G. Kalkabayeva[1], A. Kurmanalina[1], Yu. Sayfullina[2]

[1] E.A. Buketov Karaganda University, Karaganda, Kazakhstan
[2]Karaganda University of Kazpotrebsoyuz, Karaganda, Kazakhstan
(e-mail: [1]aisanatazhbaeva@mail.ru, [2]anar68@mail.ru)

Availability of bank loans for economic entities in Kazakhstan: assessment of the interrelation of influencing factors

Abstract. *Currently, the credit opportunities of the financial and credit sector are strategically important in ensuring the full development of economic entities, modernization and diversification of production, financing of investment projects. In Kazakhstan, in order to implement state programs, strategies for the development of the financial and credit sector are being developed, modern mechanisms for regulating and stimulating the lending activities of second-tier banks are being used. At the same time, it is noted that the target indicator for expanding the participation of banks in financing the economy has not been reached due to the negative impact of macroeconomic and geopolitical factors, including a decrease in business activity, the dependence of large enterprises of Kazakhstan on external borrowings and others. The article substantiates that the limited access to credit resources is a serious obstacle for economic entities, including small and medium-sized enterprises. A comprehensive solution to the problems in this area is needed to improve the process of interaction between credit institutions and economic entities. Increasing the availability of loans for the real sector of the economy can be achieved through the use of digital technologies, including big data analytics and artificial intelligence in decision-making and the formation of credit conditions.*
Keywords: *lending to the economy, economic and mathematical model, credit conditions, demand for credit resources, interest rates on loans.*

Introduction. Achieving economic growth of the country is possible with a full combination of various sources of financing of the real sector of the economy. In these conditions, ensuring the availability of bank loans for economic entities becomes one of the most important tasks of modern macroeconomic policy of Kazakhstan. As the experience of many developed countries shows, the expansion of economic entities' access to bank loans has a positive effect on the development of economic activity and, ultimately, has a positive synergistic effect on many socio-economic processes.

The usual approaches in the lending activities of banks are being replaced by modern digital practices, the transformation of a traditional bank into a multifunctional IT company is taking place. Digital innovations in the banking business are connected with the fact that financial transactions can be integrated with cloud technologies, blockchain technologies, the Internet of Things, the use of electronic signatures, which has led to the large-scale development

of contactless payments, P2P financing, the cryptocurrency market, digital banking, platform solutions, etc. The rapid transformation of the banking sector in the IT direction implies the growth of both opportunities and threats in the field of information security, which requires improving approaches in the formation of credit policy and in the management of the banking business model as a whole.

The study of theoretical ideas about the content of the concepts of "credit relations", "lending", "lending process" allowed us to generalize the content of the concept of "lending to an economic entity" as a process of interaction between a lender and a borrower - an economic entity regarding the provision of credit resources for temporary use on a refundable basis.

In the Kazakhstani economy, it is bank lending that is more developed and widespread, which is due to the possibility of using temporarily available funds by borrowers with an optimal combination of key lending conditions. Kazakhstani banks traditionally interact with economic entities, providing their needs for credit resources and redistributing funds from one entity to another.

Problem statement. The increase in global risks and macroeconomic uncertainty necessitates the development of a qualitative methodological and applied basis for the formation of a credit policy, which acts as a fundamental tool of the bank's lending activities, has a significant impact on the sustainable growth of the country's economy and creates conditions for the transition to innovative economic development.

Along with this, the problem of increasing the availability of loans for enterprises in the real sector of the economy is very urgent. Unfortunately, the measures taken by the state to stimulate corporate lending and lending to small and medium-sized businesses have not yet shown significant results in this area. It is possible that the introduction of new digital credit products by banks will meet the needs of business structures and will contribute to the expansion of lending to this sector.

The availability of financing, as noted in the World Bank study, is a serious problem in many OECD countries, including Central Asia [1]. The data obtained as a result of the survey show that in Kazakhstan the share of enterprises in need of a bank loan exceeds the global average by 14.2%. In addition, the share of enterprises whose loan application was rejected is 12.2% higher than the global average, which indicates a large number of inconsistencies between potential borrowers and their documentation to the credit policy of banks. Accordingly, the number of enterprises that have received a loan or a credit line from Kazakhstani banks is less than the average for all the countries studied. It should also be noted that most of the loans (79.3%) issued to Kazakhstani enterprises assume the availability of collateral. This indicator in Kazakhstan exceeds the global average by 4.4%. Among the biggest obstacles limiting business development, 12.3% of the surveyed enterprises in Kazakhstan indicate difficult access to financing [1]. Thus, the study of the availability of financing based on a survey of enterprises conducted by the World Bank illustrates the deterioration of indicators in Kazakhstan compared to the global average.

The purpose of the study. The purpose of the study is to deepen the theoretical and practical aspects of the credit policy of second-tier banks with the development of the main directions for its improvement in the conditions of digital transformation of the economy of Kazakhstan, as well as to identify the degree of influence of various factors on the volume of bank lending to economic entities.

The practical significance of the study lies in the fact that recommendations for improving credit policy can be used by second-tier banks in the implementation of a credit strategy and the formation of a bank's digital credit infrastructure. The results of the research in the field of increasing the availability of loans for the subjects of the real sector of the economy can also be used by government agencies in the development of measures to stimulate lending to the corporate sector and support entrepreneurship.

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

237

Literature review. The study of the issues of crediting economic entities is currently very relevant. The study of the development of lending to economic sectors is presented in the works of foreign and domestic scientists. As noted by Kazakhstani researchers Rakhimzhanova K.K. and Makysh S.B., the development of lending plays a key role in the main functions of the domestic banking sector, taking into account financial stability and economic growth, that is, by investing in the real sector of the economy [2, pp. 158-166]. According to these researchers, credit institutions accumulate and mobilize monetary capital, turning it into the most important source of resources for economic entities.

At the same time, N.K. Kuchukova and others noted that the economy of Kazakhstan has a number of internal problems associated with the country's increasing technological lag behind world standards. The main reasons include insufficient own funds of enterprises, as well as unacceptable conditions for investment and lending [3, p. 7-16].

According to researchers Kantorova G.K., Zholamanov M.T. and Shamova A.E., the study of credit relations makes it possible to assess the state of the country's financial and credit system. The decrease in lending volumes is reflected in the level of financial security of the real sector of the economy [4, p. 143]. Along with using the financial capabilities of national holdings and development institutions, in the anti-crisis package of measures, commercial banks act as the main channel for the movement of financial and credit resources to stabilize the situation in key sectors of the economy.

The assessment of the relationship between the indicators of economic growth, credit investments of second-tier banks, key parameters of the development of the banking and real sectors is presented in the works [5, 6, 7]. The authors, noting the trends in lending and the peculiarities of the formation of credit policy at the present stage, point to the need for modernization and introduction of innovations in the lending process.

The key role of bank lending in the development of the real sector of the economy is presented in sufficient detail in many studies. At the same time, in the current conditions of deterioration of the macroeconomic situation in the country, priorities in approaches and principles for considering the role of lending in ensuring sustainable economic growth are significantly shifting. In this regard, the analysis of the dynamics of the development of lending to economic entities, the factors influencing it, the instruments of regulation and stimulation of credit activities of financial and credit organizations is of considerable interest. This is especially important in the conditions of maintaining a high proportion of overdue loans, artificial prolongation of bank loans, mismatch in the urgency of loans sent to long-term investment projects, devaluation of deposits, acceleration of inflationary processes.

Research methods. The theoretical and methodological basis of the study was the works of Kazakhstani and foreign scientists in the field of credit relations, lending and interaction of credit institutions with economic entities, as well as regulatory documents of the Republic of Kazakhstan in the field of financial sector development and financial support of the economy. In the course of the study, general scientific methods of comparative and dynamic analysis, a comprehensive assessment of credit investments in the economy of Kazakhstan, etc. were used. Based on the regression analysis method, the main factors affecting the availability of bank credit for economic entities were identified. The information base of the study was the official statistical data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, the National Bank of the Republic of Kazakhstan, reporting and analytical information of second-tier banks, research results and analytics of rating agencies, databases of international organizations.

Results. As a result of the analytical study, the main trends in the development of bank lending to the economy of Kazakhstan were identified. Table 1 presents the main macroeconomic indicators for lending to economic entities for the period 2018-2022, according to which there is a tendency for the growth of bank lending to economic entities in Kazakhstan from 13.1 to 22.8

trillion tenge. At the same time, the growth rate of loans in the two years of the analyzed period significantly accelerated: from 6% in 2019 to 23.3% by the end of 2022.

The share of bank loans to GDP remains approximately at the same level in 2018-2022: no more than 23%. It should be noted that developed countries are characterized by a fairly high level of this indicator: in the EU – 194%, in the UK – 239%, in Japan – 92% [8, pp. 35-41]. In Kazakhstan, the ratio of loans to GDP is much lower. This fact indicates that the participation of the banking sector in financing the needs of the economy is still insignificant.

The volume of loans to legal entities in absolute terms for the period 2018-2022 increased from 7.8 to 8.6 trillion tenge, but at the same time its share in the total volume of bank loans significantly decreased from 59.5% in 2018 to 37.9% by the end of 2022. A decrease in the share of loans issued to enterprises and firms means a proportional increase in the share of loans issued to individuals. Consequently, lending to the retail sector during this period has become a priority area of lending activity of Kazakhstani banks.

Over the past 5 years, the annual increase in loans issued to non-bank legal entities has been approximately 10%. However, the total loan portfolio of the corporate sector has practically not grown, which is largely due to significant write-offs of debts of large enterprises, the sale of problem loans to JSC "Problem Loans Fund", measures to reduce the volume of non-performing loans based on the results of asset quality control [9].

Table 1 - Volume of loans from second-tier banks to the economy and credit security of economic entities of the Republic of Kazakhstan

Indicators	2018	2019	2020	2021	2022
Kazakhstan's GDP, billion tenge	61,819.5	69,532.6	70,134.1	81,269.0	101,522.9
Loans from second-tier banks to the economy, billion tenge	13,091.7	13,864.9	14,623.1	18,497.7	22,811.9
The ratio of loans to GDP,%	21.2	19.9	20.8	22.7	22.5
Loans to non-bank legal entities, billion tenge	7789.1	7203.5	7097.0	7758.8	8653.5
The share of loans to legal entities in the total volume of bank loans, %	59.5	51.9	48.5	41.9	37.9
Number of active legal entities, thousand units	279.7	308.0	330.3	352.8	399.4
Provision of economic entities with bank loans, billion tenge	2.8	2.3	2.1	2.2	2.2
Note – Compiled and calculated on the basis of data from the National Bank of the Republic of Kazakhstan [10] and the Bureau of National Statistics of the ASPR of the Republic of Kazakhstan [11]					

Thus, against the background of the predominance of second-tier banks in the credit market of Kazakhstan, the greatest potential for expanding lending volumes is concentrated in the banking sector. However, in reality, there is an insignificant role of banks in financing economic entities, which is confirmed by the low ratio of bank loans to GDP at the level of 22.5%. In the current economic conditions, the interests of financial and credit organizations in obtaining income and profit through short-term investments dominate the need to increase the volume of lending to economic entities and increase the availability of credit resources. The structure of credit investments of second-tier banks demonstrates a bias towards lending to individuals, non-productive entities and trade. For investment purposes, enterprises prefer to direct their accumulated own funds, and to purchase working capital at the expense of short-term loans. The current economic situation may lead to an increase in the share of problem debt in the corporate

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

239

loan portfolio of the banking sector. Another negative factor is that the public sector continues to occupy a predominant position in the economy of Kazakhstan, leading to distortions in the structure of its financing.

A comparative analysis of the dynamics of GDP and the ratio of loans to the private sector and GDP in the countries of Central Asia and the Russian Federation, according to the World Bank, revealed the presence of different trends. Table 2 shows the indicators of GDP and bank loans to the private sector in the countries of Central Asia and the Russian Federation for the period 2017-2020.

Table 2 – Indicators of GDP and loans in Central Asia and the Russian Federation

A country	2017		2018		2019		2020	
	GDP growth, in %	Bank loans to the private sector, in % of GDP	GDP growth, in %	Bank loans to the private sector, in % of GDP	GDP growth, in %	Bank loans to the private sector, in % of GDP	GDP growth, in %	Bank loans to the private sector, in % of GDP
Kazakhstan	4.1	25.83	4.1	22.61	4.5	21.20	-2.5	22.02
Russian Federation	1.83	52.07	2.81	51.24	2.2	52.56	-2.66	59.73
Kyrgyzstan	4.74	21.28	3.76	23.25	4.60	24.42	-8.40	28.14
Azerbaijan	0.20	21.15	1.50	19.92	2.50	22.15	-4.30	25.02
Uzbekistan	4.40	15.79	5.35	22.78	5.71	29.05	1.89	35.69
Tadjikistan	7.10	11.86	7.60	11.06	7.40	10.71	4.40	11.88
Note – Compiled on the basis of World Bank data [12]								

According to Table 2, it should be noted that in all countries of Central Asia and the Russian Federation in 2020 there was a drop in GDP compared to the level of previous years. The largest decrease in GDP in 2020 is observed in the Kyrgyz Republic (-8.4%), as well as Azerbaijan (-4.3%). Positive GDP growth in 2020 was recorded in Uzbekistan and Tajikistan.

At the same time, among all the analyzed countries, only in Kazakhstan there is a decrease in the share of loans to the private sector to GDP. This indicator in our republic decreased from 25.83% in 2017 to 22.02% in 2020. In the rest of the Central Asian countries and the Russian Federation, there was an increase in the indicator "the ratio of bank loans to the private sector to GDP". Consequently, in Kazakhstan, the participation of the banking sector in lending to the economy continues to remain at an insignificant level even compared to the banking sector of neighboring countries, including the Russian Federation, Uzbekistan, Kyrgyzstan and Azerbaijan.

Analyzing the sources of financing of fixed and working capital of enterprises in Kazakhstan, it can be noted that most of them use their own funds for these purposes. Less than 10% of economic entities use bank loans to finance fixed capital, and less than 1/5 of economic entities use them to finance working capital, as noted in the market survey of enterprises in the real sector of the economy conducted by the National Bank of the Republic of Kazakhstan [13].

The low level of demand for bank loans is primarily due to tight credit conditions. Thus, according to the results of the sectoral market survey of the National Bank of the Republic of Kazakhstan, 22.1% of agricultural enterprises, 14.9% of manufacturing enterprises, 13% of transport and logistics enterprises, 12.1% of construction and trading companies, 10.2% of mining enterprises consider the conditions of bank lending unacceptable for themselves [14].

In these conditions, ensuring the availability of credit resources becomes one of the most important tasks of modern macroeconomic policy of Kazakhstan. As the experience of many developed countries shows, the expansion of economic entities' access to bank loans has a positive effect on the development of economic activity and, ultimately, has a positive synergistic effect on many socio-economic processes.

As one of the indicators of credit availability, the assessment of the demand for credit resources of financial and credit institutions based on the analysis of sustainable demand for them from economic entities is recognized. However, according to the results of the market survey of the National Bank of the Republic of Kazakhstan in the 4th quarter of 2022, the share of enterprises that applied for a bank loan was only 571 enterprises or 17% of the respondents. On average, during the fourth quarters of 2018-2022, the share of enterprises that applied to banks for a loan did not exceed 21% of all respondents. Consequently, most enterprises used other sources of financing for their activities, mainly their own funds.

The share of enterprises applying for a bank loan decreased by 3.3%: from 20.3% in the 1st quarter to 17% in the 4th quarter of 2022. At the same time, the main demand for loans is formed by manufacturing and trade enterprises: 22.9% and 17.3% in the 4th quarter of 2022, respectively. Low demand for bank loans is observed in the transport and warehousing sector (no more than 8.2% of the respondents). The share of mining, construction and agriculture enterprises that applied for a loan varies between 10.6-12.8% of the respondents. Consequently, the deterioration of the Kazakhstani economy against the background of the influence of external and internal factors leads to a tightening of credit conditions, which in turn leads to a decrease in demand for loans from the subjects of the real sector of the economy. Under these conditions, less than a third of manufacturing enterprises and less than 1/8 of agricultural enterprises apply for loans.

As noted in the review of the National Bank of the Republic of Kazakhstan, negative assessments of price and non-price lending conditions prevail among domestic enterprises. At the same time, non-price conditions include the maximum size and term of the loan, requirements for the financial condition of the borrower, security requirements, etc. Price conditions cover the level of interest rates on loans and the number of possible commissions for the organization of the loan, etc. [14].

The dynamics of interest rates on loans from second-tier banks of the Republic of Kazakhstan depends mainly on decisions on the base rate of the National Bank of the Republic of Kazakhstan. A significant increase in the base rate since the beginning of 2022 has led to an increase in interest rates on bank loans and negatively affected the availability of credit resources. The highest interest rate is observed for long-term and short-term loans in the national currency, which amounted to 19.2% in 2022.

A study of the processes of digitalization of banking business has shown that Kazakhstani banks have developed and are successfully implementing Internet banking and a mobile application for representatives of the corporate sector and SMEs. Digital services and digital credit products of second-tier banks of the Republic of Kazakhstan have significant differences due to different priority areas of credit activity and business models. Credit risk management is based on its own systems and algorithms based on the use of artificial intelligence, internal customer information, integration with external databases, etc. In general, Kazakhstani banks strive to develop beyond classical banking functions through the development of ecosystems and super-applications. Banks are expanding the possibilities of interaction with business structures and conducting credit transactions in an online format, diversifying the range of services for business clients available through personal accounts on online banking platforms. Consequently, further technological development, user-friendliness of the interface, speed, availability and

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

241

uninterrupted operation of digital services, along with the stability of the bank, come to the fore.

In order to confirm the existence of causal relationships between the volume of bank lending to legal entities and macroeconomic conditions, an economic and mathematical model was developed within the framework of this scientific study. The peculiarity of the proposed economic and mathematical model is an integrated approach based on the determination of causality at two levels: 1) between the indicators: the volume of bank lending to non-bank legal entities and the GDP of Kazakhstan; 2) the influence of factors (the level of interest rates on loans for legal entities, the number of second-tier banks of the Republic of Kazakhstan, the amount of overdue debt on bank loans) on the growth of bank lending to economic entities, and, consequently, on the availability of loans for business structures.

Let's test the hypothesis that there is a connection between the indicators of GDP (billion tenge) and the volume of loans to STB non-bank legal entities (billion tenge). The statistical data used for the analysis for the period from 2002 to 2022 are taken from the Statistical Bulletin of the National Bank of the Republic of Kazakhstan and official data of the Bureau of National Statistics of the Republic of Kazakhstan. Correlation and regression analysis was used to assess the relationship, in particular, the linear regression model, which allows to determine the correlation coefficient between the studied indicators, as well as to assess the degree of influence of one indicator on another.

To identify the relationship between the first group of indicators (GDP and the volume of loans to non-bank legal entities), the Pearson correlation coefficient was used, which is used to measure the linear relationship between two variables. To construct the linear regression equation, the indicators y – GDP and x – the volume of bank lending to non-bank legal entities were taken. Results of calculations of the correlation coefficient:

sum x = 143,267.2
sum y = 77,888.4
sum x^2 = 12,890,592,592.05
sum y^2 = 327,171,028.25
sum xy = 694,244,818.57
n = 21

$$r_{xy} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2}\sqrt{\sum_{i=1}^{n}(y_i - \bar{y})^2}} = 0.973$$

The results of econometric modeling allows us to draw the following conclusions:

1) the closeness of the relationship between GDP and the volume of loans to non-bank legal entities is high (the correlation coefficient value of 0.973 is close to 1) and positive;

2) the regression equation as a whole and its individual parameters with a probability of 99% are statistically significant and reliable;

3) the coefficient of elasticity of GDP in relation to the volume of loans to non-bank legal entities amounted to 1.357. Therefore, it can be expected that with an increase in the volume of loans from second-tier banks of the Republic of Kazakhstan to non-bank legal entities by 1%, GDP will increase by an average of 1357%.

To assess the second group of indicators and determine the degree of influence of certain factors on the dynamics of bank lending volumes to economic entities *(y)*, the following indicators were taken:

x_1 – the level of the interest rate on loans for legal entities (%);
x_2 – number of second-tier banks of the Republic of Kazakhstan;
x_3 – the amount of overdue debt on bank loans to legal entities.

Statistical data of the National Bank of the Republic of Kazakhstan for the period from 2002 to 2022 were used to estimate the parameters of the regression equation. To identify the closeness of the relationship between several variables, a multiple regression method was used, which

allows us to determine how a dependent variable is related to several independent variables and how strong this relationship is. The results of the approximation of the studied indicators are presented in Table 3.

Table 3 - Results of evaluation of the multiple regression equation

Indicators	Values
R	0.817
R^2	0.669
Normalized R^2	0.610
Fischer 's Test	11.442($p-value=0,004$)
Free coefficient	11853.442
x_1 – the level of the interest rate on loans for legal entities	301.33
x_2 – number of second-tier banks of the Republic of Kazakhstan	-375.56
x_3 – the amount of overdue debt on bank loans to legal entities	3.70
Note – Calculated on the basis of MS Excel PPP	

The coefficient R is equal to 0.817, which indicates a fairly close relationship between the resulting feature and factor features. The coefficient of determination R2 is 0.669, i.e., 66.9% of the variation of the dependent variable is explained by the regression obtained. The observed value of the Fisher criterion is greater than the critical F = 11.442 and greater than the critical $F_{critical}$ = 4.667, which indicates the statistical significance and reliability of the regression equation as a whole with a probability of 95%. Comparing the absolute values of the observed

values of t-statistics = 2.691 with the critical value $t_{крит.}$ = 2,160 it can be concluded that with a 95% probability the regression coefficients are statistically significant and reliable. The normal probability graph allows you to visually assess the degree of linear dependence between the dependent and independent variables (Figure 1).
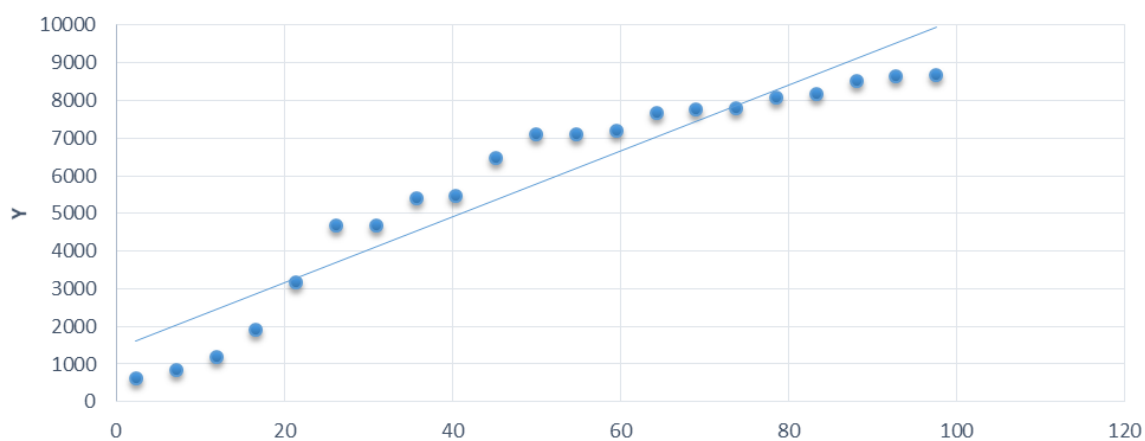

Figure 1 - Graph of the normal probability of regression analysis
Note – Calculated on the basis of MS Excel PPP

The free coefficient is equal to 11,853.44 and shows what the volume of bank loans to legal entities will be if all the factors studied are equal to 0. Therefore, the value of the dependent variable is influenced by other factors not described in the model. Perhaps this is due to measures of state support for business and the development of lending programs for development institutions.

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

243

The coefficients of variables x_1, x_2, x_3 equal to 301.33, -375.56 and 3.70 respectively show the weight of these variables on y. That is, the level of the interest rate on loans for legal entities within this regression model affects the volume of lending to legal entities with a weight of 301.33 (a large degree of influence), the number of second–tier banks of the Republic of Kazakhstan - with a weight of -375.56 (a large degree of influence with an inverse relationship), the amount of overdue debt on bank loans to legal entities – with a weight of 3.70 (average degree of influence). The negative impact of the second variable shows that a decrease in the number of banks does not entail a decrease in lending volumes, since in the conditions of digital transformation, even a small number of banks are able to expand remote credit services based on Internet banking and mobile banking.

The correlation analysis showed the presence of a different causal relationship between the studied variables, the results of which are presented in Table 4.

Table 4 - Correlation matrix

Indicators	Volume of loans to non-bank legal entities	Interest rate on loans to legal entities	Number of second-tier banks of the Republic of Kazakhstan	Overdue debt on loans of legal entities
Volume of loans to non-bank legal entities	1.000	-0.161	-0.511	0.548
Interest rate on loans to legal entities	-0.161	1.000	-0.062	-0.545
Number of second-tier banks of the Republic of Kazakhstan	-0.511	-0.062	1.000	0.123
Overdue debt on loans of legal entities	0.548	-0.545	0.123	1.000
Note – Calculated on the basis of MS Excel PPP				

Thus, the following regression equation is obtained:

$$y = 11853.44 + 301.33x_1 - 375.56x_2 + 3.70x_3$$

The closeness of the relationship between the volume of loans and the totality of the studied factors is quite high and can be used to predict the volume of bank loans to legal entities. Thus, with an increase in independent variables (the level of the interest rate on loans for legal entities, the number of second-tier banks of the Republic of Kazakhstan, the amount of overdue debt on bank loans) by 1% within the regression equation will lead to an increase in the volume of bank lending to legal entities to 9709.3 billion tenge. On the other hand, with a decrease in independent variables (the level of interest rates on loans for legal entities, the number of second-tier banks of the Republic of Kazakhstan, the amount of overdue debt on bank loans) by 1% within the regression equation will lead to an increase in bank lending to legal entities to 10339.3 billion tenge. Such a significant difference in the results obtained is due to the negative influence of the factor - the number of second-tier banks of the Republic of Kazakhstan, as well as the influence on the dependent variable (the volume of bank lending to legal entities) of other factors not included in the economic and mathematical model.

Conclusions. As the results showed, a slight decrease in interest rates on bank loans does not have a significant impact on the growth rate of lending to legal entities during the specified

period, which confirms the thesis that the level of interest rates on loans in Kazakhstan is still high compared to acceptable rates for enterprises.

In addition, there is a negative statistical relationship of average closeness between the number of second-tier banks and the volume of loans they issue to enterprises. The obtained result confirms the thesis that the quantitative reduction of second-tier banks did not have a significant impact on the availability of loans for subjects of the real sector of the economy in the Republic of Kazakhstan. However, according to the results of the correlation analysis, there is a positive correlation of an average degree between the volumes of overdue loans and the volumes of lending to legal entities, which confirms the thesis about the interdependence of these indicators and the impact on the credit activity of banks and the increased availability of loans for economic entities.

Thus, an economic and mathematical model was used to assess the impact of various factors on the volume of lending and the availability of bank loans for economic entities. The model included indicators of the volume of bank lending to legal entities and the GDP of Kazakhstan, and also determined the degree of influence of such factors as the level of interest rates on loans for legal entities, the number of second-tier banks of the Republic of Kazakhstan, the amount of overdue debt on bank loans to legal entities for the period 2002-2022.

The success factors of credit policy in the digital transformation of banking business models can now be:

- clear strategy and ambitious goals. The following elements should be included in the bank's credit strategy: the process of creating and developing digital credit products and business models, calculating the costs of implementing the strategy, measures to identify risks arising from the digitalization of credit activities;

- development of partnerships with startups and fintech companies, telecommunications and IT services, which will allow you to gain additional competencies and competitive advantages in the credit market;

- development of digital competencies, including the collection and processing of a large volume of unstructured data, including using artificial intelligence.

References

Surveys of enterprises. The World Bank. [Electronic resource]. - URL: https://www.enterprisesurveys.org/en/data/exploreeconomies/2019/kazakhstan#2 (Accessed: 02.06.2023).

2. Rakhimzhanova K.K., Makysh S. Analysis of the current state of problem loans in second-tier banks. //Economic series of the Bulletin of the L.N. Gumilev ENU. - 2020. - No. 4. - P. 158-166.

3. Kuchukova N.K., Talimova L.A. Financial aspects of the innovative model of economic growth of Kazakhstan in the new global reality. //Bulletin of Tver State University. Series: Economics and Management. - 2020 - №2(50). - P. 7-16.

4. Kantorova G.K., Zholamanova M.T. and Zhamieva A.E. Lending to the real sector of the economy by banks of Kazakhstan. // Economic series of the Bulletin of the L.N. Gumilev ENU. – 2019. - No. 4. - P. 141-150.

5. Kalkabayeva, G., Rakhmetova, A., Nakipova, G., Bespayeva, R., Borbasova, Z., Saifullina, Y. Financial sector assets, real innovation and economic growth: assessment of interconnection and influence of regulatory instruments. //Entrepreneurship and Sustainability. – 2020. – Is. 8(2). – P.559-577. http://doi.org/10.9770/jesi.2020.8.2(34)

6. Fombang M.S., Adiasi C.K. Access to finance and firm innovation. //Journal of financial economic policy. – 2016. - T. 10. - P. 73-94. http://doi.org/10.1108/JFEP-10-2016-0070

7. Baigarin T. Approaches to changing the business model through the use of digital technologies. // Central Asian Economic Review. – 2021. - №2 (137). – P.161-169.

8. Vlasenko M.N. On the main indicators of the debt burden on the economy. //Banking Bulletin. – 2016. - No. 10. - P. 35-41 [Electronic resource]. - URL: https://www.nbrb.by/bv/articles/10187.pdf (Accessed: 02.06.2023).

9. Lending problems: the banks of the Republic of Kazakhstan are waiting for large-scale stress

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

245

testing. [Electronic resource]. - URL: https://forbes.kz//finances/finance/problemyi_kreditovaniya_banki_rk_na_poroge_masshtabnogo_stress-testirovaniya/? (Accessed: 01.06.2023).

10. Statistical Bulletin of the National Bank of the Republic of Kazakhstan [Electronic resource]. - URL: https://nationalbank.kz/ru/news/statisticheskiy-byulleten/rubrics/1675 (Accessed: 04.06.2023).

11. Dynamics of the main socio-economic indicators. Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan [Electronic resource]. - URL: https://stat.gov.kz/official/dynamic (Accessed: 04.06.2023).

12. World Bank data [Electronic resource]. - URL: https://databank.worldbank.org/source/world-development-indicators (Accessed: 04.06.2023).

13. The National Bank of the Republic of Kazakhstan. Market review. Results of surveys of enterprises on the economy [Electronic resource]. – URL: https://nationalbank.kz/ru/page/konyunkturnyy-obzor (Accessed: 02.06.2023).

14. The National Bank of the Republic of Kazakhstan. Industry market review. Results of surveys of enterprises by industry. [Electronic resource]. – URL: https://www.nationalbank.kz/ru/page/otraslevoy-obzor (Accessed: 02.06.2023).

Г. Қалкабаева[1], А. Құрманалина[2], Ю. Сайфуллина[1]
[1]Қазтұтынуодағы Қарағанды университеті, Қарағанды, Қазақстан
[2] Е. А. Бөкетов атындағы Қарағанды университеті, Қарағанды, Қазақстан

Қазақстандағы шаруашылық жүргізуші субъектілер үшін банктік несиелеудің қолжетімділігі: әсер етуші факторлардың өзара байланысын бағалау

Аңдатпа. Қазіргі уақытта қаржы-несие секторының несиелік мүмкіндіктері экономика субъектілерінің толыққанды дамуын қамтамасыз етуде, өндірісті жаңғырту мен әртараптандыруда, инвестициялық жобаларды қаржыландыруда стратегиялық маңызды болып табылады. Қазақстанда мемлекеттік бағдарламаларды іске асыру мақсатында қаржы-несие секторын дамыту стратегиялары әзірленеді, Екінші деңгейдегі банктердің несиелік қызметін реттеу мен ынталандырудың қазіргі заманғы тетіктері пайдаланылады. Сонымен қатар, макроэкономикалық және геосаяси факторлардың теріс әсеріне, оның ішінде іскерлік белсенділіктің төмендеуіне, Қазақстанның ірі кәсіпорындарының сыртқы қарыз алуларға және басқаларына тәуелділігіне байланысты банктердің экономиканы қаржыландыруға қатысуын кеңейту бойынша нысаналы көрсеткішке қол жеткізбеу байқалады. Мақалада несиелік ресурстарға қол жетімділіктің шектеулі болуы экономикалық субъектілерге, соның ішінде шағын және орта бизнеске үлкен кедергі болып табылады. Несиелік ұйымдар мен экономикалық субъектілердің өзара әрекеттесу процесін жақсарту үшін осы саладағы мәселелерді кешенді шешу қажет. Экономиканың нақты секторы үшін несиелердің қолжетімділігін арттыру цифрлық технологияларды, соның ішінде шешімдер қабылдау және несиелеу шарттарын қалыптастыру кезінде үлкен деректер мен жасанды интеллект талдауларын қолдану арқылы қамтамасыз етілуі мүмкін.

Түйін сөздер: экономиканы несиелендіру, экономикалық-математикалық модель, несиелеу шарттары, несиелік ресурстарға сұраныс, несиелер бойынша сыйақы мөлшерлемелері.

Г.М. Калкабаева[1], А.К. Курманалина[2], Ю.М. Сайфуллина[1]
[1]Карагандинский университет Казпотребсоюза, Караганда, Казахстан
[2]Карагандинский университет им. Е.А. Букетова, Караганда, Казахстан

Доступность банковских кредитов для экономических субъектов в Казахстане: оценка взаимосвязи влияющих факторов

Аннотация. В настоящее время кредитные возможности финансово-кредитного сектора являются стратегически важными в обеспечении полноценного развития субъектов экономики, модернизации и диверсификации производства, финансировании инвестиционных проектов. В Казахстане с целью реализации государственных программ разрабатываются стратегии развития финансово-кредитного сектора, используются современные механизмы регулирования

и стимулирования кредитной деятельности банков второго уровня. Вместе с тем, отмечается недостижение целевого показателя по расширению участия банков в финансировании экономики в связи с негативным влиянием макроэкономических и геополитических факторов, в том числе снижением деловой активности, зависимости крупных предприятий Казахстана от внешних заимствований и других. В статье обосновывается, что ограниченность доступа к кредитным ресурсам является серьезным препятствием для экономических субъектов, включая малые и средние предприятия. Для улучшения процесса взаимодействия кредитных организаций и экономических субъектов необходимо комплексное решение имеющихся в этой сфере проблем. Повышение доступности кредитов для реального сектора экономики может быть обеспечено за счет применения цифровых технологий, в том числе аналитики больших данных и искусственного интеллекта при принятии решений и формировании условий кредитования.

Ключевые слова: кредитование экономики, экономико-математическая модель, условия кредитования, востребованность кредитных ресурсов, ставки вознаграждения по кредитам.

References

Enterprise surveys. The World Bank. Available at: https://www.enterprisesurveys.org/en/data/exploreeconomies/2019/kazakhstan#2 (accessed 02.06.2023).

2. Rakhimzhanova KK, Makysh S. Analiz sovremennogo sostoyaniya problemnyh kreditov v bankah vtorogo urovnya [Analysis of the current state of problem loans in second-tier banks]. Economic series of the Bulletin of ENU named after L.N. Gumilyov. 2020. №4. P. 158-166. [in Russian]

3. Kuchukova N.K., Talimova L.A. Finansovye aspekty innovacionnoj modeli ekonomicheskogo rosta Kazahstana v usloviyah novoj global'noj real'nosti [Financial aspects of the innovative model of economic growth of Kazakhstan in the new global reality]. Bulletin of the Tver State University. Series: Economics and Management. 2020. №2(50). P. 7-16. [in Russian]

4. Kantoroeva G.K., Zholamanova M.T. and Zhamieva A.E. Kreditovanie real'nogo sektora ekonomiki bankami Kazahstana [Lending to the real sector of the economy by banks of Kazakhstan]. Economic series of the Bulletin of ENU named after L.N. Gumilyov. 2019. №4. P. 141-150. [in Russian]

5. Kalkabayeva, G., Rakhmetova, A., Nakipova, G., Bespayeva, R., Borbasova, Z., Saifullina, Y. Financial sector assets, real innovation and economic growth: assessment of interconnection and influence of regulatory instruments. Entrepreneurship and Sustainability. 2020. Is. 8(2). P. 559-577. http://doi.org/10.9770/jesi.2020.8.2(34)

6. Fombang M.S., Adiasi C.K. Access to finance and firm innovation. //Journal of financial economic policy. 2016. T. 10. P. 73-94. http://doi.org/10.1108/JFEP-10-2016-0070

7. Baigarin T. Podhody k izmeneniyu biznes-modeli putem primeneniya cifrovyh tekhnologij [Approaches to changing the business model through the use of digital technologies]. Central Asian Economic Review. 2021. №2 (137). P.161-169. [in Russian]

8. Vlasenko M.N. Ob osnovnyh pokazatelyah dolgovoj nagruzki na ekonomiku [On the main indicators of the debt burden on the economy]. Bank Bulletin. 2016. №10. P. 35-41. Available at: https://www.nbrb.by/bv/articles/10187.pdf [in Russian] (accessed 01.06.2023).

9. Problemy kreditovaniya: banki RK zhdet masshtabnoe stress-testirovanie. [Lending problems: banks of the Republic of Kazakhstan are waiting for large-scale stress testing]. Available at: https://forbes.kz//finances/finance/problemyi_kreditovaniya_banki_rk_na_poroge_masshtabnogo_stress-testirovaniya/?[in Russian] (accessed 01.06.2023).

10. Statistical Bulletin of the National Bank of the Republic of Kazakhstan. Available at: https://nationalbank.kz/ru/news/statisticheskiy-byulleten/rubrics/1675 (accessed 04.06.2023).

11. Dynamics of the main socio-economic indicators. Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan. Available at: https://stat.gov.kz/official/dynamic (accessed 04.06.2023).

Экономическая серия Вестника ЕНУ им. Л.Н. Гумилева
ECONOMIC Series of the Bulletin of L.N. Gumilyov ENU

№ 4/2023

247

12. World Bank data. Available at: https://databank.worldbank.org/source/world-development-indicators (accessed 04.06.2023).

13. National Bank of the Republic of Kazakhstan. Kon"yunkturnyj obzor. Rezul'taty oprosov predpriyatij po ekonomike [Market review. Results of surveys of enterprises on the economy]. Available at: https://nationalbank.kz/ru/page/konyunkturnyy-obzor [in Russian] (accessed 05.06.2023).

14. National Bank of the Republic of Kazakhstan. Otraslevoj kon"yunkturnyj obzor. Rezul'taty oprosov predpriyatij v razreze otraslej. [Industry conjuncture review. The results of surveys of enterprises in the context of industries.]. Available at: https://www.nationalbank.kz/ru/page/otraslevoy-obzor [in Russian] (accessed 05.06.2023).

Сведения об авторах:

Қалқабаева Гаухар Мұратқызы – э.ғ.к., доцент, Қазтұтынуодағы Қарағанды университетінің ЭҚЗ ҒЗИ аға ғылыми қызметкері, Қарағанды, Қазақстан

Құрманалина Анар Қайратқызы – экономика ғылымдарының кандидаты, профессор, Е.А. Бөкетов атындағы Қарағанды университетінің «Қаржы» кафедрасының профессоры, Қарағанды, Қазақстан

Сайфуллина Юлия Магдатқызы – э.ғ.к., Қазтұтынуодағы Қарағанды университетінің «Қаржы» кафедрасының доценті, Қарағанды, Қазақстан

Kalkabayeva Gaukhar Muratovna – Candidate of Economic Sciences, Associate Professor, Senior Research Fellow, Research Institute of ELR, Karaganda University of Kazpotrebsoyuz, Karaganda, Kazakhstan

Kurmanalina Anar Kairatovna – Candidate of Economic Sciences, Professor, Department of Finance, E.A. Buketov Karaganda University, Karaganda, Kazakhstan.

Saifullina Yuliya Magdatovna – Candidate of Economic Sciences, Associate Professor, Department of Finance, Karaganda University of Kazpotrebsoyuz, Karaganda, Kazakhstan.