribute to the identification of the main threats and directions of growth of competitive potential, tactical and strategic advantages of the participants of the financial and credit market.

The genesis of digitization of the financial and credit sector of Ukraine was not uniform and took place in certain stages. The staged digitalization was a consequence of the level of development of digital technologies and the need to adapt financial and credit market participants to them, determined the pace of each of the stages and will continue to determine the next stages of digital transformation, which in turn determines the peculiarities of competition in the market.

The first step of digitalization can be called the use of digital tools for control and management of bank accounts, mobile and Internet banking. The second step was the implementation of digital financial products (for example, mutual digital audit of business partners, use of customer credit histories as a tool for building trust between financial market participants, etc.). The third step is the formation of the client's financial behaviour, the use of artificial intelligence, super-large data sets, and cloud technologies to rebuild the decision tree to ensure the client's financial tactics and strategy in the market, the development of individual packages of financial services, etc.

Each of the mentioned stages required not only its own technological solutions, reconstruction of its digital infrastructure, significant investments, accustoming clients to digital financial services and training of bank personnel, but also, which is much more difficult, requiring a change in the psychology of management and owners of financial and credit institutions for effective, ahead of competitors, use of innovative technologies. Precisely ahead, because with the dynamic development of digital technologies, their implementation by analogy with a successful competitor is a losing tactic in the competition, because the market participant who is the first to implement a promising technology will have a larger share of the market for the latest financial services.

Each of the stages, at first glance, is the formation of a separate share of the digital financial services market, and whoever holds a competitive position in this market share does not seem to need to implement the other stages of digitalization mentioned above. At the same time, each of the following stages must be a segment of the complex digital activity of the financial market entity, and it is precisely the sequential and complex nature of the implementation of the stages of

digitalization that provides permanent competitive advantages to a financial institution. Therefore, limiting one's activity to only a digital service that is relevant today is a competitive loss in a strategic plan.

As a result of the research carried out by the authors, it was established that the competition of financial services market participants occurs horizontally - according to the field of services that corresponds to each stage of digitalization, with the aim of gaining market share, and vertically - through all stages, based on the analysis and forecast of new areas of services opened by digitalization. Due to the development of digital technologies, the specific costs per hryvnia of the volume of services provided decrease with a jump-like growth of the specified volume, which, accordingly, leads to an increase in the profit of financial and credit institutions.

An important factor in the formation of a competitive market of digital financial services is the perception of the prospects of these technologies not only by powerful market participants but also by a wide range of consumers. Indicative, particularly in view of the above, is the introduction of a new financial service - instant transfers - in Ukraine, following the transition to the new version of the Electronic Payment System SEP 4.1.

The indicated system meets the requirements of the ISO 20022 standard and provides the possibility of using the Single Euro Payments Area (SEPA). Today, more than 70% of banking customers constantly use mobile devices for money transfers, expecting this financial service to be completed instantly. At the same time, part of the bank management does not see any reason for the transition to SEP 4.1 from SEP 4.0, if the transfer speed of the latter, in their opinion, meets the market requirements. In this case, the specified bank management even neglects such an advantage of instant payments as the fact that real funds are instantly transferred to the client's account, and not just a transfer notification is received. At the same time, despite the sceptical attitude of part of bank management towards the advantages of the instant payment system [27] and the positive attitude of the management of fintech companies towards it [7], the banking sector has competitive advantages in its introduction, since, for example, more than 2 /3 system banks already use the B2 automated system, which its manufacturer - the CS company - has already equipped with the appropriate module for instant transfers. At the same time, fintech companies seeking to join the system of instant transfers must not only comply with the relevant regulatory requirements of the National Bank of Ukraine but also invest in technology and its supporting infrastructure, which is a significant deterrent to obtaining this competitive opportunity.

The increase in the level of its use by the population and business is evidenced by the growth of competitive advantages provided by the Electronic Payment System SEP 4.0 and earlier versions (Table 1).

**Table 1. Dynamics of changes in indicators of the Electronic Payment System.** (Source: based on data from the National Bank of Ukraine, e, 2023)

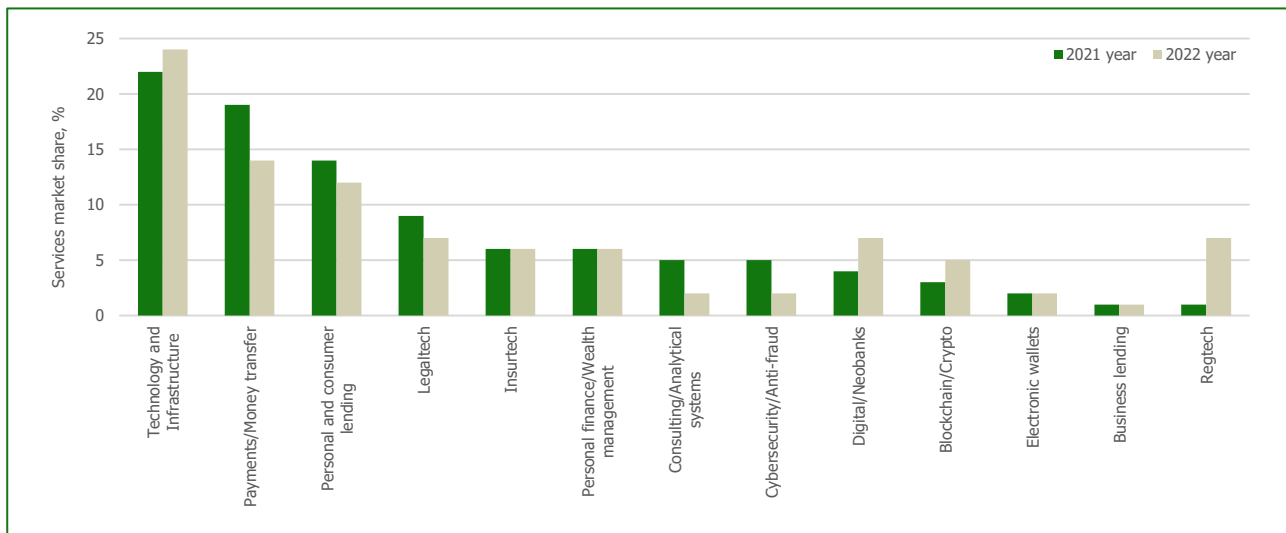
Years	Volume of payments, UAH billion	Change in the amount of payments of the current year compared to the indicator of the previous year, %	Number of payments, million	Change in the number of payments of the current year compared to the indicator of the previous year, %	Balance of funds on the accounts of SEP participants, UAH billion	Change of balance of funds on the accounts of SEP participants of the current year compared to the indicator of the previous year, %
2013	12685,4	-	347,6	-	27,8	-
2014	14409,8	113,5936	313	90,04603	34,3	123,3813
2015	17750	123,1801	298,8	95,46326	52,4	152,7697
2016	19521	109,9775	313	104,7523	57,2	109,1603
2017	20937	107,2537	332	106,0703	89,6	156,6434
2018	25300	120,8387	357,2	107,5904	97,23	108,5156
2019	32427	128,17	384	107,5028	84,17	86,56793
2020	44838	138,2737	385	100,2604	82	97,42188
2021	57270	127,7265	446	115,8442	83	101,2195
2022	133461	233,0382	362,7	81,32287	78	93,9759
2023	209923	157,2916	422,8	116,5702	267	342,3077



As evidenced by the data presented in Table 1, even the beginning of a full-scale war led to only a temporary reduction in the volume and number of electronic payments. Also, the presented data indicate a steady trend of growing popularity of the specified service.

In the first quarter of 2024, ~40% of the total number of transfers amounts to one thousand hryvnias, and ~55% of the total number of transfers - amounts from one to one hundred thousand hryvnias. That is, this service is gaining a mass character, which indicates that the population is gaining experience in its use and increasing trust in the field of digital banking services, which determines the prospects of digital financial activity. Accompanying the system of instant payments in the EU countries with such digital services as the use of QR codes and DeepLink has significantly expanded the volume and number of electronic payments in the EU countries. This indicates that the widely used digital services are becoming platforms for further digitalization of the financial services market, which leads to the expansion of competition in it.

The established division of financial and credit institutions into banking and non-banking sectors automatically distinguishes the most significant participants of the financial market of Ukraine - banks. At the same time, among non-banking institutions - credit unions, insurance and financial companies, on which the impact of digitalization does not significantly strengthen their competitive positions due to the establishment of business niches of these institutions, players appeared on the market, whose appearance is precisely due to digitalization. Their appearance was facilitated by the policy of the regulator aimed at the formation of a competitive financial market, first of all, the NBU issuing new licenses to market participants - fintech companies. The activities of these companies are mainly aimed at providing services in the field of banking (without using an established system of bank branches), non-cash payments, insurance services, and digital lending. The range of their services and the market share for each of them in 2022 and 2021 are shown in detail in Figure 1.



**Figure 1. Dynamics of changes in the market share by types of digital financial services of fintech companies, in comparison with the indicators of 2022 and 2021, %.** (Source: based on data from the Catalog of FINTECH companies of Ukraine, 2023)

The importance of the role of fintech companies in ensuring the reliable functioning of the financial and credit market in the critical period of large-scale military aggression was pointed out by the National Bank of Ukraine [39]. In particular, it should be noted that it was the cashless technologies of fintech companies that provided the population with unhindered access to cash in the first period after the beginning of the aggression when the banking sector had problems with cash collection and the forced shutdown of ATMs and bank branches. The importance of this line of activity in shaping the competitive environment of the financial and credit sector of the Ukrainian economy is evidenced by the rapid increase in the number of fintech companies in the recent period of time. Thus, if in 2018, according to V. V. Kovalenko [19], there were about eighty such companies in Ukraine, then at the end of 2023 their number increased to 246 companies, and seven of them were founded in the crisis year of 2022 [7].

The rapid increase in the number of fintech companies is due, in particular, to the fact that the reorientation of a traditional financial institution to the latest services, and the introduction of radically different management systems is a complex and long-term process. One of the main competitive advantages of fintech companies is the reduced level of normative and regulatory requirements for their activities compared to, for example, banks, which simplify their management, reduce costs and, as a result, speed up adaptation to new market requirements.

At the same time, as data in Figure 1 show, the volatility of the market share obtained by fintech companies that started their activities is visible. In particular, the level of market competition and the irrelevant assessment of threats and challenges for certain types of services by some companies (although the management of fintech companies consider onboarding technologies based on risk assessment to be promising) led to a reduction in their market share in 2022 compared to the 2021 year (Figure 1) in such areas as payments and money transfers - by ~26%; lending to individuals - by ~15%; legal support - by ~12%; consulting/analytical systems - by ~60%; cyber security - by ~60%. In the field of some innovative financial services, for example, such as personal finance/capital management, the market share of fintech companies has not changed (Figure 1), which indicates not so much their failure in this field, but rather the market's unpreparedness for the introduction of such a service. At the same time, there is a rapid increase in the market share of FINTECH companies in areas that require modern technologies, such as RegTech - for the implementation of permanent digital control of compliance with regulatory requirements in the conditions of their constant change, Neobanks, which is especially important when creating an online business, etc.

The complex application of modern financial technologies by FINTECH companies in view of their inclusive orientation, and personalization of customer service gives them the opportunity to strategically gain a significant competitive advantage over traditional financial institutions due to the prospect of deep integration of these companies into the economic and social life of the population. Also, the competitive advantage of fintech companies is a much faster response to dynamic changes in external circumstances, an example of which is their activity during martial law, when FINTECH structures activated crowdfunding services in real-time.

At the same time, the instability of the competitive positions of fintech companies in tactical terms is confirmed by the fact that only 68% of their number passed the break-even point at the end of 2023 [7]. One of the main factors restraining this process is the fact that fintech companies are forced to work in those market segments where the margin does not exceed the level of 2-4%, therefore the profitability of fintech companies must be achieved by increasing the volume of financial services, and this requires time, resources, organizational efforts, work to gain a positive reputation on the market, etc.

The strengthening of the market competitiveness of fintech companies can be facilitated by the policy of institutional structures aimed at:

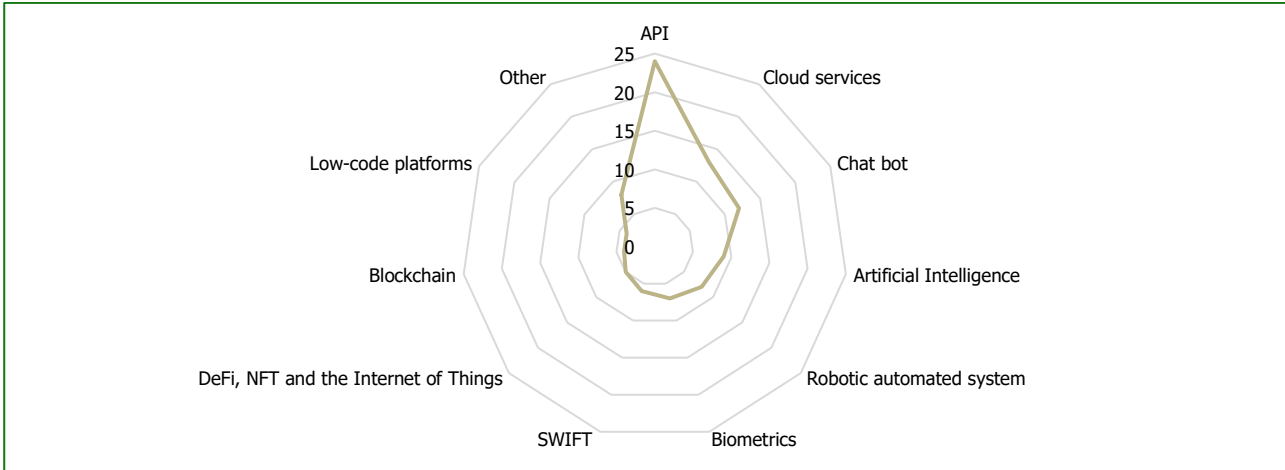
- development of digital systems for continuous monitoring and forecasting of the main risks and threats in the financial market for companies in the non-banking sector;
- increasing the level of deregulation of those sectors of the market of digital non-banking financial services, which are characterized by a low level of risks;
- acquisition of the appropriate level of development by structures of intermediaries in the sector of non-banking financial services;
- increasing the level of liquidity of digital financial instruments.

It is worth noting that certain steps are being taken in this direction, in particular, regarding the deregulation of sectors of the digital non-banking financial services market, as evidenced by the adoption of Laws of Ukraine No. 1953-IX and No. 2074-IX. At the same time, due to: significant rates of introduction of new digital technologies; expansion of the spheres of use of those technologies that have already entered the market; significant dynamism of external influences both on the financial market as a whole and on certain subjects of this market (for example, significant losses of financial institutions due to the occupation of Ukrainian territories by the aggressor), there is a need to constantly adjust the regulatory influences of institutional structures in the indicated directions.

This confirms the thesis of the research that the dynamic development of digital technologies leads to a new feature of competition in the financial and credit market of Ukraine - the need for quick adaptation to changes in digital technologies, prompt detection, testing and implementation of new opportunities that digital innovations open up.

It is also worth noting that it is precisely the example of fintech companies where a new phenomenon is clearly manifested - mutual multiplicative strengthening of the development of digital and financial technologies, which leads to increased competition both in the market of financial services and in the market of the latest digital technologies, which, in particular, is indicated by the data, presented in Figure 2.





**Figure 2. Share of digital technologies by their types used by fintech companies, %.** (Source: based on data from the Catalog of FINTECH companies of Ukraine, 2023)

Figure 2 shows which digital technologies are preferred by fintech companies, that is, which technologies according to their managers give them competitive advantages in the digital services market. The most promising is the implementation of application programming interfaces (API) [20]. Significant attention is paid to the implementation of the API, in particular, because, in accordance with the legislation of Ukraine, as early as mid-2025, access to user accounts will be open for the use of the specified software, which is able to implement data exchange between banks where accounts are opened in the most effective way customers and companies providing payment services. This will lead to an increase in the level of cooperation between the mentioned structures [29].

The market of cloud services, even during the war of significant intensity, increased by ~22.8% and its value is ~USD 46.2 million [7]. The use of artificial intelligence is growing rapidly. Almost 80% of managers of fintech companies consider this direction of development promising for obtaining competitive advantages in the market [7]. Since the majority of customers use chatbots, which ensure the proper efficiency of business activities, and reduce costs, their implementation by fintech companies is justified. At the same time, the share of digital technologies, which were previously considered promising, tends to decrease. These are, for example, DeFi, NFT and the Internet of Things (Figure 2). This also indicates a significant risk of uncertainty in forecasting the direction of the development of digital financial services.

In general, for fintech companies, there is a dynamic identification and development of promising niches that require not only new technological solutions but also new approaches to the organization and management of financial activities in the mentioned areas. This shows that fintech companies are still at the stage of forming their technological and business ecosystem. It should also be noted that fintech companies' own financial resources (more than 66% of which rely only on their own funds) compared to traditional financial institutions, for example, banks, are not yet sufficient for sustainable competitive development of some market areas of digital financial activity. Therefore, it is not the direct competition of fintech companies with banks that seems promising, but their close mutually beneficial cooperation in the market of digital financial services.

Banks use different approaches to strengthen their competitive positions in the digital technology market by using the services of fintech companies. Thus, Oschadbank, PUIB, Ukrgazbank, Alfa-bank, and Raiffeisen Bank use the tactics of joint projects with fintech companies, and PrivatBank, OTR Bank Ukraine, MetaBank chose the path of their own development of projects in the field of digital technologies, their incubation and acceleration [39]. At the same time, the number of banks becoming founders of fintech companies is growing. Thus, in 2023, banks accounted for 12% of the total number of founders of fintech companies [7]. Such a division in the approaches of banks is indicative, especially given the fact that today the largest set of digital services is provided by JSC CB "PrivatBank" [2]. This shows that the strategy of own development of projects in the field of digital technologies, JSC KB "PrivatBank" contributed to a significant increase in the number of customers, and an increase in the deposit base, which gave the bank the opportunity to increase active operations and, accordingly, strengthened its competitive position.

The competitive positions of banks today are more established than those of new participants in the financial market, in particular, because banks have experience in using financial technologies, specialists who can support these technologies, and financial resources that are able to compensate for the risks of digitalization of financial services, in particular, the risk of a significant change in the market circumstances; cyber risks; risks of disruption of system continuity due to technological shortcomings of financial services; legal risks, etc.

At the same time, the competitiveness of banks in a strategic plan is threatened by:

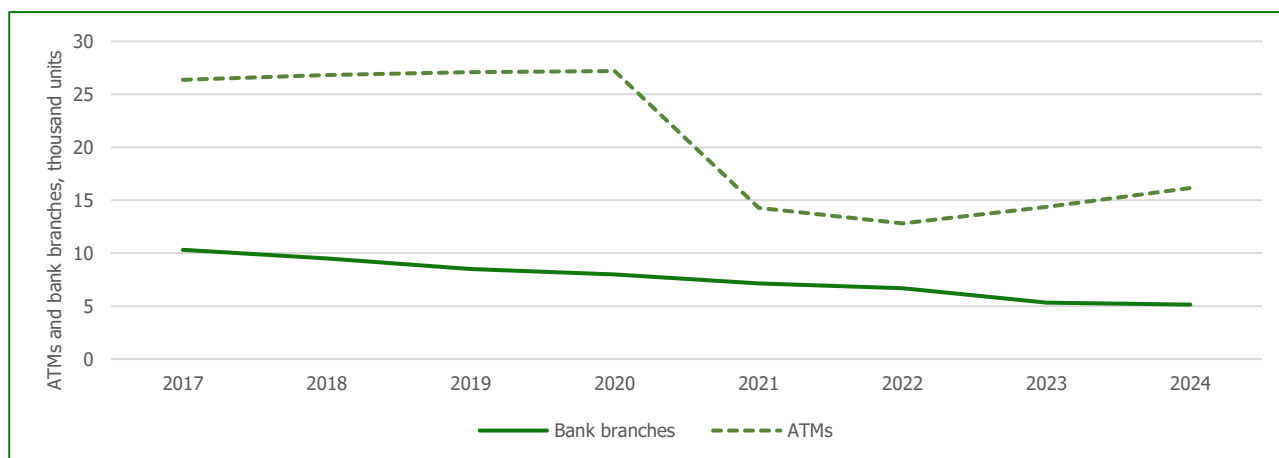
- reduction of the client base, primarily the client base of individuals, as a result of migration processes, depopulation, and significant differentiation of the population by the level of solvency;
- decrease in the level of customer loyalty due to the entry of new players into the market;
- the growth of the directions of competition in addition to the traditional competition between banks, in particular, for the strengthening of the competitive positions of both individual non-banking financial institutions and non-financial companies, as well as their groups, in a strategic perspective;
- decrease in the level of ease of obtaining financial services by clients in comparison with non-banking financial institutions;
- reducing the need for traditional banking services, for example, due to the spread of online P2P lending, which narrows the role of financial institutions to providing the opportunity to use their infrastructure;
- the emergence of new financial services, which the traditional banking sector is not ready for operational implementation, due to ongoing digitization;
- the need for financial expenses, which are characterized by a significant level of risks, for the permanent implementation and updating of modern digital infrastructure;
- the unevenness of regulatory requirements and the effect of legal norms on all financial market participants.

Today, banks are strengthening their competitiveness, identifying new circumstances that can lead to its reduction, and counteracting them. Thus, research by scientists, initiated and financed by Deutsche Bank, pointed to the costliness of the retail network of financial services of banks, which relies on the network of bank branches. The budget for the maintenance of these branches (purchase/lease of premises, their repair and arrangement, payment of personnel, etc.) makes up more than 60% of the costs for the indicated network of bank branches [15].

At the same time, the digital system for the provision of financial services provides a reduction in customer retention costs (by more than 4%), an increase in the volume of services (by 8%), and a reduction in service costs (by ~14%). In general, the online network provides a 26% increase in profit for one client from the use of a branch network [15]. Therefore, citing many studies the tendency to reduce bank branches as a negative fact of a decrease in the level of interaction of banking institutions with clients is, on the contrary, a positive phenomenon, which indicates an increase in the efficiency of financial institutions due to an increase in the level of their use of digital technologies [32].

During the studied period of 2017-2024, there was a process of steady reduction in the number of bank branches in Ukraine and, accordingly, an increase in the rate of installation of ATMs (Figure 3). At the same time, in the studied period of 2017-2024, two sub-periods of relatively stable development of the banking services market can be distinguished - before the period of full-scale war and the period of 2022-2024, characterized by the rapid development of the customer service sector using the ATM network (Figure 3).

Both processes are a consequence of the ongoing digitalization of banks. The change in the number of bank branches indicates this indirectly, and the change in the number of ATMs - directly.



**Figure 3. Dynamics of changes in the number of ATMs and bank branches in Ukraine, thousand units.** (Source: based on data from the National Bank of Ukraine, b., 2024; Statista. ATMs & Bank Branches, 2024)

The data presented in Figure 3 are provided on January 1 of each year for the studied time period.

The uniform process of reducing bank branches is not characteristic of all banks. For example, a full-scale war led to a significant reduction in bank branches of JSC "UkrGasbank". In 2022, the number of branches of JSC "UkrGasbank" was reduced by 20%, and from 01.01.2023 to 01.04.2024, their number had a tendency to grow and was increased by 3%.

Another strategy was chosen by the management of JSC "Oschadbank". In 2022, the number of its branches was reduced by 23%, and from 01.01.2023 to 01.04.2024, their number almost did not change.

The management of PrivatBank JSC reduced the number of branches by 14.5% in 2022 and steadily continued this reduction in 2023. From 01.01.2023 to 01.04.2024, the number of JSC CB "PrivatBank" branches was reduced by another 13.6%.

The specified three approaches to the use of the network of bank branches also testify to the strategy of banks in the conditions of digitalization of financial and credit activities.

The reduction of bank branches is also evidence of a change in the structure of bank income, as the volume of financial resources to cover costs decreases, which accordingly allows for the formation of the necessary financial reserves for other areas of financial and credit activity [4] and, accordingly, makes it possible to increase the competitiveness of banks.

The reduction of bank branches also leads to a decrease in the level of income from traditional banking services, a decrease in the importance of interest income and an increase in the level of commission income, in particular from the provision of digital financial services. This is confirmed by the data presented in Figure 4.

Despite certain fluctuations in interest and commission income indicators of banks, linear long-term trends confirm a systematic decrease in the level of interest income of banks at a rate of  $\sim -0.8611$ , which is determined by the slope ratio of the trend line and the increase in the rate of commission income of banks, equal to  $\sim 0.5571$  (linear trend equations are presented in Figure 4).

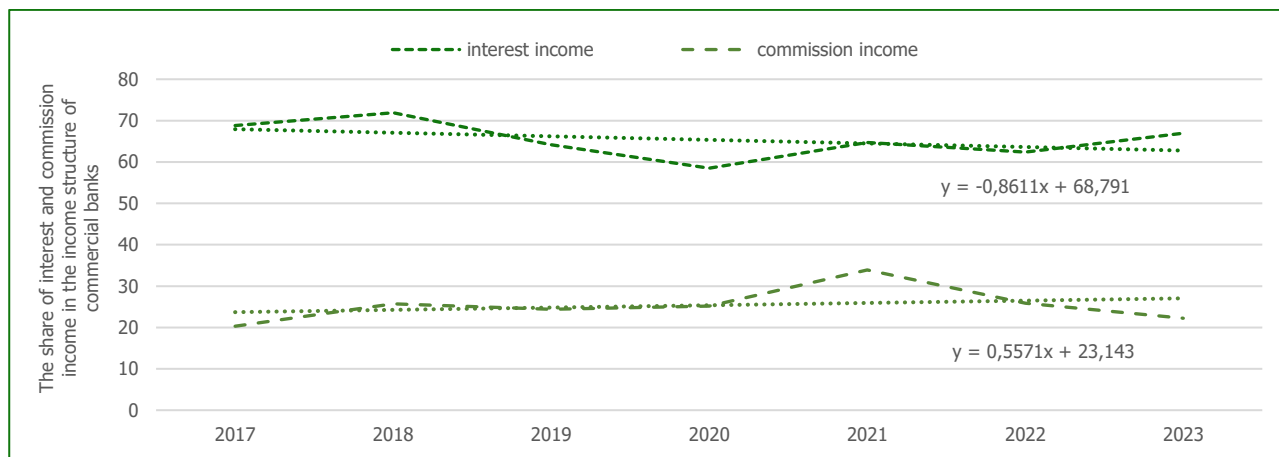
According to the author's calculations, there is a high level of correlation between the decrease in the number of ATMs and bank branches as a result of the development of the system of electronic transfers and the data on banking activities given in Table 1.

The correlation coefficient of the decrease in interest expenses due to the decrease in the number of bank branches is 0.722, and the decrease in interest expenses due to the decrease in the number of ATMs is 0.852. At the same time, the correlation of commission costs due to the decrease in the number of bank branches is -0.888, and the correlation of commission costs due to the decrease in the number of ATMs is -0.755.

According to the author's calculations, there is a high correlation value of the indicated indicators with the digital competitiveness rating of Ukraine, given by the World Competitiveness Center Digital Competitiveness Ranking [40]. Thus, the correlation coefficient of banks' interest income with the rating of the development of digital technologies is 0.604; the correlation coefficient of commission income of banks with the rating of the development of digital technologies is 0.866; the correlation coefficient of commission income of banks with the overall rating of digital competitiveness is 0.763. This confirms the significant dependence of the dynamics of changes in the structure of bank incomes on the level of development of digital technologies, which, in particular, indicates the development of those digital areas on which financial and credit institutions do not directly influence, for example, digital infrastructure.

Also, according to the author's calculations, there is a high level of correlation between the decrease in the number of ATMs and bank branches as a result of the development of the system of electronic transfers and the data on banking activities given in Table 1.

The correlation coefficient of the decrease in interest expenses due to the decrease in the number of bank branches is 0.722, and the decrease in interest expenses due to the decrease in the number of ATMs is 0.852. At the same time, the correlation of commission costs due to the decrease in the number of bank branches is -0.888, and the correlation of commission costs due to the decrease in the number of ATMs is -0.755.



**Figure 4. Dynamics of interest and commission income in the structure of income of commercial banks of Ukraine, %.** (Source: based on data from the National Bank of Ukraine, d, 2024)

Also, a significant incentive for the formation of a competitive environment in the financial and credit sector of the Ukrainian economy is that digitalization leads to an increase in the profitability of banks that properly use its advantages. That is, digitalization affects bank profitability indicators both directly and indirectly.

The expansion of new areas of banking activity, opened by digitalization: the use of credit cards, the development of mobile banking, Internet banking, etc., directly leads to an increase in the profitability of banks [12].

Digitalization of the economy as a whole has an indirect effect on the growth of banks' profitability, since this process leads to an increase in the digital habits of the population and, accordingly, an increase in trust in digital banking tools. Also, the development of digital infrastructure, on which banks do not spend their own financial resources, has a significant indirect effect on the profitability of banks. Thus, the correlation coefficient of profitability of banks with the rating of digital technology development is  $\sim 0.881$ , and the correlation coefficient of profitability of banks with the overall rating of digital competitiveness is  $\sim 0.661$ .

At the same time, both the total amount of cash inflows to banks and the stability of financial flows are increasing. This stability leads to a reduction in the risks of financial and credit activities, in particular, due to the diversification of cash flows. The way to reduce the risks of banking activity is also the narrowing of the sphere of established financial operations and established services due to their displacement from use by the latest digital services, for example, bank transfers - transfers from card to card.

The rapid growth of the volume of innovative financial services and the strengthening of competition in this market of banks and non-bank financial and credit institutions is due to the profitability of these services, in particular, due to their mass.

A significant level of competition in such a segment of the market of digital financial services as the issuance of electronic money is still evidenced by the small number of banks that have been given such an opportunity. According to the NBU, there were only seven Ukrainian banks at the end of 2021.

According to the study of the volumes of transactions carried out using electronic means of payment in a relatively stable period - before the start of full-scale aggression, the volumes of cash withdrawal transactions stabilized at the level of 1750-1780 UAH billion, and the volumes of non-cash transactions from 2018 to 2021 increased by 41%. This indicates an increase in the level of trust in electronic means of payment and in financial and credit institutions that implement their use. The number of credit cards issued by banks increased rapidly during this period. Thus, the issue of MasterCard cards increased by more than 17%, Visa cards - by 45%, and the number of issued cards by the state payment system NSP "PROSTIR" remained relatively stable at the level of 0.6 million units.

The level of competition in the payment card market is emphasized by a significant disproportion between the market shares held by its main participants. Thus, the first place, with a market share of over 43%, is occupied by PrivatBank, about 20% of the market each went to Raiffeisen Bank Aval and Oschadbank, and other institutions - respectively, much smaller shares. In particular, Ukrsibbank - up to 5%, Ukreximbank  $\sim 1.6\%$ . The shares of other banks in the market of payment cards are not significant. Payment cards are not only one of the many digital trends in the financial services market. They are also: a powerful tool for banking institutions to attract significant amounts of funds, an effective marketing tool, and a mechanism for increasing competitiveness. Payment cards are also a tool of macroeconomic influence,

in particular as a means of ensuring the controllability of money circulation, reducing the share of cash in circulation, that is, reducing the costs of servicing cash circulation [38]. Therefore, the regulator is introducing various mechanisms to promote the digital transformation of the financial and credit sector. Under the conditions of military aggression and, accordingly, the growth of the need for investment volumes to level the impact of new risks, the use of the mentioned mechanisms becomes much more difficult (Table 2).

**Table 2. The level of achievement of goals by promising areas of digital development of the financial and credit sector, %.** (Source: based on data from the National Bank of Ukraine, c., 2023)

№	Promising directions of promoting the digital development of the financial and credit sector	The level of goal achievement by direction, %
1	Development of the open architecture of the financial and credit market and the oversight	93
2	Development of the FinTech market, digital technologies and platforms of the financial and credit sector	75
3	Development of SupTech&RegTech	72
4	Cyber resilience of the financial and credit sector system	88
5	Development of the market of non-bank financial services	60
7	Introduction of crypto asset market regulation	0
8	Implementation of data-centric technologies for control of financial transactions of laundering incomes, obtained by illegal means	0

Thus, in order to increase the effectiveness of the regulatory influence on the formation of the competitive financial market of Ukraine, taking into account its digital transformation, by the decision of the Board of the NBU No. 1010-rsh dated 26.12.2019, the Strategy for the Development of the Financial Sector until 2025 was implemented [26]. A significant increase in the level of risks for the financial sector, and the dynamism of changes forced the regulator to suspend the said decision of the NBU Board. At the same time, the level of goal achievement in individual directions (see Table 2) indicates not only the degree of development of the market for the introduction of digital technologies, but also the complexity of the tasks of regulatory influence aimed at the formation of significant directions of development, in particular, directions capable to significantly reduce the level of individual risks for the financial market, financial and credit institutions and, in general, the economy of the country (see items 7-8, Table 2).

Failure to fully achieve the goals set by the Strategy for the Development of the Financial Sector by 2025, and moreover, the suspension of its implementation indicates significant difficulties in implementing competitive strategies of financial institutions and a high level of uncertainty of the main factors influencing their market activity. This confirms the conclusions given in the article by Prykaziuk N. et al. [29] regarding the significant instability of the financial market during the war and post-war recovery. The high level of uncertainty of the main influencing factors, the significant instability of the financial market during the war and the post-war recovery also do not contribute to the forecasting of prospective investment directions. Uncertainty of the main influencing factors, as evidenced by the data shown in Table 2 also hinders the implementation of effective regulatory measures to promote the implementation of digital tools and the activities of financial institutions.

## DISCUSSION

As stated above, the purpose of the article is to identify the general features of the development of the digitalization of the financial and credit sector, to study and objectify the effects of digitalization on the formation of a competitive environment of the financial and credit sector, to introduce not only qualitative but also quantitative assessments of these impacts. The objectives of the article are an assessment of the level of competitiveness in the market of digital financial services of traditional market participants and new representatives of the non-banking sector, identification of the main threats and prospects for growth of their competitive potential, tactical and strategic advantages, directions of regulatory influence, promoting adaptation of market participants under the influence of digitalization.

This is in a certain contradiction with the established view of the role of digitalization in a competitive financial market, since scientists mainly reduce the role of digitalization in the formation of the competitive environment of the financial and credit sector to the influence of certain technologies, as, for example, it is done in the articles of Akopian D. [1], Danylyshyn V. and Synytsia S. [9]. However, as established by the presented research, the impact of digitalization on the formation of a competitive environment is a complex multistage process. Moreover, each of the following stages should be a segment

of the complex digital strategy of the financial market entity, and it is the sequential and complex nature of the implementation of the stages of digitalization that provides permanent competitive advantages. Digitization, which is not given enough attention in the articles of Akopian D. [1], Danylyshyn V. and Synytsia S. [9], has a much wider impact due to, in particular, both the strengthening of the competitiveness of financial institutions and the emergence of new conditions for their cooperation and, in general, to the mutual reinforcement of digital and financial technologies, as indicated in the presented study. It is the multiplicative nature of the interaction of digital and financial technologies that is often overlooked by scholars who are focused on the study of technological change.

Digitization of the financial and credit sector is also often identified with the development of fintech companies that are developers of new technologies. Balytska M. and Brovenko K. [3] pointed out this, in particular. This article examines various aspects of the activity of fintech companies, in particular, their predominant reliance on their own financial resources, which is extensively considered by the authors. The article by Balytska M. and Brovenko K. [3] provides data for 2019 and 2020 on the activities of fintech companies in the world in the field of payments and transfers, which they have chosen as their target service. These data indicate a reduction in the volume of the specified service in this period by 81.4%. However, attention to this factor as a sign of the unstable nature of fintech companies' activity is not given in the specified article [3]. Therefore, the determination of a group of such factors as evidence of an unstable competitive position is the result of the presented article, which has signs of scientific novelty and practical significance. Also, in the article of Balytska M. and Brovenko K. [3], the role and weight of fintech companies as financial market players are not specified. Therefore, the authors pay attention to their role as representatives of the non-banking sector in the financial market, and their competitive opportunities.

In the article of Kovalenko V.V. [19] in the analysis of the competitive advantages of banks over FINTECH companies, the dynamic nature of the development of both technologies and the market is not taken into account, therefore, for example, according to Kovalenko V.V. [19], the advantage of banks regarding the possibility of obtaining various services in one place is to some extent levelled by the technologies of neobanking, remote access, etc. Also, in the article Kovalenko V.V. [19] did not pay attention to the problem, the formulation and consideration of which the authors consider one of the important results of their work. The competitiveness of a financial institution is determined not so much by the short-term capture of the market share of some digital financial services, but by the formation of a comprehensive strategy for the digital activity of a financial market entity, and it is precisely the sequential and complex nature of the implementation of the stages of digitalization that gives a financial institution permanent competitive advantage.

The thesis of Kasych A., and Naumkina I. [13] that "modern clients in the process of evaluating a financial institution no longer compare different banks" and the conclusions based on this thesis about the directions of strengthening the competitive position of financial institutions do not seem certain. Also, in view of the absolute necessity, indicated in the article by Kasych A. and Naumkina I. [13], for banking institutions to revise their own business models, given the need to maintain a competitive position in the market of financial services, it is not necessary to fully extend the methods and technologies of neobanking to the traditional banking activity. Using correlation analysis, the authors proved the high value of the correlation of interest and commission income of banks with the digital competitiveness rating of Ukraine. Therefore, as substantiated in the presented research, it is not always worth relying exclusively on the latest technologies in banking because a more effective strategy may be, for example, promoting the development of digital infrastructure.

Kuznietsova M. and Huihova Y. [21] indicate that the effectiveness of the banking sector today depends not on the level of their adaptation to changes but on their ability to introduce innovative technologies. This thesis is not indisputable, since the implementation of innovations by banks contributes to their competitiveness, that is, it helps to adapt to today's challenges. Determining the adaptability of a financial institution as one of the main goals of management is also the conclusion of the presented work.

In the article of Khudolii Y. S. and Khalievina M. O. [14] it is indicated that the rate of development of fintech companies is much higher than banking institutions and that this is a sign of their competitive advantages. At the same time, it should be taken into account that the significant pace of development of fintech companies is due, first of all, to their low starting position and finding niches in the field of financial services. The dynamism of market changes and the increase and level of uncertainty of the main influencing factors, as outlined in the presented article, is especially significant for small financial parameters. Therefore, as indicated by the authors of the presented article, it is worth paying attention to constant systemic changes in competitive positions, which are formed by relevant competitive strategies of financial market participants.



## CONCLUSIONS

The significant results of the presented research include the following:

1. Compared to other studies in this area, a broader view of the role of digitalization in shaping the competitive environment of the financial and credit sector is proposed. For this purpose, the genesis of digitization was investigated and its stages were determined.
2. It is indicated that the genesis of digitalization of the financial and credit sector was not uniform and took place in certain stages. The staged digitalization was, in particular, a consequence of the need to adapt financial and credit market participants to the latest technologies and to determine the pace of each stage.
3. The signs of the stages are divided and it is indicated that each of them is not so much a sign of the formation of a separate share of the digital financial services market as a segment of the complex digital activity of a financial market entity, and it is the sequential and complex nature of the implementation of the stages of digitalization that gives a financial institution permanent competitive advantage.

This not only has signs of scientific novelty, but also has practical significance, as it provides an opportunity to rank financial institutions according to the level of digital development, helps to effectively implement a comprehensive digitalization strategy and, moreover, to predict the possible level of competitiveness of a financial institution.

4. An important result of the study is the establishment that the competition of market participants takes place both horizontally - by the field of services, with the aim of obtaining market share, and vertically - through all stages, based on the analysis and forecast of new areas of services opened by digitalization.
5. Using statistical data, it is indicated that the population gains experience in using digital services and this contributes to increasing trust in the financial and credit sector of the economy of Ukraine and, accordingly, to the growth of prospects for digital financial activity. Using correlation analysis, the authors proved the high value of the correlation of interest and commission income of banks with the digital competitiveness rating of Ukraine. Thus, the correlation coefficient of banks' interest income with the rating of the development of digital technologies is 0.604; the correlation coefficient of commission income of banks with the rating of the development of digital technologies is 0.866; the correlation coefficient of commission income of banks with the overall rating of digital competitiveness is 0.763. This confirms the significant dependence of the dynamics of changes in the structure of bank incomes on the level of development of digital technologies, which, in particular, indicates the development of those digital areas on which financial and credit institutions do not directly influence, for example, digital infrastructure.
6. It is noted that the widely used digital services become platforms for further digitalization of the financial services market, which leads to the expansion of competition in it.
7. The dynamism of the development of digital technologies leads to the peculiarity of competition in the financial and credit market of Ukraine - the need for quick adaptation to changes in digital technologies, prompt identification, testing and implementation of new opportunities that digital innovations open up.
8. It is noted that the example of fintech companies clearly shows a new phenomenon - the mutual acceleration of the development of digital and financial technologies, which leads to increased competition both in the market of financial services and in the market of the latest digital technologies.
9. The dynamics of changes in the market share by types of digital financial services of fintech companies were studied, and a significant fluctuation of their competitive positions was noted, which indicates a competitive struggle for certain areas of activity and reveals the instability of the competitive positions of FINTECH companies. This result has signs of scientific novelty.
10. It is indicated that the complex application of modern financial technologies by FINTECH companies, in view of their inclusive orientation, and personalization of customer service, gives them the opportunity to strategically gain a significant competitive advantage over traditional financial institutions due to the prospect of deep integration of these companies into the economic and social life of the population. At the same time, the prospects of mutually beneficial cooperation in the digital services market of FINTECH companies and banks are indicated. The directions of actions of institutional structures that will contribute to strengthening the market competitiveness of fintech companies are indicated.

11. It is noted that the competitive positions of banks today are more established than those of other participants in the financial market, in particular, because banks have experience in using financial technologies, specialists who can accompany these technologies, financial resources that are able to compensate for the risks of digitization of financial services, for example, the risk of a significant change in market conditions; cyber risks; risks of disruption of system continuity due to technological shortcomings of financial services; legal risks, etc. At the same time, threats to banks' competitiveness are indicated in a strategic plan, which has a practical application.
12. A high value of the correlation of interest and commission income of banks with the rating of Ukraine's digital competitiveness was revealed. The significant dependence of the dynamics of changes in the structure of banking income on the level of development of digital technologies is indicated. The above said has scientific novelty.
13. Also, a significant incentive for the formation of a competitive environment in the financial and credit sector of the economy of Ukraine is that digitalization leads to an increase in the profitability of banks that properly use its advantages. Digitalization affects banks' profitability both directly and indirectly. The expansion of new areas of banking activity, opened up by digitization: the use of credit cards, mobile banking, Internet banking, etc., directly leads to an increase in the profitability of banks. Digitalization of the economy as a whole has an indirect effect on the growth of banks' profitability, since this process leads to an increase in the digital habits of the population and, accordingly, an increase in trust in digital banking tools. Also, the development of digital infrastructure, on which banks do not spend their own financial resources, has a significant indirect effect on the profitability of banks.
14. Using the example of the financial market sector - the payment card market, the significant disparity in market share held by its main participants is specified, which indicates the importance of correct and incorrect assessment of the prospects of digital services sectors and the need for timely investments in them.
15. It is indicated that the high level of uncertainty of the main influencing factors, significant instability of the financial market during the war and post-war recovery does not contribute to the identification of promising investment directions.

Dynamic changes in the competitive environment of the financial and credit sector of Ukraine's economy as a result of external influences lead to changes in the direction of the impact of digitalization on financial market participants, each of the new stages of digitalization causes a radical restructuring of the competitive environment and even changes the role of digitalization in this process. Therefore, the following studies will be devoted to detailing the aspects of the indicated problems.

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## ADDITIONAL INFORMATION

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### AUTHOR CONTRIBUTIONS

*All authors have contributed equally.*

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### CONFLICT OF INTEREST

*The Authors declare that there is no conflict of interest.*

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## РОЛЬ ЦИФРОВІЗАЦІЇ У ФОРМУВАННІ КОНКУРЕНТНОГО СЕРЕДОВИЩА ФІНАНСОВО-КРЕДИТНОГО СЕКТОРУ ЕКОНОМІКИ УКРАЇНИ

Мета дослідження – формалізація генези цифрових фінансових технологій (ЦФТ), виявлення: впливу її етапів на конкурентоспроможність представників фінансово-кредитного сектора (ПФКС), особливостей цифрової конкуренції; кількісних оцінок зазначених впливів. Досягнення цієї мети має наукове й практичне значення, зокрема для формування ефективної цифрової стратегії ПФКС. Установлено, що генеза цифровізації не була рівномірною й відбувалася за етапами, які є наслідком рівня розвитку ЦФТ, необхідності адаптації ПФКС до них та обумовлюють особливості конкуренції ПФКС. Установлено, що динамічність ЦФТ призводить до особливостей конкуренції ПФКС – необхідності адаптабельності до змін, оперативного виявлення, апробування нових можливостей, які відкривають ЦФТ. Досліджено динаміку зміни частки ринку фінтех-компаній за видами цифрових фінансових послуг і вказано на значне коливання їхніх конкурентних позицій, що свідчить про конкурентну боротьбу за напрями діяльності й виявляє несталість конкурентних позицій фінтех-компаній. Указано, що комплексне застосування фінтех-компаніями сучасних ЦФТ надає їм можливість у стратегічному плані набути суттєву конкурентну перевагу над традиційними ПФКС через перспективу глибокої інтеграції в економічне й соціальне життя населення. Водночас зазначені перспективи взаємовигідної співпраці на ринку цифрових послуг фінтех-компаній і банків. Зазначено, що на прикладі фінтех-компаній проявляється новий феномен – взаємне мультиплікативне посилювання розвитку ЦФТ, що призводить до збільшення конкуренції.

Зазначено, що конкурентні позиції банків на сьогодні є більш усталені, ніж у нових ПФКС, і вказані причини цього. Застосування статистичних методів дозволило об'єктивізувати впливи цифровізації на ринок. Кореляційний аналіз надав можливість кількісно оцінити вказані впливи. Указано, що виявленню перспективних напрямів інвестицій не сприяє високий рівень невизначеності основних факторів впливу, значної нестабільності фінансового ринку під час війни.

За результатами дослідження впливів цифровізації на ПФКС визначені фактори формування загроз конкурентоспроможності банків у стратегічному плані та вказані напрями дій інституційних структур, які сприятимуть посиленню ринкової конкурентної спроможності небанківських фінансових структур.

**Ключові слова:** цифровізація, фінансовий ринок, конкурентне середовище, фінансово-кредитний сектор, інноваційні фінансові послуги

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