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Summarising directions for using fintech products in the field of financial sector development, in particular mortgage financing

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Abstract. Mortgage lending has become the most important part of the financial market. The most common use of a mortgage is the purchase of an apartment or a private house on credit by an individual. Given the importance of the chosen topic, the goal of the research is defined as follows: to identify promising directions for the development of mortgage financing using fintech products. The list of fintech products that can be used in the field of mortgage financing to improve the system of managing mortgage loan processes using methods of generalisation and systematisation has been elaborated. It has been discovered that the mortgage lending process provides for the analysis of a borrower's risks as well as more complex procedures for determining optimal interest rates for mortgage lending. When the analysis of discount rates is taken as a basis, it is necessary to analyse market volatility. These results have been achieved using methods of analysis and systematisation. Fintech tools are increasingly being used to facilitate the work on data analysis in the development of the mortgage lending system, as they enrich the toolkit for ensuring the security of the mortgage financing process both at the level of financial institutions and state regulation. The peculiarities of using fintech tools have been identified. Main trends and risks of the development of modern mortgage financing using the concretisation method have also been discovered. The possibilities of using fintech tools in the field of mortgage financing have been determined; in particular, an approach to creating a technical task of using fintech tools for further development of mortgage financing has been created. The author's approach will be of practical significance for both financial institutions providing mortgage financing and mortgage market regulators to minimise risks in the system of providing mortgage loans

Keywords: broker; default; interest rates; risk; volatility

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INTRODUCTION

A mortgage is the most important factor of socio-economic progress; its development is an obvious direction of further economic recovery for the country when overcoming an economic crisis or during a post-war period, when there is an acute need for new residential construction to replace the destroyed one. The need results from two main factors: an acute housing shortage for the country's population and low solvency of the population resulting from the fall in living standards due to military operations. Mortgage lending is a solution to the investment crisis, and it contributes to creating conditions for sustainable economic growth through investments in the housing sector and related industries. For this reason, a mortgage is one of the promising development directions of bank lending. Moreover, the development of mortgage lending makes it possible to create new jobs, and ensure the development of investment and financial sectors. Mortgage loans are used to finance, purchase, build, and repair residential and industrial buildings. A mortgage is one of the most effective tools for solving the most important problem of providing housing to the population. However, an important issue from this point of view is the revitalisation of the mortgage lending market with the help of modern digital tools.

The mortgage financing market is one of the most popular and developed in the financial sphere; however, this market provides for the participation of the state as a

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stimulator of investment processes, on the one hand, and the development of tools for diagnosing risks and counteracting their negative impact on the entire mortgage lending system, on the other. And in this context, fintech products are able to solve many issues faced by the field of financial services in general and mortgage financing in particular. Fintech tools for the development of the financial market are getting more and more widespread. Unburdened by numerous regulatory requirements, unlike banks and other financial institutions, fintech companies are able to establish strong relationships with clients and quickly adapt to market trends, radically changing the usual ways in which traditional market players operate. R.V. Ionescu *et al.* (2023) believe the fintech segment may face a blurring of boundaries in the future as a result of the post-pandemic period of 2020 with soaring inflation and capital appreciation around the world. As N. Kholiavko *et al.* (2021) pointed out, some fintech companies are already obtaining banking licenses or considering such a possibility. Whereas Ye. Ostropolska (2021) supposes that fintech companies, can go further and form their own position and create demand for the provision of banking services. It allows them to expand the scope of competition and avoid the need to comply with various regulatory requirements of different markets in which they operate. Banks are seeking partnerships with fintech companies and some are already working with them to take advantage of the opportunities offered by innovation and meet the demands of tech-savvy consumers.

According to R.D. Sousa *et al.* (2021), in a general sense, the process of digitisation of financial services and money, taking place nowadays, creates opportunities to expand the scope and increase the efficiency of financial services and boost economic development. Researchers I. Tarasenko *et al.* (2022) emphasise that countries should take advantage of these opportunities and implement economic policies, supporting and encouraging the development and implementation of secure financial innovations. Technological progress blurs the boundaries of financial companies and the financial sector. New types of infrastructure, service providers, products, business models, and market structures are shaping the market landscape in many ways. It is necessary to ensure the compliance of market conditions with the main tasks of economic policy in the process of further transformation of the financial sector and emergence of economic benefits and expenses.

Despite the significant attention of researchers to the given topic, there are still unresolved questions regarding the definition of certain fintech products that can be further used in the field of mortgage financing, and no single universal approach to the development of a technical task for using fintech tools for further development of mortgage financing has been created so far. Given the relevance of the research, it becomes possible to formulate the goal of the paper, which consists in determining the prospects for the development of mortgage financing using fintech products. To achieve the goal, it is necessary to solve the following tasks: to specify the list of fintech products that can be used in the field of mortgage financing; to identify main trends and risks of the development of modern mortgage financing; to determine the possibilities of using fintech tools in the field of mortgage financing, in particular, to devise an approach to creating a technical task of using fintech tools for further development of mortgage financing.

MATERIALS AND METHODS

In the process of research, a generalisation of approaches to the introduction of fintech products in the creation and development of the mortgage financing system in the modern conditions of the financial market development has been carried out. The research is stipulated by the increasing importance of managing the latest digital tools that can be used for the development of the mortgage financing system due to rapid changes taking place in the technique, technology, and provision of financial services. Scientific papers for the study have been selected by searching the main databases, such as Web of Science and Scopus. It is worth emphasising that both databases are widely recognised as the most authoritative and allow you to select literature on a wide range of scientific problems. Attention has been focused on scientific publications over the past five years to ensure the maximum relevance of the material used since the field of fintech and mortgage financing is quite dynamic and provides for the analysis of the most current scientific base to obtain accurate and comprehensive results. The time period for searching the database from January 2019 to April 2024 has been determined in the process of conducting research and selecting scientific papers. The research tools are created taking into account the need to implement the possibilities of using fintech tools for the development of the mortgage financing system, as well as the formation of approaches to the development of creating a technical task of using fintech tools for further development of mortgage financing. Theoretical, analytical, and research materials of leading scientists focusing their attention on the problems of using and developing innovations and modern technologies in the financial sector have been used in the process of research.

The main specific research method is the method of building business processes using the Unified Modelling Language (UML) notation, which made it possible to model the process of distributing the roles of participants in the process of using fintech tools to determine the possibilities of mortgage financing, as well as to identify the most relevant fintech products for the development of the mortgage financing system to increase business competitiveness in the field of financial services (Amjad *et al.*, 2021). The method of building business processes using the UML notation and creating a technical task is a systematic procedure for the hierarchical representation of elements, determining the essence of the function performed by each specialist in a certain process according to his position and role in the implementation of the entire business process. The method consists in decomposing the problem into simple component parts and further processing of the decision maker's sequence of judgments, in accordance with his position and decisions he is authorised to make. As a result, the relative degree of element interaction in the process of analysing possibilities of using fintech products to increase the effectiveness of mortgage financing processes can be expressed. Such an approach to solving the problem resulting from the analysis increases the effectiveness of decisions, as well as the criteria by which decisions are approved or rejected. Moreover, during the research,

statistical material from the website of the mortgage corporation Mortgage Lenders (n.d.) has been studied, and data averages for all states separately for different types of loans have been determined on its basis. In particular, the types of "purchase" loans have been considered, i.e., financing the purchase of real estate; the size of loans ranges from 250 to 400 thousand US dollars (as the main range of housing costs for the middle class – the niche with the highest demand) for a good credit rating (good – 620-679). Such a set of data made it possible to identify the situation on the mortgage market for the most in-demand and liquid real estate.

RESULTS AND DISCUSSION

Classic mortgage financing becomes relevant, when an individual is going to purchase residential real estate at the expense of a bank and the real estate is a pledge itself. However, at this stage of development, the essence and content of the concept of "mortgage financing" has expanded significantly. In particular, a mortgage loan can also be obtained by legal entities for the purchase of commercial non-residential real estate. However, in most cases, when it comes to a mortgage, it means getting a loan. In modern economic literature, two approaches to understanding the financial category of "mortgage" can be found. A mortgage, as a type of credit transaction, is related to the acquisition of a real estate object at the expense of the credit resources of a commercial bank, during which the real estate object becomes a pledge itself. In a mortgage, as a form of securing the debtor's obligations, the object of the pledge is a real estate that remains in the use and possession of the debtor, and a commercial bank, in case of non-compliance with the terms of the mortgage agreement, has the right to retain it. In general, the following key characteristics of mortgage financing can be singled out: a mortgage loan is of special purpose; given that housing serves as a guarantee for a lending operation, the funds of the mortgage loan can be directed solely to the purchase of this object. A mortgage loan is issued for a long term, as a rule, from 15 to 30 years; however, the terms may change depending on the agreement terms. Real estate is always the object of a mortgage – it can be commercial and residential real estate, as well as land plots and everything related to them (perennial plantations, buildings, and constructions). When issuing a mortgage loan, in addition to the basic agreement, another document is drawn up – a security deposit, which is subject to state registration.

The development of mortgage lending has led to the so-called mortgage market. The mortgage market is a part of the financial market where financial resources secured by real estate are redistributed. There are primary and secondary markets for mortgage loans. All existing risks in the process of mortgage lending can be divided into two groups: the risks of a borrower and the risks of commercial banks. In the process of analysing possibilities and risks of granting loans, more and more attention is paid to the use of various fintech tools that are able to ensure the efficient and rational use of mortgage resources. Financial technologies have revolutionised the way consumers interact with money and financial services, opening up a new era of innovation and financial development. From blockchain to artificial intelligence (AI), fintech has brought about a wave of transformative technologies, changing the financial landscape (Murinde *et al.*, 2022; Wu, 2022). By understanding the latest developments in fintech, individuals and companies can use these innovations to streamline processes, expand access to financial services, and discover new possibilities for growth. The sphere of mortgage financing has not become an exception, as it has become the sphere of applying a number of financial instruments for the development and improvement of mechanisms for providing mortgage loans and regulating the system of mortgage loans at the macroeconomic level. Table 1 presents the main fintech tools that can be used to improve processes in the mortgage financing system.

Table 1. Fintech tools that can be used to improve processes in the mortgage financing system

Basic tools in the field of fintech	Characteristics related to the mortgage financing market
Blockchain and distributed ledgers technology (DLT)	A blockchain and DLT have revolutionised the world of finance. In fact, a blockchain is a decentralised digital ledger that records transactions across multiple computers, providing transparency, security, and stability. DLT extends this concept by allowing data to be shared and updated across a network of participants. This revolutionary technology has significant prospects for further application in various areas of the financial industry. There are many examples of blockchain-based fintech innovations. Cryptocurrencies such as Bitcoin and Ethereum have gained popularity as alternative forms of digital currency that utilise the security and decentralisation of the blockchain. Stablecoins, which are pegged to traditional currencies, provide stability and speed up cross-border transactions. Decentralised financial (DeFi) platforms use a blockchain to provide services such as lending, borrowing, and crop farming, eliminating the need for intermediaries. Accordingly, a blockchain can be considered as an alternative to classic mortgage financing through banks or mortgage non-banking financial institutions. A blockchain also plays a significant role in the formation and maintenance of secure payments for mortgage loans
AI and machine learning	AI and machine learning contribute to the development of fintech, automation, risk assessment, and personalisation of financial services. AI is the simulation of human intelligence in machines, allowing them to learn from data, make decisions, and perform tasks. Machine learning is a subset of AI, focusing on algorithms that automatically improve with experience. The role of AI and machine learning in fintech. Risk assessment and fraud detection benefit from AI-based algorithms that analyse large volumes of data, identifying patterns and anomalies to identify potential threats. Personalised financial services, such as investment recommendations and individual advice on the specifics of providing mortgage loans, can significantly reduce the risks of late or incomplete repayment of loans. Other examples of AI applications include robo-advisors, automated investment platforms, using algorithms to manage investment portfolios that have gained popularity due to their cost-effectiveness and ability to provide personalised advice. AI can also become helpful for consumers of mortgage loans. It also helps to determine the level of risk for each individual client, applying for mortgage financing

Table 1, Continued

Basic tools in the field of fintech	Characteristics related to the mortgage financing market
Open banking and the economics of applied programming	The concept of open banking, gaining popularity around the world, refers to the practice of sharing financial data through standardised application programming interfaces between banks and third-party providers. This openness creates numerous benefits and challenges for the financial ecosystem. Open banking provides such benefits as increasing competition, driving innovation, and giving consumers more control over their financial data. Giving fintech startups and other third-party providers access to bank data is encouraging the development of new services, from budgeting apps to loan comparison platforms. Open banking allows consumers to integrate their accounts easily, providing a holistic picture of their financial state and facilitating personalised financial management. Open banking can become a provider in the system of development of mortgage financing and control over losses on mortgage loan repayment

Source: created by the author based on T. Beck (2020), I. Aleksieienko *et al*. (2020), N. Hurzhyi *et al*. (2022)

The mortgage market in the world has been growing steadily for quite a long period of time. After the market crash in 2008-2009, the recovery took place quite quickly, and most of the companies remaining on the market have already resumed mortgage lending by the beginning of 2011 (Digital economy…, 2022). According to the public mortgage corporation Mortgage Lenders (n.d.), U.S. mortgage rates have been rising since the beginning of 2024 and have reached their peak since November 2000. The attention is paid particularly to the American mortgage lending market, as it is closely related to the stock market and is a reflection of the general situation in the US financial system. For example, the average interest rate for 30-year loans at the beginning of 2024 rose to 7.79% per annum, compared to 7.63% at the end of 2023. A year earlier, it was 7.08%. Fifteen-year loans are granted at an average rate of 7.03% per annum, against 6.36% a year ago. Freddie Mac calculates average rates based on data from approximately 80 mortgage lenders across the country. Rates do not take into account potential fees and other payments associated with the mortgage (Mortgage Lenders, n.d.). Traditionally, the value of mortgage loans with a small lag repeats the dynamics of the yield of American government bonds, which in turn reacts to the increase in the rate of the Federal Reserve System and forecasts of its dynamics in the future. The yield on 10-year US Treasury bonds amounts to approximately 4.99% per year at the beginning of 2024, compared to 4.62% at the beginning of 2023 (Mortgage Lenders, n.d.).

According to the world statistics on the volume of mortgage lending, the largest increase in the volume of mortgage lending was observed in 2023 in actively developing countries, in particular in Kazakhstan, Argentina, and India (57+ incredible fintech stats…, 2024). The growth is also observed in one of the world's largest mortgage lending markets – the USA, however, at a slightly slower pace. The development of fintech products is closely related to financial markets, so it is worth analysing the amount of income generated in the field of creation and implementation of fintech products. The volume of income generated in the field of fintech products has more than doubled during 2017-2024. Such an active development of the fintech sphere proves its importance and prospects for the modern financial market. The implementation of fintech tools in the field of ensuring the mortgage financing process provides for detailed planning of each action and the creation of a technical task for implementing such tools. The main business rule of the system of implementing digital financial methods is to solve the tasks of analysing financial risks and identifying open banking opportunities, which can be performed by certain persons authorised to make financial decisions (financial analysts and financial directors).

Solving problems in the system of analysing mortgage financing opportunities makes it possible to allocate functions to certain users of this information system. In this case, all previously performed operations (changes in the knowledge base, entered documents) must be saved to resume the workflow from the point of termination (Buss *et al*., 2021; Hryhorash *et al*., 2022). The list of possible functions of a specialist in the development of mortgage financing and the creation of financial tasks can be implemented by authorised programme users and developers of corresponding fintech products for mortgage lending. At the same time, specialists should take into account the fact that the experience and qualifications of each employee must correspond to their functional duties (Kholod *et al*., 2021). A separate attention should be paid to the use of an electronic digital signature, which allows tracking changes made by users to the system and monitoring specialists, introducing corresponding changes (Lucato *et al*., 2019; Sermuksnyte-Alesiuniene *et al*., 2021).

For the effective operation of the system for introducing the latest digital technologies in the field of mortgage lending, an internal bank database must be created for further work with information about potential borrowers. Codes of financial indicators for analysis, evaluation, and forecasting are selected from the list of options offered by the programme. The list of groups of financial indicators for evaluating the creditworthiness of mortgage lenders appears in the list generated by an algorithm based on data entered by interested parties. This list is sorted in descending/ascending order according to the probability of selection (or in alphabetical order) calculated by the programme (Fedyshyn *et al*., 2019). At the same time, access to data and the programme must be personalised to ensure an adequate level of protection of customers' personal data (Chen & Chan, 2022). Information must be verified and systematised to ensure the correct operation of the system (Kontokosta & Hong, 2021). The system's task is to create a unified approach to data entry for their further processing (Popelo *et al*., 2021). The created electronic forms of documents can be checked (in terms of content) by the authorised programme's users – financial analysts and financial directors (Soltovski *et al*., 2020; Bartlett *et al*., 2022). If, during the analysis of financial indicators, deviations from the normative values are detected, the programme informs a financial analyst and financial director

about the discrepancies and the need to promptly review the conditions for providing mortgage financing (Zhou *et al.*, 2021; Ouazad & Kahn, 2022).

Risk analysis is an integral part of any analysis. A risk is defined as the occurrence of an undesirable event that could endanger the project, in particular a default on mortgage payments. There are two groups of risks in the field of mortgage lending: risks related to external factors and risks related to systemic or systematic risks. They are also called systemic or systematic risks and result from external environmental processes and cannot be reduced by diversifying investments. Internal risks, on the other hand, reflect the quality and overall condition of the process management system. Unlike systemic risk, internal risk can be reduced by diversifying investments. A post-condition of the technical task of analysing possibilities of mortgage financing includes the following aspects: specific electronic documents and forms have been created and saved in the information system; specific tasks regarding the implementation of mortgage financing opportunities have been resolved. User roles in the process of stakeholder interaction with the task-solving module should be configured through the user role model, which provides for the delimitation of access rights and the possibility to create an unlimited/limited number of users for each role (Table 2).

Roles determine the level of user access to information resources and functions of the module. The same user can have one or more roles. Increasing the available roles for the user expands the interface of the information system. Figure 1 presents the general functioning model of the module "Using fintech tools to identify mortgage financing opportunities".

Table 2. Description of the roles involved in the model of "Using fintech tools to identify opportunities for mortgage financing"

Roles	Characteristics of functional duties
Financial analyst	Data collection, comparison with the plan, forecasting and analysis of financial indicators, formation of a database for AI training
Financial director	Summarising the results and forming a list of possible managerial decisions regarding the development of a system for analysing fintech tools to determine mortgage financing opportunities
Technical developer and engineer of fintech tools	As a result of communicating with a financial analyst and financial director, the development and implementation of fintech tools to determine mortgage financing opportunities is carried out. Separately, AI algorithms are adjusted to determine the risk level of a certain mortgage contract, and digital banking is adapted to the needs of the target audience
Director	Making managerial decisions

Source: created by the author based on X. Vives (2019), L. Cattaneo & D. Feir (2021)

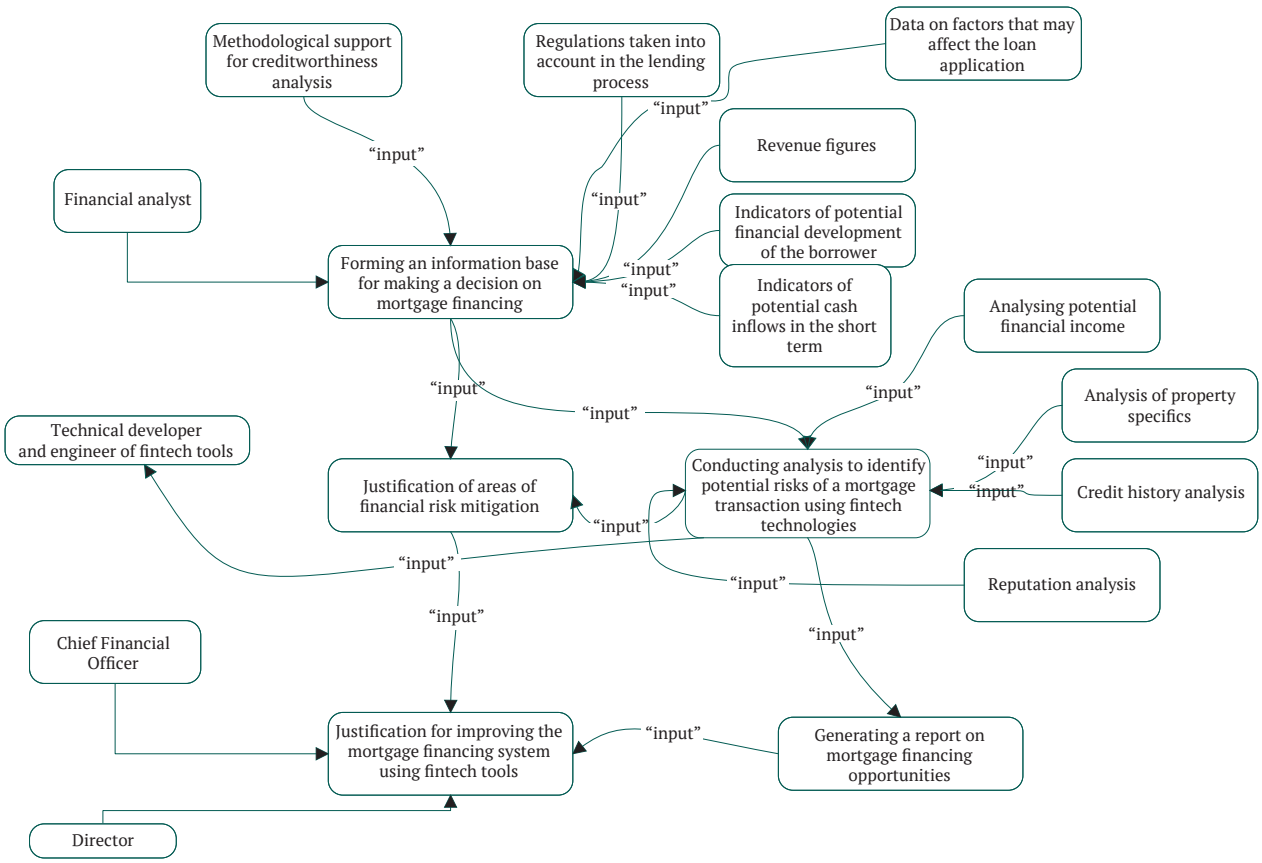

Figure 1. Distribution of participants' roles in the process of using fintech tools to identify mortgage financing opportunities

Source: created by the author

As a whole, when formulating a technical task, it should be taken into account that, as a result of comprehension and systematisation of existing approaches to the basic categories, shaping the systemic basis of mortgage financing, it can be considered appropriate to pay attention to the analysis of the borrower's potential solvency, using fintech tools, in particular based on AI. The use of fintech tools will allow more attention to be paid to risks before making a decision on financing. Summarising the results of the research, it is worth specifying promising directions for the development of mortgage financing using fintech products; in particular, the following should be highlighted: the use of fintech tools for the specific distribution of roles in the process of preparing and providing mortgage financing services; determining the cost and risks of mortgage lending with modelling loan repayment scenarios; and improving the efficiency of the mortgage financing service itself. The issue of using fintech tools in the field of investment financing is considered in sufficient detail in the literature, which was illustrated in the study; however, even in the conditions of such significant attention to the chosen topic, there are still many debatable issues related to the specifics of using fintech tools in various economic spheres. The fact that it has become easier for customers and suppliers to access information and move funds has contributed to the unbundling of financial services: specialised suppliers offer only one product, and customers can choose a whole group of suppliers, satisfying their needs.

S. Oneshko & L. Pashchuk (2021) and A. Martin *et al*. (2022) suggest that instead of using such products as deposit, payment, and credit offered by one institution, a customer can keep deposits in one institution (or several institutions), search for a better credit offer, and use different payment service providers for various purposes. Therefore, customers can collect sets of services themselves and combine them into packages in the form of programme icons on the smartphone screen. It is definitely worth agreeing with this point of view, as it is very important for a modern consumer of financial services to be able to make decisions quickly and choose the set of services that the client needs. R. Jarvis & H. Han (2021) emphasise that it is fundamentally important that similar advances in computing power, data, and communication enable service providers, lacking comprehensive financial relationships with customers (which banks used to have), to offer unified solutions and new packages of financial services or to rearrange financial services, combining them with other types of entrepreneurial or commercial activities. Whereas, L. Kolinets (2023) emphasises that the issue of attracting fintech tools should not be solely restricted to the business sphere, as they can be used by private clients as well.

Thus, fintech operates both at the B2B level (business to business) and at the B2C level (business to customers). It is also worth agreeing with this opinion, as in fact nowadays fintech is becoming a rather versatile set of tools that can be used in different areas and for different users. In response to the development of fintech tools, modern financial services are fragmented, unbundled, and restructured. Therefore, fintech tools are fundamentally changing business models and product economics, as well as the operating conditions of financial service providers. To gain remote access to an account, an account holder can choose a third-party application, thereby actually separating the institution where the account resides from the end product and user interface, and in many ways from the creation of consumer value. And in this context, it is worth mentioning T. Beck (2020) opinion, according to which modern financial services must adapt to the needs of customers and take into account their query in a certain specific situation.

In scientific periodicals, researchers Y. Chen & C. Bellavitis (2020) also pay attention to trends influencing the entire economy – for example, a wider use of software application interfaces in technological architecture and the spread of multilateral platforms in e-commerce, logistics, and other sectors facilitate the exchange of information and reconfiguration of financial services embedded in non-financial products and business processes. The use of variable and on-demand infrastructure, the development of automation, remote channels, and even embedded business models contribute to the reduction in customer costs. At the same time, H. Vives (2019) points out that client-oriented providers of a new generation will take away part of the margin that previously belonged to banks, even if normative regulation still requires the bank's participation in providing a product. Therefore, a debatable question arises regarding the creation of prerequisites for the existence and development of intermediaries by fintech tools that can ensure the price increase of the final service.

And here it is difficult to agree with L. Kolinets (2023), who suggests paying more attention solely to the information component of financial services without explaining to clients the specifics and features of the financial service itself. In particular, X. Cai *et al*. (2022) pointed out that one of the most promising directions for the development of the mortgage lending market is the increase in competition in this area. The market is represented by several large player banks, which limits borrowers' options. However, it should be emphasised that with the appearance of new players on the market, the conditions for providing mortgage loans are expected to improve and interest rates are expected to go down. Undoubtedly, the state plays a key role in solving these problems and developing promising directions. The state plays an active role in creating conditions for the development of mortgage credit as well as in assisting the population in home purchases. Correspondingly, it can be assumed that one of the main tasks of the state in the field of mortgage lending is the creation of a favourable legal and economic environment for banks and borrowers' operation, as well as the encouragement of financial institutions to use the latest digital technologies to optimise the field of mortgage lending.

As A. Fuster *et al*. (2019) point out, the high cost of housing loans is another problem related to the development and regulation of the mortgage market. It should be emphasised that interest rates on mortgage loans are significantly higher in Ukraine than in other developed countries. This is due to a number of factors, including high inflation, economic instability, and a lack of competition in the market. The active implementation of digital technologies can significantly improve the situation with mortgage loan costs since the implementation of digital technologies makes it possible to reduce the costs of paying specialists involved in granting loans.

The main goal of the research was to outline promising directions for using fintech products for the development of mortgage financing. At the same time, the main attention was paid to the possibilities of improving the mortgage financing system and simplifying procedures for allocating funds using fintech products, while the main emphasis was placed on the possibilities of improving the mortgage financing system using various fintech tools. When conducting the research, the main attention was focused on the specifics and effectiveness of the introduction of fintech products into the mortgage financing system and the creation of prerequisites for processing information and making optimal and balanced financial decisions. In the research process, special attention was paid to the development of a technical task for using fintech tools to determine the possibilities of mortgage financing.

CONCLUSIONS

The conducted research made it possible to discover that digital transformation provides for the creation of a new infrastructure – for example, the use of fintech tools for the development of the mortgage lending system requires a clear definition of tasks and an understanding of the benefits that both financial institutions and consumers of financial services can receive from the implementation of fintech tools. The analysis of statistical material allows us to conclude that the development of mortgage lending and the boom of the fintech market are taking place in parallel in the modern financial sphere. It is difficult to imagine world financial markets without a targeted approach to consumers of financial services, which also becomes a driver of fintech tools development in the field of mortgage financing. The field of mortgage financing is no exception, as it can significantly benefit from the use of AI or the latest generation of internet banking. The creation of financial infrastructure is no longer an exclusive prerogative of the central bank, operators of traditional payment systems, and authorised credit bureaus or property registries. In countries with a developed market, improved communication between banking systems has made it possible to increase the speed of payments and financial decision-making.

In the process of research, the model of "Using fintech tools to identify mortgage financing opportunities" has been developed, which makes it possible to generalise the possibilities of using fintech to determine the conditions for the integration of fintech product developers into the system of financial decision-making and ensuring the operation of the mortgage financing system. As a result of the research, the general functioning model of the module "Using fintech tools to identify mortgage financing opportunities" has been created, giving a possibility to clearly define the roles of each individual specialist in a company, providing fintech services to facilitate the mortgage financing market, which positively affects the development process and competitiveness of the mortgage financing sector itself.

It is also worth mentioning the significant opportunities provided by the use of fintech products in ensuring the development of mortgage financing. And in this context, the importance of the dual use of fintech tools for the specific distribution of roles in the process of preparing and providing mortgage financing services has been emphasised. The possibility of determining the cost and risks of mortgage lending with the modelling of loan repayment scenarios should be specifically emphasised, as well as the general efficiency improvement of the mortgage financing service itself due to the right distribution of roles and risk reduction. The issues of discovering a universal method of assessing a borrower's solvency and identifying directions for banking institutions protection against the loss of funds resulting from unreliable developers can become a prospect of further scientific research in the field of mortgage lending development. The issue of assessing creditworthiness attracts the attention of many scientists, though the realities of the time impose their requirements for updating approaches to assessing borrowers' ability to repay the obtained mortgage resources in the future.

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CONFLICT OF INTEREST

None.

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Узагальнення напрямів використання фінтех продуктів у сфері розвитку фінансового сектора, зокрема іпотечного фінансування

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Анотація. Іпотечне кредитування стало найважливішою ланкою фінансового ринку. Найпоширеніше використання іпотеки – це купівля фізичною особою квартири чи приватного будинку в кредит. З огляду на важливість обраної теми, мета дослідження визначена наступним чином: встановити перспективні напрямки розвитку іпотечного фінансування із використанням фінтех продуктів. Конкретизовано перелік фінтех продуктів, які можуть бути використані у сфері іпотечного фінансування для збагачення системи управління процесом надання іпотечного кредиту зі застосуванням методів узагальнення та систематизації. Встановлено, що здійснення процесу іпотечного кредитування передбачає аналіз ризиків позичальника, а також більш складні процедури визначення оптимальних відсоткових ставок для іпотечного кредитування. Коли взято за основу аналіз облікових ставок, є необхідність аналізувати волатильність ринку. Цих результатів досягнуто з використанням методів аналізу та систематизації. Для полегшення роботи над аналізом даних у розвитку системи іпотечного кредитування дедалі частіше використовують фінтех інструменти, що збагачують інструментарій забезпечення безпеки процесу іпотечного фінансування на рівні фінансових установ та на рівні державного регулювання. Визначено специфіку застосування фінтех інструментів. Також встановлено основні тенденції та ризики розвитку сучасного іпотечного фінансування із використанням методу конкретизації. Визначено можливості застосування фінтех інструментів у сфері іпотечного фінансування, зокрема сформовано підхід до створення техзавдання використання фінтех інструментів для подальшого розвитку іпотечного фінансування. Авторський підхід буде корисним на практиці як фінансовим установам, що здійснюють іпотечне фінансування, так і регуляторам іпотечного ринку для мінімізації ризиків у системі надання іпотечних кредитів

Ключові слова: відсоткові ставки; ризик; дефолт; волатильність; брокер