IRSTI 06.73.75 **https://doi.org/10.58805/kazutb.v.2.31-1639**

ANALYSIS OF THE CURRENT STATE AND DEVELOPMENT TRENDS OF DIGITAL MORTGAGE LENDING IN KAZAKHSTAN

[1]A.Sh. Abdeshova, [1]A.G. Tyumambaeva✉, [2]A.S. Duskaliyev

[1]Zhangir Khan West Kazakhstan Agrarian and Technical University , Uralsk, Kazakhstan,
[2]Narxoz University, Almaty, Kazakhstan

✉ *Corresponding author: Aislu.GT@mail.ru*

Digital mortgage lending, including the use of remote banking services, is gaining momentum in the Kazakhstani market, accompanied by an increase in the number of mortgage loans issued. This paper examines the process of digital transformation in mortgage lending, focusing on the current benefits of digitalization in this sector. To analyze the key aspects and relevance of the topic, the author employs methods of statistical data processing related to the mortgage market, mathematical calculations, analysis of commercial banks' annual reports, visual methods of information presentation, comparative analysis, and systematization of information.The study identifies factors contributing to rising housing prices and analyzes mortgage loans issued to individuals by second-tier Kazakhstani banks between 2015 and 2025, taking into account currency, region, type of mortgage program, and the composition of the mortgage portfolio. The study also analyzed key indicators of Otbasy Bank JSC, a leading player in the retail mortgage lending market, with the activity of its deposit portfolio assessed using internet banking and video banking services.A comparison was conducted between the potential of the "Digital Mortgage" pilot project and the volume of mortgage loans issued by commercial banks participating in the program.

The analysis revealed that the leading lenders under this project were Freedom Bank Kazakhstan JSC, BankCenterCredit JSC, and Narodny Bank of Kazakhstan JSC. Key factors hindering the development of the digital mortgage market were identified, and recommendations for overcoming them were formulated.

Particular attention was paid to one of the most significant threats to individuals in the era of digitalization-fraud-and the possibility of using the "Stop-Credit" service to protect customers was also considered. The implementation of the proposed measures has the potential to significantly accelerate the mortgage loan application process using digital technologies for all market participants.

Key words: mortgage, digital transformation, loan, housing program, commercial bank, interest rate.

АНАЛИЗ СОВРЕМЕННОГО СОСТОЯНИЯ И ТЕНДЕНЦИЙ РАЗВИТИЯ ЦИФРОВОГО ИПОТЕЧНОГО КРЕДИТОВАНИЯ В КАЗАХСТАНЕ

[1]А.Ш. Абдешова, [1]А.Г. Тюмамбаева✉, [2]А.С. Дускалиев

[1]Западно-Казахстанский аграрно-технический университет им. Жангир хана, Уральск, Казахстан,
[2]Университет Нархоз, Алматы, Казахстан,
e-mail: Aislu.GT@mail.ru

Цифровое ипотечное кредитование, включая использование дистанционных банковских сервисов, набирает обороты на рынке Казахстана, что сопровождается ростом числа выданных ипотечных займов. В работе раскрывается процесс цифровой трансформации ипотечного кредитования, акцентируя внимание на текущих преимуществах цифровизации в данной сфере. Для анализа ключевых аспектов и актуальности темы применены методы статистической обработки данных, касающихся ипотечного рынка, математические расчёты, анализ годовых отчётов коммерческих банков, визуальные методы представления информации, сравнительный анализ и систематизация информации. Представлены факторы, способствующие росту цен на жильё, а также проведено исследование ипотечных кредитов, выданных населению казахстанскими банками второго уровня в период с 2015 по 2025 год, с учётом валюты, региона, типа ипотечной программы и состава ипотечного

портфеля. В ходе исследования также были проанализированы ключевые показатели АО «Отбасы Банк», являющегося ведущим игроком на рынке ипотечного кредитования населения, при этом активность его депозитного портфеля оценивалась с использованием сервисов интернет-банкинга и видеобанкинга. Проведено сравнение потенциала пилотного проекта «Цифровая ипотека» с объемами выдачи ипотечных займов коммерческими банками, вовлеченными в эту программу.

Результаты анализа показали, что основными лидерами по кредитованию в рамках данного проекта стали АО «Фридом Банк Казахстан», АО «БанкЦентрКредит» и АО «Народный Банк Казахстана». Выявлены ключевые факторы, сдерживающие развитие цифрового ипотечного рынка, и сформулированы рекомендации по их преодолению.

Особое внимание уделено одной из наиболее значимых угроз для физических лиц в эпоху цифровизации - мошенничеству, а также рассмотрена возможность применения сервиса «Стоп-кредит» для защиты клиентов. Внедрение предложенных мер способно существенно ускорить процедуру оформления ипотечных кредитов с применением цифровых технологий для всех участников рынка.

Ключевые слова: ипотека, цифровая трансформация, кредит, жилищная программа, коммерческий банк, процентная ставка.

ҚАЗАҚСТАНДАҒЫ ЦИФРЛЫҚ ИПОТЕКАЛЫҚ НЕСИЕЛЕУДІҢ ҚАЗІРГІ ЖАҒДАЙЫ МЕН ДАМУ ТЕНДЕНЦИЯЛАРЫН ТАЛДАУ

[1]А.Ш. Абдешова, [1]А.Г. Тюмамбаева✉, [2]А.С. Дускалиев
[1]Жәңгір хан атындағы Батыс Қазақстан аграрлық-техникалық университеті, Орал, Қазақстан,
[2]Нархоз Университеті, Алматы, Қазақстан,
e-mail: Aislu.GT@mail.ru

Қазақстан нарығында цифрлық ипотекалық несиелендіру, оның ішінде қашықтан банктік қызметтерді пайдалану, берілген ипотекалық несиелер санының өсуімен қатар қарқын алуда. Бұл мақала осы сектордағы цифрландырудың қазіргі артықшылықтарын көрсете отырып, ипотекалық несиелеудің цифрлық трансформациясын зерттейді. Негізгі аспектілер мен тақырыптың өзектілігін талдау үшін ипотекалық несие нарығының деректерін өңдеудің статистикалық әдістері, математикалық есептеулер, коммерциялық банктердің жылдық есептерін талдау, ақпаратты ұсынудың көрнекі әдістері, салыстырмалы талдау, ақпаратты жүйелеу қолданылды.Тұрғын үй бағасының өсуіне ықпал ететін факторлар ұсынылып, валютаны, аймақты, ипотекалық бағдарламаның түрін және ипотекалық портфель құрамын ескере отырып, 2015-2025 жылдар аралығында екінші деңгейлі қазақстандық банктердің жеке тұлғаларға берген ипотекалық несиелеріне зерттеу жүргізілді. Сондай-ақ, зерттеу барысында ипотекалық тұрғын үйді несиелендіру нарығының жетекші ойыншысы болып табылатын «Отбасы Банкі» АҚ-ның депозиттік портфелінің өнімділігі онлайн және бейне банкинг қызметтері арқылы бағаланған негізгі көрсеткіштеріне талдау жасалды.«Цифрлық ипотека» пилоттық жобасының әлеуеті мен бағдарламаға тартылған коммерциялық банктер беретін ипотекалық несиелер көлемі арасында салыстыру жүргізілді.

Талдау көрсеткендей, «Фридом Банк Қазақстан» АҚ, «БанкЦентрКредит» АҚ және «Қазақстан Халық Банкі» АҚ осы жоба бойынша несие берудің негізгі көшбасшылары болып табылады. Цифрлық ипотека нарығының дамуын тежейтін негізгі факторлар анықталып, оларды еңсеру бойынша ұсыныстар тұжырымдалды.

Цифрлық дәуірдегі жеке тұлғаларға төнетін ең маңызды қатерлердің бірі - алаяқтыққа ерекше назар аударылады және клиенттерді қорғау үшін «Stop-Credit» қызметін пайдалану мүмкіндігі талқыланады. Осы ұсынылған шараларды жүзеге асыру нарықтың барлық қатысушылары үшін цифрлық технологияларды пайдалана отырып, ипотекалық несиеге өтініш беру процесін айтарлықтай жеделдете алады.

Түйін сөздер: ипотека, цифрлық трансформация, несие, тұрғын үй бағдарламасы, коммерциялық банк, пайыздық мөлшерлеме.

Introduction. The development of the digital economy is closely linked to the creation of business models and new products and services based on digital technologies within financial institutions. This enables the creation of a universal digital environment for interaction and communication among financial institutions, customers, government agencies, and organizations [1].

Currently, access to housing is most often achieved through mortgage lending. Mortgage is not a modern term. It first appeared in Ancient Greece in the early 6th century BCE [2].

Mortgage lending is a long-term loan provided by financial institutions for the purchase of a home, which serves as collateral.

In general, regardless of the type of loan, the process of obtaining it takes a long time: gathering documents, endless lines at bank branches, document verification, and other tasks. However, the development of digital technologies in the modern financial sector is leading to fundamental changes in the lending process [3].

Digital transformation in mortgage lending represents a dynamic shift in the lending process for both commercial banks and borrowers when providing housing to the public.

The rapid development of digital transformation has led to increased competition in the country's banking sector, and digitalization is becoming an integral part of commercial banks' strategies. In the Republic of Kazakhstan, approximately 80% of the population actively uses the internet, which is an important step toward expanding access to banking services.

Digital mortgage loans allow borrowers to apply online, undergo electronic verification, and receive a quick loan decision, which can significantly simplify the lending process through digital platforms [4].

The adoption of digital technologies not only saves time but also plays a key role in enhancing banks' competitiveness. In addition, digitalization enables second-tier banks to collect and analyze large volumes of customer data.

In recent years, the government has offered various programs and incentives related to mortgage lending. However, it is worth noting that due to low wages and the low social status of socially vulnerable groups, citizens of Kazakhstan are unable to secure housing for themselves [5].

It is also worth noting the low level of financial literacy among the population. After all, in the context of digital transformation, it is extremely important to approach financial documents and the lending process with a high degree of responsibility.

The relevance of this research lies in improving access to housing for citizens, including young people and vulnerable groups, through digital transformation in mortgage lending.

The objective of this research is to identify and examine, through analysis, the challenges associated with mortgage lending to the population in the Republic of Kazakhstan in the context of digital transformation, as well as to determine avenues for the effective use of digital technologies to ensure access to housing.

The scientific novelty of the study lies in a comprehensive assessment of the current state of digital mortgage lending in Kazakhstan based on an analysis of mortgage portfolio dynamics, regional market development characteristics, and the increased accessibility of mortgage products through the use of digital technologies.

The subject of this study is the annual reports of second-tier banks engaged in mortgage lending in the Republic of Kazakhstan.

Kazakh authors frequently address topics such as the accessibility of mortgage lending, the state of the mortgage lending market, and its effectiveness [5]. This article examines the application of mortgage lending in the context of digitalization, the advantages of using digital technologies in mortgage lending, and the

challenges associated with its implementation, demonstrating its importance and relevance to the country's socioeconomic policy. Thus, the article highlights the specific nature of the topic under consideration in the development of an effective banking system.

Many international authors conduct research in the field of real estate, examining in their works the importance of mortgage lending in the context of digitalization and the factors influencing it through comparative analysis [6].

In reviewing the works of foreign authors, we will focus on the important aspects of digitalization regarding mortgage lending as presented in their studies.

In their work, L.A. Petrova and T.E. Kuznetsova noted that banks are developing new digital products to attract and retain new customers. For example, the launch of a mortgage brokerage service that allows customers to obtain loans online and significantly reduces the number of visits to the bank. In addition, digital mortgage lending systems reduce the time required to complete transactions, are available around the clock, ensure the convenience of using credit services, have a unified database within the ecosystem, and much more [7].

In the FinTex mortgage lending system, decisions are made more consistently when applicants appear more trustworthy, when banks are larger or specialize in mortgage lending, and when banks have more experience operating in the online environment. Thus, B. Christof and O. Steven demonstrated in their study of mortgage lending that extensive experience in the online environment helps reduce transaction costs [8].

Researcher Lee emphasizes that the implementation of digital services, machine learning algorithms, and artificial intelligence helps make credit products more accessible to customers and significantly reduces application processing times. At the same time, the researcher emphasizes the importance of refining the regulatory framework regarding personal data protection and ensuring the transparency of algorithms [9].

A study by Romero L. K. (2024) demonstrates that the introduction of digital mortgage services and the growth of fintech lending are fostering a competitive environment in the housing finance market. This, in turn, expands citizens' access to mortgages, particularly for residents of areas where traditional banks have a limited presence [10].

The modern mortgage market is focused on providing alternative financial models that utilize digital services to address the long-standing issue of housing affordability. It offers easy access to mortgages through blockchain and cryptocurrency systems. It applies principles of behavioral economics to enhance the efficiency of mortgage lending through a gamification-based management system and by improving financial literacy.

Drawing on international and national research, this article presents a development perspective that integrates aspects of financial and social policy, identifying issues related to innovations in digital banking that served as the inspiration for this study.

Materials and Methods. The following scientific analysis methods were used in the preparation of this study:

- the economic-statistical method was used to analyze mortgage lending indicators in Kazakhstan based on the annual reports of the National Bank of the Republic of Kazakhstan, the Agency for the Regulation and Development of the Financial Market, and second-tier banks. Tables and charts on mortgage lending were used for statistical analysis.

- a comparative method was used to identify trends in the development of digital mortgage lending in foreign countries and in Kazakhstan;

- a systems approach allowed us to view digital mortgages as a complex system of interaction between the state, banks, and developers;

- when formulating conclusions and recommendations for improving digital mortgage lending in Kazakhstan, taking into account the international experience of leading countries where the transition has occurred from partial process automation to fully seamless online transactions, the method of generalization and logical analysis was used.

Results and Discussion. Providing housing for the population is one of the key areas for improving living conditions. Several factors influence housing prices in the market.

Figure 1 shows the growth trend in housing construction volume in the Republic of Kazakhstan for the period 2016–2025. Despite the adoption of a number of measures to provide citizens with housing, housing affordability remains low. The total housing stock by 2025 will amount to 114.3 million square meters, and the per capita housing provision ratio will be 25.1 square meters.

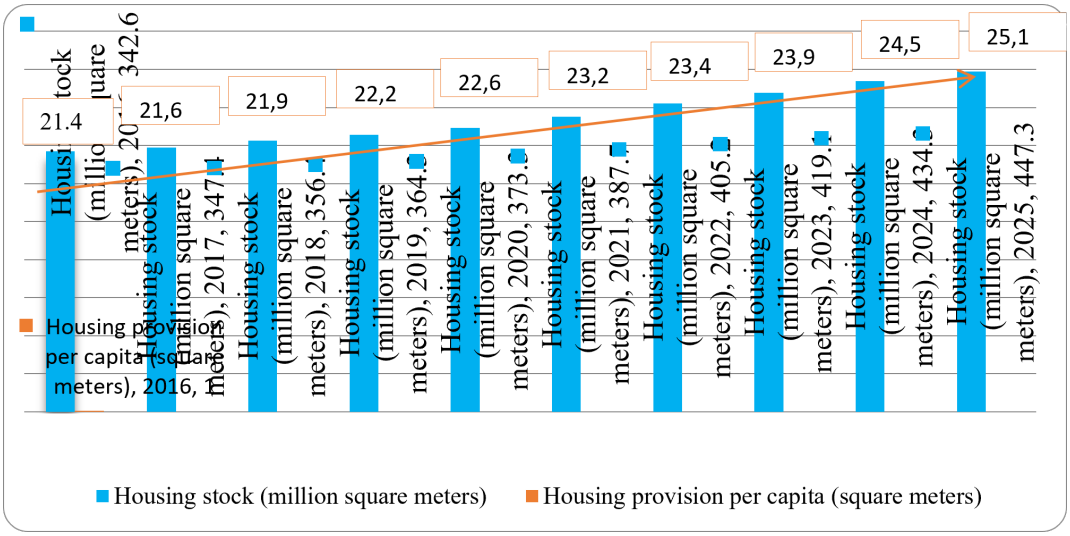


Fig.1 - Total Housing Stock and Housing Provision in the Republic of Kazakhstan
Note: the table was complited by the authors based on source [11]

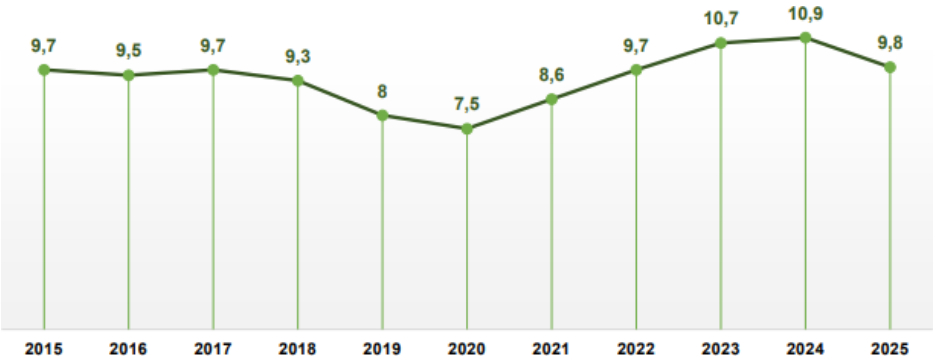


Fig.2 - Average interest rate on loans for housing construction and purchase, %
Note: the table was complited by the authors based on source [15]

This is below the United Nations' requirements for total living space (30 square meters per person). Despite annual growth, housing provision remains low. To improve this indicator, the government needs to increase the volume of housing construction [12,13].

Another factor contributing to rising housing prices is the annual increase in the cost of construction materials. According to the National Bureau of Statistics, since the beginning of 2025, the tenge has depreciated by more than 20% against the Russian ruble. This means that for Kazakhstani buyers, the price in Russian rubles has not changed, but Russian materials have become more expensive. At the same time, experts warn that rising prices for

construction materials could affect the real estate market, and stricter requirements for developers could also lead to higher housing costs [14].

Housing price increases also depend on factors such as the property's location, housing project, size, design, and proximity to schools and kindergartens.

The issue of providing government assistance to ensure access to housing for low-income and socially vulnerable groups requires extensive research; in this paper, we would like to focus on the accessibility of mortgage lending using digital technologies.

Housing provision for the population of the Republic of Kazakhstan is largely carried out through mortgage lending

As shown in Figure 2, the average interest rate on outstanding loans has been declining since 2018; however, it rose in 2021 (2.3%), in 2024 (10.9%), and then fell slightly by the end of 2025 (9.8%). This can be explained by a reduction in the number of subsidized mortgage programs on the market.

Table 1 - Total Mortgage Portfolio of the Republic of Kazakhstan

Years	Kazakhstan's mortgage portfolio, in billions of dollars	Kazakhstan's mortgage portfolio, excluding Otbasy Bank JSC, in billions of tenge	Growth of Kazakhstan's mortgage portfolio, %	Growth of Kazakhstan's mortgage portfolio, excluding Otbasy Bank JSC, %
2021	3 383	1 299	39	21
2022	4 703	1 735	39	34
2023	5 348	2 146	14	24
2024	6 106	2 608	14	22
2025	6 952	2 902	14	11
Note: the table was complited by the authors based on source [15]				

The total mortgage portfolio of the Republic of Kazakhstan increased by 14 percent compared to 2024, while the mortgage portfolio of second-tier banks, excluding Otbasy Bank, amounted to 11 percent (2,604 tenge – 2024). This decline is linked to the base rate, which was set at 18 percent in October 2025. The share of the mortgage portfolio in GDP in 2025 was 4 percent. The volume of the mortgage portfolio of commercial banks as of January 1, 2026, amounted to 6,952 billion tenge, including 6,950.5 billion tenge in the national currency (99.9%) and 1 billion tenge in foreign currency (0.1%). We see that the majority of mortgage loans were issued in the national currency, which may also be linked to the rising exchange rate of the U.S. dollar.

The volume of mortgage loans issued across all regions of the country increased by 14 percent. Among the regions, the largest share of mortgage loans is observed in the Ulytau and Zhetysu regions. This is explained by the fact that the Ulytau and Zhetysu regions are separate regions, and despite the small volume of loans issued, growth rates are quite high. In the total mortgage portfolio, the largest share among second-tier banks belongs to Astana and Almaty, accounting for 55%, which can be explained by the high concentration of the population, especially young people, in these megacities.

Not all commercial banks in the Kazakhstani mortgage market offer home loans. For example, only certain banks can offer the «7-20-25» program. The operator of the «7-20-25» program is JSC «Kazakhstan Stability Fund». This program is an

effective mortgage program with a low interest rate of 7% (APR – 7.2%). The down payment is set at 20% of the property value, but there is a fixed amount for each region.

Table 2 - Volume of mortgage loans issued by region

Regions of Kazakhstan	2024ж		2025ж		increase, %
	billion tenge	share, %	billion tenge	share, %	
Across Kazakhstan - total	**6 064**	**100**	**6 952**	**100**	**15**
Abai	111	2	128	2	15
Akmola	162	3	166	2	2
Aqtube	256	4	281	4	9
Almaty	110	2	120	2	9
Atyrau	146	2	159	2	9
East Kazakhstan	195	3	214	3	10
Jambyl	124	2	141	2	14
Jetisu	49	1	68	1	38
West Kazakhstan	163	3	188	3	15
Karaganda	381	6	396	6	4
Kostanay	182	3	197	3	8
Kyzylorda	83	1	99	1	19
Mangystau	168	3	186	3	11
Pavlodar	181	3	201	3	11
North Kazakhstan	82	1	90	1	10
Turkestan	57	1	61	1	8
Ulytau	13	0	21	0	64
Almaty	1 504	25	1 821	26	21
Astana	1 764	29	2 026	29	15
Shymkent	333	5	390	6	17
Note: the table was complited by the authors based on source [15]					

The partner banks of the 7-20-25 program include the following:

- JSC «Bank CenterCredit»;
- JSC «Halyk Bank of Kazakhstan»;
- JSC «Eurasian Bank»;
- JSC «Freedom Bank of Kazakhstan»;
- JSC «Bank RBK»;
- JSC «Forte Bank»;
- JSC «Altyn Bank» [16].

Among these banks, Freedom Bank of Kazakhstan JSC holds the largest share of mortgage loans under the 7-20-25 program - 1,878 loans (34.7 billion tenge); JSC «Bank CenterCredit» - 2,066 loans (36.2 billion tenge); and JSC «Halyk Bank of Kazakhsta» - 1,004 loans (1.2 billion tenge).

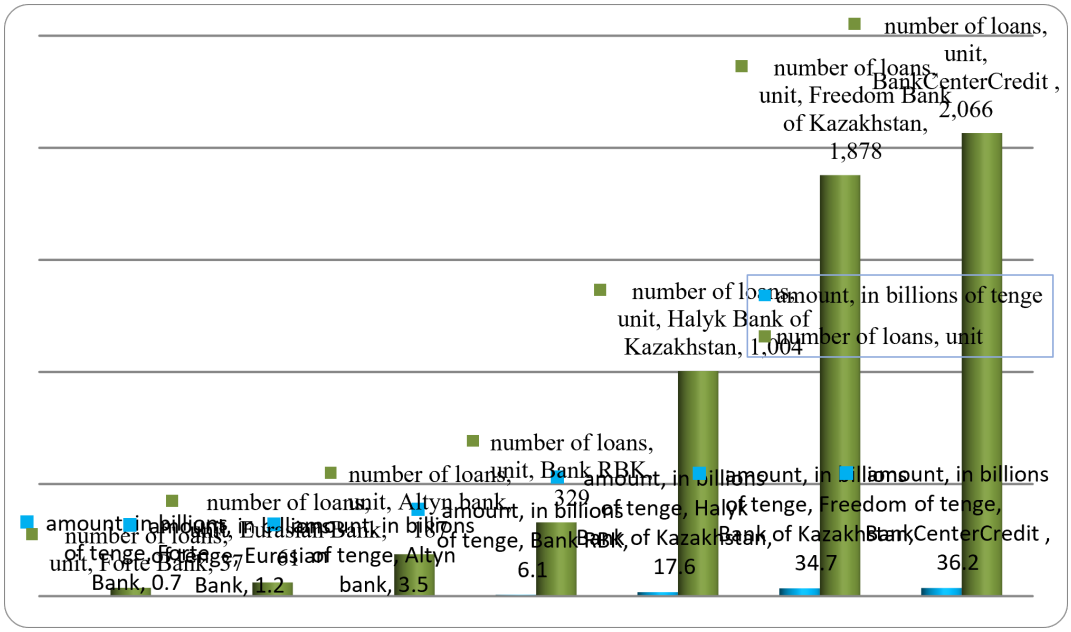


Fig.3 - Leaders of the "7-20-25" program by region

Note: the table was complited by the authors based on source [15]

In addition, Otbasy Bank JSC holds a significant market position, offering preferential loans with low interest rates.

Among second-tier banks, Otbasy Bank JSC is the market leader in mortgage lending, accounting for 55 percent of the total volume of loans for housing construction and purchase. However, the bank also has shortcomings in mortgage lending compared to other commercial banks, including low household purchasing power, restrictions on products and operations, an imperfect legislative framework related to these restrictions, and insufficient flexibility in the quasi-public sector (Figure 4).

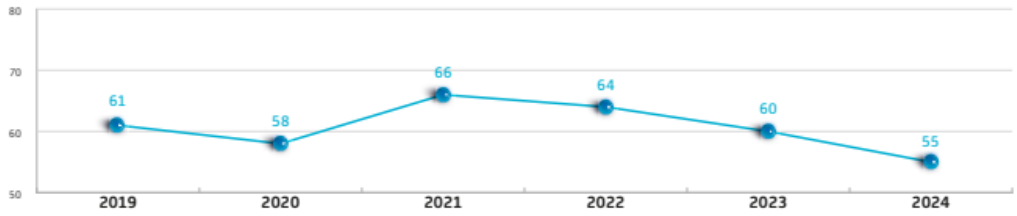


Fig.4 - Volume of loans issued by Otbasy Bank JSC for housing construction and purchase

Note: the table was complited by the authors based on source [17]

In accordance with the Concept for the Development of Housing and Utilities Infrastructure of Otbasy Bank JSC for 2023–2029, the bank is making full use of digital technologies to achieve its strategic goals of transitioning business processes and business models to a digital platform. To build new expertise within the context of the Information Technology Development Strategy for 2024–2026, Otbasy Bank is working on the development and implementation of innovative products, leveraging the ongoing transformation in the mortgage market. This Information Technology Development Strategy defines the key priorities for the development of innovative technologies and is aimed at creating conditions for the development of digital channels, as well as for the development

of the mortgage lending market. Otbasy Bank has been offering a video banking service since 2020. This helps the bank's customers apply for mortgage loans remotely and minimize visits to bank branches; specifically, in 2024, 5,244 loan applications totaling 120 billion tenge were processed. Video calls and audio services help customers save time and access post-deposit services remotely.

As shown in Figure 5, Otbasy Bank is performing well in terms of deposit portfolios generated through online and video banking.

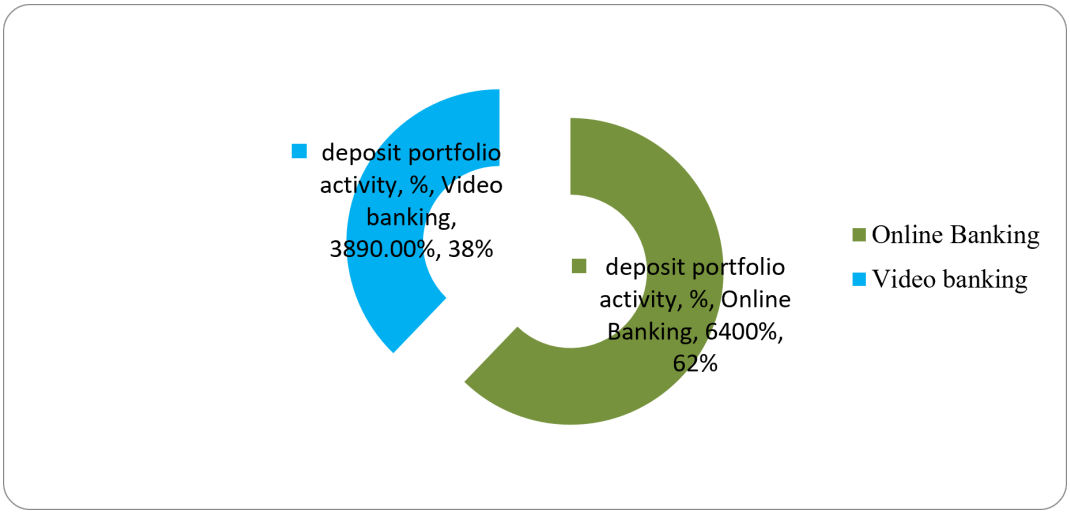


Fig.5 - Activity of the deposit portfolio of Otbasy Bank JSC in 2024, %
Note: the table was complited by the authors based on source [17]

The share of transactions related to remote banking services will reach 42% in 2023 and 53% in 2024. The bank is successfully implementing various online programs to increase digitalization and improve customer service. The bank is working to improve the efficiency of digital business processes, digitize products and services, implement artificial intelligence and automation, and enhance the skills and professional development of employees in the field of information technology to create a dynamic digital bank with an optimized structure of digital business processes.

In light of the implementation of the Address by the President of the Republic of Kazakhstan, K. Tokayev, on the development of artificial intelligence (AI), Otbasy Bank conducted four pilot projects comparing the world's 11 leading AI models [18]:

1. OpenAI: ChatGPT 3.5, ChatGPT 4, ChatGPT 4 omni, ChatGPT 4 omni-mini.

2. Amazon Web Services (AWS): Claude 3.5 Sonnet, Claude 3.5 Haiku, Nova.

3. Google: Gemini 1, Gemini 1.5, Gemini 2.

4. Meta: Llama.

As a result of the analysis, a new chatbot, Quanysh-AI, was developed. In addition, in 2024, AWS acquired a new chat platform and a voice platform with AI integration, and a desktop application was developed. The implementation of artificial intelligence and the use of digital platforms not only improve customer service but also enhance the quality and accessibility of financial services.

The development of digital technologies also has a dangerous downside. In this regard, to protect against fraud, the bank established a fraud prevention department designed to safeguard the legitimate interests of the bank and its customers.

A pilot project called "Digital Mortgage" has been launched in the Republic of Kazakhstan, designed to simplify online notarial transactions for

the purchase and sale of real estate related to the registration of housing on the secondary market. To do this, citizens select the «Digital Mortgage» option on the bank's website or in the bank's mobile app and enter the home's value, down payment, and loan term. After entering the data, the required monthly payment is automatically calculated and displayed on the screen. The applicant enters their personal data and confirms it via SMS [19].

The terms, procedure, and algorithm for online registration of real estate purchase and sale transactions under the «Digital Mortgage» program are governed by the Decree of the Republic of Kazakhstan dated 2025 on the implementation of a pilot project for the online registration of notarized real estate purchase and sale transactions (second-class housing) as part of the «Digital Mortgage» [20].

To assess the level of digital technology development in Kazakhstan's mortgage lending sector and identify promising areas for the development of digital mortgages based on successful international practices, we will conduct a comparative analysis.

Table 3 - A Comparative Analysis of the Digitalization of Mortgage Lending in Other Countries and Kazakhstan

Criterion	Kazakhstan	Foreign countries (the United States, the United Kingdom, Singapore, Estonia)
Submittingan application	Available online via banking platforms and government services	A fully digital format with automated application processing
Customer Identification	Electronic digital signatures, biometrics, and government databases are used	Widespread use of digital identifiers, biometrics, and remote verification technologies
Borrower Assessment	Automated scoring is used to a limited extent and is often supplemented by manual review	Active use of artificial intelligence and big data for creditworthiness assessment
Real Estate Registration and Mortgages	Available in electronic format through government information systems	In some countries, the registration of property rights and mortgage liens is fully digital
Mortgage Processing Speed	From a few days to a few weeks	From a few minutes to a few days
Legal Framework	Continues to improve with the integration of digital technologies	More mature regulation of electronic transactions and digital financial services
Level of Digital Maturity	Moderate level of digitalization	A high level of digitalization in the financial sector
Note: the table was complited by the authors based on source [21-25]		

Experience from other countries shows that the most successful models are those based on the close integration of banking systems with government digital platforms. For example, in Singapore and Estonia, thanks to their advanced digital infrastructure, citizens can complete most stages of the mortgage application process remotely without having to visit government offices or bank branches. In the U.S. and the U.K., artificial intelligence, automated scoring, and electronic

document management technologies are actively used, which significantly speeds up the credit decision-making process.

Kazakhstan is demonstrating significant progress in the digitalization of the mortgage market thanks to the development of e-government, the use of electronic digital signatures, biometric identification, and the integration of government databases with the banking sector.

A comparative analysis shows that Kazakhstan is in the active development phase of digital mortgages and generally follows global trends. At the same time, international experience indicates the need to further improve digital infrastructure, expand the use of artificial intelligence and automated services, enhance data protection, and develop legal regulations.

One of the pressing issues in the development of digital technologies is the rise of online fraud.

Although digital financial services are evolving faster and becoming more convenient than ever before, the risks are also increasing. These include the theft of personal data by fraudsters, the use of phishing websites and social engineering tactics, as well as the issuance of loans in citizens' names without their consent. Often, citizens only learn about these loans from debt notices or after being contacted by debt collectors. This creates enormous financial and psychological problems for people. To protect against such risks, the «Stop Credit» government service was introduced in Kazakhstan. This service allows citizens to voluntarily restrict the ability to issue loans in their name [26].

Citizens should familiarize themselves with the capabilities of the «Stop-Credit» service and know how to use it in their daily lives. It is essential to regularly attend seminars conducted by the Department of Economic Investigations and the Financial Monitoring Agency of the Republic of Kazakhstan to ensure protection against fraud. Additionally, every citizen should take steps to improve their financial literacy.

Conclusions. Digitalization requires significant investment for continuous development and infrastructure building. It demands constant improvement to keep pace with changing times. Based on the above, the key benefits of digital products for mortgage lending can be summarized as follows:

1. Bankscosts are reduced, customer service quality improves, and the mortgage application process becomes simpler and faster for customers.

2. Thanks to the reduction in the number of intermediaries, the costs of mortgage lending services decrease, which, in turn, leads to lower mortgage interest rates.

3. Transparency in all transactions, especially when using blockchain technology, helps mitigate the risk of fraud.

4. Increased securitization of mortgage loans and credit resources.

The digitization of mortgage lending in Kazakhstan not only creates new opportunities to improve the accessibility and speed of obtaining home loans, but also entails a number of significant risks related to cybersecurity, technical failures, digital inequality, legal uncertainty, and a potential overheating of the real estate market. To minimize these threats, a comprehensive approach is needed, including strengthening the protection of personal data in information systems, improving digital infrastructure, developing the regulatory framework, increasing the population's digital and financial literacy, and continuously monitoring the state of the housing market.

Given the factors limiting the digitization of mortgage lending, the following measures can be proposed to address them:

1. To support the lending process, IT specialists with financial analyst skills must be trained.

2. Address issues related to obtaining an electronic digital signature (EDS). Not every citizen has access to a personal computer, and there are long lines at public service centers and software glitches; therefore, we propose that EDSs be obtained via smartphone.

3. Step up efforts to improve citizens' digital and financial literacy and conduct public awareness campaigns. To this end, organize and conduct

video tutorials and interactive courses tailored to different groups of citizens (youth, rural residents, large families, etc.) and lending programs, as well as language groups (Kazakh, Russian). To assess the effectiveness of these efforts, monitoring and analysis should be conducted (surveys, online chats, testing, etc.).

4. The simplified program should be targeted at citizens with special housing needs. Certain categories of citizens (military personnel, families with many children, low-income individuals, people with disabilities, etc.) are eligible for benefits; however, there are cases where they rent out the housing they have received. Restrictive measures must be put in place.

5. Housing prices should not be directly dependent on the growth of household incomes. The Government of the Republic of Kazakhstan must implement measures to reduce inflation, which drives up housing prices and erodes the purchasing power of money.

Citizens should not be skeptical about the use of digital technologies in mortgage lending in Kazakhstan. Although the use of digital technologies speeds up the mortgage lending process and makes it more convenient, it may not contribute to the expansion of banking services. Therefore, to develop the mortgage market, it is necessary not only to embrace digitalization but also to introduce high-quality service products; otherwise, there is a risk of a decline in the quality of customer service.

If the government is interested in ensuring adequate mortgage lending for certain segments of the population, there are various ways to do so without distorting market processes. One effective method is to reduce monthly mortgage payments by transferring monthly government subsidies directly to the borrower, or the government could reimburse the borrower for part of the down payment.

A comparative analysis of international practices has shown that in developed countries, digital technologies are integrated into virtually every stage of the mortgage lending process, including remote customer identification, automated creditworthiness assessment, electronic document management, and digital registration of real estate transactions.

Thus, the implementation of these measures will ensure the security, reliability, and sustainable development of digital mortgages, striking a balance between technological innovation and the protection of the interests of all market participants, while providing a new level of access to housing.

Литература

1. Концепция развития цифровой трансформации, информационно- коммуникационных технологий и кибербезопасности на 2023–2029 годы / Постановление Правительства Республики Казахстан.-2023. -№ 269.URL: https://adilet.zan.kz. -Дата обращения: 15.02.2026.

2. Steven L., Andrew P. The Effects of Mortgage Credit Availability: Evidence from Minimum Credit Score Lending Rules // American economic journal: Economic policy. -2022. - 14(1). -P.240-276. DOI 10.1257/pol.20180229.

3. Quillian L., Lee J.J., Honoré B. Racial Discrimination in the U.S. Housing and Mortgage Lending Markets: A Quantitative Review of Trends, 1976–2016 // Journal Race and Social Problems. -2020. -Vol.12(1). -P. 13-28. DOI 10.1007/s12552-019-09276-x.

4. Konasani I. Digital Transformation of Mortgage Lending: Emerging Frameworks for Fractional Ownership, Subscription Payments, and Embedded Finance // Journal of Information Systems Engineering & Management. -2026. -Vol.11(2s). -P.367-375. DOI 10.52783/jisem.v11i2s.14387.

5. Тазабеков К.А., Жамкеева М.К., Конырбеков М.Ж. Анализ и оценка доступности жилья в Республике Казахстан // Вестник университета «Туран». -2021. -Т.(3). -С.33-42. DOI 10.46914/1562-2959-2021-1-3-33-42.

6. Deininger K., Hilhorst Th., Nkurunziza E., Zevenbergen J. Benchmarking property institutions: conceptual background and evidence from 85 jurisdictions //World Development. -2026. -Vol.202:107354. DOI 10.1016/j.worlddev.2026.107354.

7. Петрова Л.А., Кузнецова Т.Е. Цифровизация банковской системы: цифровая трансформация среды и бизнес-процессов // Финансовый журнал. - 2020. -Т.12(3). - С.91-101. DOI 10.31107/2075-1990-2020-3-91-101.

8. Basten C., Ongena S. Mortgage lending through a fintech web platform. The roles of competition, diversification, and automation // Journal of Banking & Finance. -2024. -V.163:107194. DOI 10.1016/j.jbankfin.2024.10719.

9. Lee L. Enhancing Financial Inclusion and Regulatory Challenges: A Critical Analysis of Digital Banks and Alternative Lenders Through Digital Platforms, Machine Learning, and Large Language Models Integration. – 2024.- 17p. DOI 10.2139/ssrn.4799209

10. Romero C. L. Digital Disruption in U.S. Mortgage Markets: Fintech' s Local Impact on Access and Competition. - 2024. -37 p. DOI 10.2139/ssrn.4799209.

11. Ұлттық статистика бюросы. Тұрғынүйқорытуралы. - 2025. URL: https://stat.gov.kz. -Дата обращения: 02.02.2026.

12. Обеспеченность жильём, развитие социального и арендного рынка в РК и мире. – 2022. URL: https://ranking.kz. - Дата обращения: 5.02.2026.

13. Что ждет рынок недвижимости в 2022 году. -2022. URL: https://kapital.kz. -Дата обращения: 02.02.2026.

14. Айтжанбайқызы Г. Құрылыс материалдарының бағасы өсті / Егемен Қазақстан. -2025. URL: https://egemen.kz.-Дата обращения: 02.02.2026.

15. Рынок ипотечного кредитования Республики Казахстан за 2025 год. -2025. URL: https://khc.kz. -Дата обращения: 02.02.2026.

16. Пчелянская И. Ипотека «7-20-25»: как подать заявку. -2025. URL: https://krisha.kz. -Дата обращения: 08.02.2026.

17. Отбасы Банк. Финансовая и годовая отчетность. -2024. URL: https://hcsbk.kz. -Дата обращения: 08.02.2026.

18. О мерах по реализации Послания Главы Государства к народу Казахстана от 8 сентября 2025 года «Казахстан в эпоху искусственного интеллекта: актуальные проблемы и их решение посредством радикальных цифровых преобразований» / Указ Президента Республики Казахстан. -2025. -№1042. URL: https://adilet.zan.kz. - Дата обращения: 08.02.2026.

19. Мақаш А. Цифрлық ипотека іске қосылды / Егемен Қазақстан. -2025. URL: https://egemen.kz. -Дата обращения: 08.02.2026.

20. О реализации пилотного проекта по онлайн-регистрации нотариальных сделок купли-продажи недвижимости (жилья второго класса) в рамках проекта «Цифровая ипотека» / Совместный приказ Министра юстиции Республики Казахстан № 467 от 25 августа 2025 года и Министра цифрового развития, инноваций и аэрокосмической промышленности Республики Казахстан № 440/НН от 27 августа 2025 года. -2025. URL: https://adilet.zan.kz. - Дата обращения: 08.02.2026.

21. Государственные услуги и информация онлайн. Ипотечное кредитование сегодня https://egov.kz - Дата обращения: 08.02.2026.

22. eGovernment - Digital Land Register (KRIS)E-Land Register Estonia; https://interoperable-europe.ec.europa.eu Date of access: 08.02.2026.

23.HM Land Registry: Sign your mortgage deed. gov.uk https://www.gov.uk.- Date of access: 08.02.2026.

24. USBank. The benefits of eClosing on a home and how it works. https://www.usbank.com.- Date of access: 08.02.2026.

25. Monetary authority of Singapore https://www.mas.gov.sg.- Date of access: 08.02.2026.

26. «Стоп кредит»: как один цифровой инструмент защищает от мошеннических займов. -2025. URL: https://fingramota.kz/ru/news/post/stop-kredit-kak-odin-cifrovoj-instrument-zashchishchaet-ot-moshennicheskih-zajmov. - Дата обращения: 08.02.2026.

References

1. Koncepcija razvitija cifrovoj transformacii, informacionno- kommunikacionnyh tehnologij i kiberbezopasnosti na 2023–2029 gody / Postanovlenie Pravitel’ stva Respubliki Kazahstan.-2023. -№ 269.URL: https://adilet.zan.kz/kaz/docs/P2300000269. -Data obrashhenija: 15.02.2026. [in Russian]

2. Steven L., Andrew P. The Effects of Mortgage Credit Availability: Evidence from Minimum Credit Score Lending Rules // American economic journal: Economic policy. -2022. - 14(1). -P.240-276. DOI 10.1257/pol.20180229.

3. Quillian L., Lee J.J., Honoré B. Racial Discrimination in the U.S. Housing and Mortgage Lending Markets: A Quantitative Review of Trends, 1976–2016 // Journal Race and Social Problems. -2020. - Vol.12(1). -P. 13-28. DOI 10.1007/s12552-019-09276-x.

4. Konasani I. Digital Transformation of Mortgage Lending: Emerging Frameworks for Fractional Ownership, Subscription Payments, and Embedded Finance // Journal of Information Systems Engineering & Management. -2026. -Vol.11(2s). -P.367-375. DOI 10.52783/jisem.v11i2s.14387.

5. Tazabekov K.A., Zhamkeeva M.K., Konyrbekov M.Zh. Analiz i ocenka dostupnosti zhil’ ja v Respublike Kazahstan // Vestnik universiteta «Turan». -2021. -T.(3). -C.33-42. DOI 10.46914/1562-2959-2021-1-3-33-42.[in Russian]

6. Deininger K., Hilhorst Th., Nkurunziza E., Zevenbergen J. Benchmarking property institutions: conceptual background and evidence from 85 jurisdictions //World Development. -2026. -Vol.202:107354. DOI 10.1016/j.worlddev.2026.107354.

7. Petrova L.A., Kuznecova T.E. Cifrovizacija bankovskoj sistemy: cifrovaja transformacija sredy i biznes-processov // Finansovyj zhurnal. - 2020. -T.12(3). - S.91-101. DOI 10.31107/2075-1990-2020-3-91-101.[in Russian]

8. Basten C., Ongina S. Mortgage lending through a fintech web platform. The roles of competition, diversification, and automation // Journal of Banking & Finance. -2024. -V.163:107194. DOI 10.1016/j.jbankfin.2024.10719.

9. Lee L. Enhancing Financial Inclusion and Regulatory Challenges: A Critical Analysis of Digital Banks and Alternative Lenders Through Digital Platforms, Machine Learning, and Large Language Models Integration. – 2024.- 17p. DOI 10.2139/ssrn.4799209

10. Romero C. L. Digital Disruption in U.S. Mortgage Markets: Fintech’ s Local Impact on Access and Competition. - 2024. -37 p. DOI 10.2139/ssrn.4799209.

11. Ұлттық statistika bjurosy. Тұрғынүйқоryturaly. - 2025. URL: https://stat.gov.kz/industries/business-statistics/stat-inno-build/publications/477116/. -Data obrashhenija: 02.02.2026. [in Kazakh]

12. Obespechennost’ zhil’ jom, razvitie social’ nogo i arendnogo rynka v RK i mire. – 2022. URL: https://ranking.kz/reviews/other/reshenie-zhilishnogo-voprosa-obzor-globalnogo-opyta-odin-iz-dostupnyh-sposobov-razvitie-arendnogo-rynka.html. - Data obrashhenija: 5.02.2026. [in Russian]

13. Chto zhdet rynok nedvizhimosti v 2022 godu. -2022. URL: https://kapital.kz/real_estate/102926/chto-zhdet-rynok-nedvizhimosti-v-2022-godu.html. -Data obrashhenija: 02.02.2026. [in Russian]

14. Ajtzhanbajқyzy G. Құrylys materialdarynyң barasy өsti / Egemen Қazaқstan. -2025. URL: https://egemen.kz/article/385041-qurylys-materialdarynynh-baghasy-osti.-Data obrashhenija: 02.02.2026. [in Russian]

15. Rynok ipotechnogo kreditovanija Respubliki Kazahstan za 2025 God. -2025. URL: https://khc.kz/upload/sprint.editor/a69/7m7kcwd1dq2spo7olr3d317pb5ygu7pd.pdf. -Data obrashhenija: 02.02.2026. [in Russian]

16. Pcheljanskaja I. Ipoteka «7-20-25»: kak podat' zajavku. -2025. URL: https://krisha.kz/content/news/2025/2025-novyy-limit-po-7-20-25-rabotaet-li-ipoteka. -Data obrashhenija: 08.02.2026. [in Russian]

17. Otbasy Bank. Finansovaja i godovaja otchetnost'. -2024. URL: https://hcsbk.kz/ru/about-the-bank/reporting/. -Data obrashhenija: 08.02.2026. [in Russian]

18. O merah po realizacii Poslanija Glavy Gosudarstva k narodu Kazahstana ot 8 sentjabrja 2025 goda «Kazahstan v jepohu iskusstvennogo intellekta: aktual' nye problemy i ih reshenie posredstvom radikal' nyh cifrovyh preobrazovanij» / Ukaz Prezidenta Respubliki Kazahstan. -2025. -№1042. URL: https://adilet.zan.kz/rus/docs/U2500001042. - Data obrashhenija: 08.02.2026. [in Russian]

19. Maқash A. Cifrlyқ ipoteka iske қosyldy / Egemen Қazaқstan. -2025. URL: https://egemen.kz/article/395050-tsifrlyq-ipoteka-iske-qosyldy. -Data obrashhenija: 08.02.2026. [in Kazakh]

20. O realizacii pilotnogo proekta po onlajn-registracii notarial' nyh sdelok kupli-prodazhi nedvizhimosti (zhil' ja vtorogo klassa) v ramkah proekta «Cifrovaja ipoteka» / Sovmestnyj prikaz Ministra justicii Respubliki Kazahstan № 467 ot 25 avgusta 2025 goda i Ministra cifrovogo razvitija, innovacij i ajerokosmicheskoj promyshlennosti Respubliki Kazahstan № 440/NN ot 27 avgusta 2025 goda. -2025. URL: https://adilet.zan.kz/rus/docs/G25D0000467. - Data obrashhenija: 08.02.2026. [in Russian]

21. Gosudarstvennye uslugi i informacija onlajn. Ipotechnoe kreditovanie segodnja https://egov.kz/cms/en/articles/buy_sale/mortgage - Data obrashhenija: 08.02.2026. [in Russian]

22. eGovernment - Digital Land Register (KRIS)E-Land Register Estonia; https://interoperable-europe.ec.europa.eu Date of access: 08.02.2026.

23.HM Land Registry: Sign your mortgage deed. gov.uk https://www.gov.uk.- Date of access: 08.02.2026.

24. USBank. The benefits of eClosing on a home and how it works. https://www.usbank.com.- Date of access: 08.02.2026.

25. Monetary authority of Singapore https://www.mas.gov.sg.- Date of access: 08.02.2026.

26. «Stop kredit»: kak odin cifrovoj instrument zashhishhaet ot moshennicheskih zajmov. -2025. URL: https://fingramota.kz/ru/news/post/stop-kredit-kak-odin-cifrovoj-instrument-zashchishchaet-ot-moshennicheskih-zajmov. - Data obrashhenija: 08.02.2026.

Information about authors

Abdeshova A.Sh. - Master of Economics, Senior Lecturer, Zhangir Khan West Kazakhstan Agrarian and Technical University, Uralsk, Kazakhstan, e-mail: alberta_alberta81@mail.ru;

Tyumambaeva A.G. - Senior Lecturer, Zhangir Khan West Kazakhstan Agrarian and technical University, Uralsk, Kazakhstan, e-mail: Aislu.GT@mail.ru.

Duskaliyev A.S. - Candidate of economic Sciences, Associate Professor, Narxoz University, Almaty, Kazakhstan, e-mail: asylbek.duskaliev@narxoz.kz.

Сведения об авторах

Абдешова А.Ш.- магистр экономических наук, старший преподаватель, Западно-Казахстанский аграрно-технический университет им. Жангир хана, Уральск, Казахстан, e-mail: alberta_alberta81@mail.ru;

Тюмамбаева А. Г. - старший преподаватель, Западно-Казахстанский аграрно-технический университет им. Жангир хана, Уральск, Казахстан, e-mail: Aislu.GT@mail.ru;

Дускалиев А.С. - кандидат экономических наук, ассоциированный профессор, Университет Нархоз, Алматы, Казахстан, e-mail: asylbek.duskaliev@narxoz.kz.