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**DEVELOPMENT MANAGEMENT OF INTERBANK  
COMPETITION IN THE CORPORATE LENDING  
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**Introduction.** The effective functioning of the banking sector is a prerequisite for the economy development and one of the main sources of providing monetary resources for economic activity of entrepreneurship, regardless of ownership forms and spheres of management. The urgent problem of business development today is the lack of own financial resources for economic activity and a significant reduction in corporate bank lending. Therefore, it is relevant to study and solve the problems of renewing lending by banks to the corporate sector at the present time, taking into account the prevention of the increase in the level of credit risk.

**Aim and tasks.** The purpose of the study is to manage the development of interbank competition in the corporate lending market based on a study of the bank lending state to corporate clients and further prospects in the absence of an accurate forecast of the economic situation in Ukraine.

**Results.** The analysis of the dynamics of the bank lending total volume to business in 2022-2023 and the structure of the provided corporate loans showed that since mid-2022 there has been a tendency to decrease the volume of loans to entrepreneurship, which is caused by a decrease in demand from borrowers and an increase in the cost of credit from banks. In addition, more than 70% of the loans provided are concentrated in five larger banks in Ukraine, including 4 state-owned ones, preferential lending to businesses with state support prevails. To further assess the development of corporate bank lending, a prediction of lending volumes for 2023 was carried out, which made it possible to establish that lending volumes by banks of non-financial corporations have a forecast downward trend.

**Conclusions.** Recommendations for improving corporate bank lending processes are proposed, namely: development of credit policy directions that will prevent a new crisis of confidence in banks and the banking system; development of measures that will prevent the curtailment of preferential targeted lending programs; developing measures to reduce the level of non-performing loans and solving the problem of lowering the cost of financing sources.

**Keywords:** banking system, corporate lending, non-financial corporations, forecasting.

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## 1. Introduction.

In the face of crisis threats, the functioning of the banking sector is carried out in a mode of increasing uncertainty. The coordinated actions of the national regulator in the financial sector and banks quickly adjust the banking system to the sufficiently stable operation of financial institutions, but the fact of transformational changes in the system is obvious. Considering the most difficult financial conditions in 2022, the most affected is the economy of Ukraine, which lost more than 63% of business entities from the previous year as a result of the financial system imbalance (Berkal, 2023). The main problems that exist in business in 2023 are related to the unpredictability of the situation in Ukraine, the insufficient number of solvent customers in the country, obstacles from fiscal authorities, dumping by competitors, and a decrease in market profitability. Starting in mid-2022, banks gradually began to increase prices for attracted and credited funds, which in turn reduced the rate of lending to both the retail and corporate sectors. Throughout the independence of Ukraine, bank lending to the corporate sector stimulated reproductive processes in the economy and was one of the main sources of providing monetary resources for the economic activities of enterprises, regardless of ownership forms and spheres of management. Thus, one of the urgent problems facing business development today is the lack of financial resources and a significant reduction in bank lending to business entities. A decrease in corporate lending, on the one hand, slows down the development of the economy; on the other hand, it causes significant losses in the banking system's income. Therefore, it is urgent to solve the problems of renewing lending by banks to the corporate sector, taking into account the prevention of an increase in the level of credit risk, because this type of resource was and remains an important source of financing business development.

## 2. Literature review.

The studies are devoted to the study of the current state of the banking system, including corporate lending and its problems. Stiglitz (2018) believed that for the functioning of the market system, not just money supply and its regulation are of particular importance but lending processes.

Schumpeter (2021) considered bank loans as a counteraction to inflation and preventive measures in the context of economic crisis and called credit the driving force of economic development, determining that when banks provide credit, the latest payment means appear in circulation, which are capital (Langroodi, 2021). Kremen and Gulyaeva (2020) claim that loans provided by banking institutions to non-financial corporations are of exceptional importance for economic growth and development. Gerasimenko (2021) proves that the company's own resources are objectively limited and can be supplemented by attracted and borrowed financial resources; the formation source of the latter is often bank loans. Therefore, even in the period of martial law, bank credit should be the engine of functioning of business clients in difficult conditions of uncertainty.

At the same time, there are warnings about the emergence of additional risks in banks when business conditions deteriorate. Cole and Damm (2020) proved that a decrease in the quality of the corporate credit portfolio in crisis conditions leads to a decrease in the profitability of banks. Hardouvelis and Vaianos (2023) came to similar conclusions about the negative impact of the growth of non-performing assets on the performance of Greek banks. The emergence of problem loans in the corporate sector can be explained by the credit risk of Turkish banks, which leads to a decrease in return on assets (ROA), the share of non-interest income and an increase in the share of provisions for loan losses, Danishman (2018) believes.

Akhryomushkin (2018), who has researched the problems of the bank corporate lending development in Kazakhstan, believes that big business in the country is almost entirely owned, firstly, by international corporations (oil and gas and mining), which receive direct financing from parent companies and do not need loans from local banks; or secondly, to the state, which attracts long money on international capital markets cheaper than their cost in domestic private banks, and can also redistribute raw excess in favor of larger public sector companies (Perminov, 2021). Hudz (2021), basing on an analysis of a number of scientists' opinions, considers the conditions of bank lending to entrepreneurship as aimed

more at preserving and protecting the interests of commercial banks than at stimulating business and increasing the welfare of society. In turn, Pasinovich and Kuchma (2018) prove that the state uses banks not to implement programs to modernize the structure of the Ukrainian economy and stimulate the investment process, but to sell them securities issued to finance budget needs. Prokopenko et al. (2019) studied the role of the banking system in the process of forming an innovation system, and also proposed ways to increase the innovative role of banks and minimize innovation risks through integration with the innovation infrastructure. The researchers analyzed the mechanisms of innovation support by banks on the example of India, Great Britain and Norway. However, scientists did not pay enough attention to the matters of determining the further bank lending development to the corporate sector against the background of a full-scale war and in the conditions of post-war reconstruction; therefore they are not systematized and require further consideration.

The paper is aimed at studying the trends of lending to corporate clients by the banking sector during wartime and determining its further prospects, provided there is no accurate forecast of the economic situation in Ukraine.

### 3. Methodology.

The research used the methods of statistical and factor analysis while analysing business lending in the modern conditions of the Ukrainian banking system's functioning. Visualization of the conducted analysis and econometric modelling of the developing forecast trend of business lending volumes in the Ukrainian banking system was carried out graphically. The abstract-logical method was used in theoretical generalizations and the formation of conclusions. Calculations in the study were based on the following mathematical formulas, when evaluating competition in the banking market, which is determined by the increase in the level of concentration of assets and capital of banks, the Herfindal-Hirschman index (HHI) is used, which is calculated using the formula:

$$HHI = \sum_{i=1}^N Y_i^2 \quad (1)$$

Where  $Y_i$  – bank's market share;  $N$  – number of banks in the market.

The research used data from the statistical database of the National Bank of Ukraine on 67 banks of Ukraine.

The formula of the quadratic function of the second degree was used to construct the trend:

$$y = a_0 + a_1t + a_2t^2 + a_3t^3 \quad (2)$$

Economic and mathematical modeling was carried out using the STATISTICA 10 software complex.

### 4. Results.

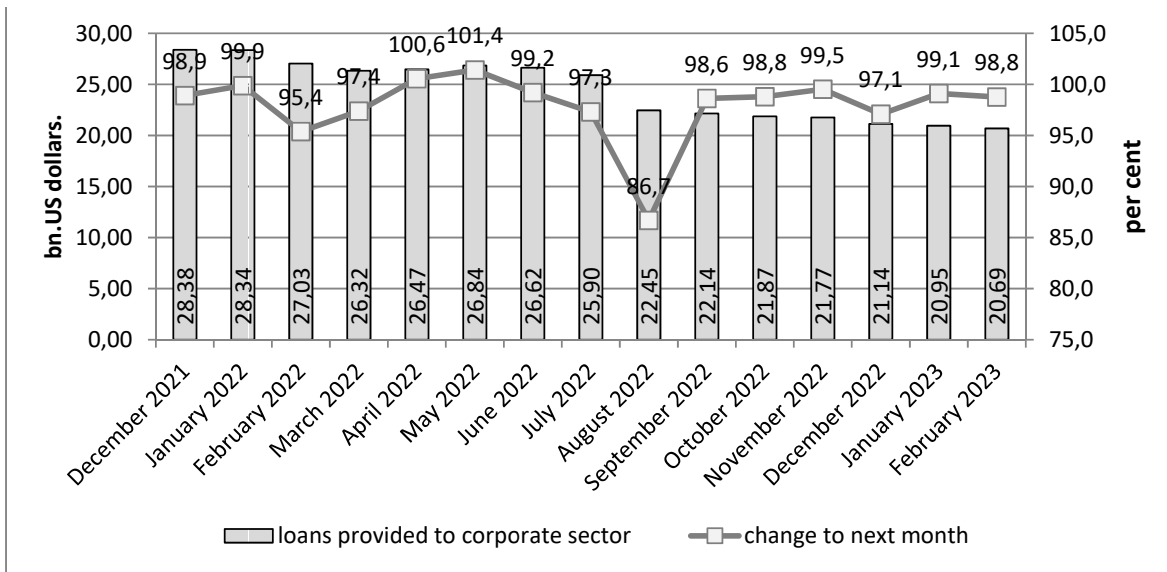
The analysis of trends in the field of banking lending to the corporate sector showed a trend in business lending over the last year - a decrease in the volume of lending to business entities. According to the National Bank of Ukraine (2023) as of 1.01.2023 compared to 01.01.2021 the volume of loans provided by the banking sector to corporate clients decreased by 0.3% and amounted to 772.9 bn. UAH.

As of 1.03.2023 compared to 01.01.2022 the corporate loan portfolio decreased to 756.6 bn. UAH (in 2.3%), and if we consider changes during the war period then for the year (from 01.03.2022 to 01.03.2023) its reduction was 3.4% (National Bank of Ukraine, 2023).

Analysis of the volume of this portfolio on a monthly basis during the last 14 months shows that starting from January to July 2022, the total volume of business loans issued by the banking system increased every month and reached 824.9 bn. UAH at the beginning of August (National Bank of Ukraine, 2023), from August the tendency to decrease it begins.

If we consider the loans provided conditionally in US dollars at the rate of the National Bank of Ukraine (Fig. 1), their volume did not increase during the study period (due to the increase in the exchange rate).

As of the beginning of 2020, the corporate loan portfolio of the Ukrainian banking sector amounted to conditionally \$28.3 bn. By March 2023 it had decreased to \$20.7 bn. (almost 25%) (National Bank of Ukraine, 2023).



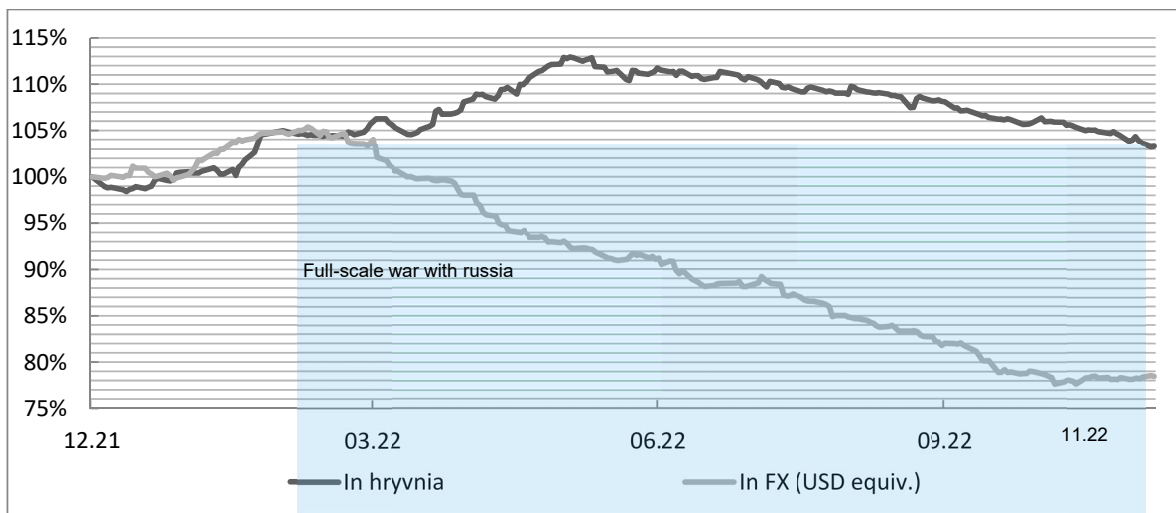
**Fig.1. Dynamics of loans to the corporate sector of the Ukrainian banking system**

Source: based on National Bank of Ukraine (2023).

If the gross UAH corporate loan portfolio decreased by 3% in 2022 than from its peak in June the net UAH corporate loan portfolio decreased by 7% (National Bank of Ukraine, 2023) (Fig. 2.)

The decrease in the net portfolio is determined by two components: suppressed demand and the formation of reserves for incurred and expected credit risks. The suppressed business credit demand is caused by a decrease in enterprises economic activity.

According to the Business Expectations of Ukrainian Enterprises for 2023 (DIA, 2022). The business expects a further reduction in production volumes, the volumes of services provided and turnover, and a reduction in the number of personnel. A significant decrease in export-import operations led to a rapid decline in the currency credit portfolio of legal entities. Due to the great uncertainty there is almost no capital investment hence the demand for long-term credit resources.



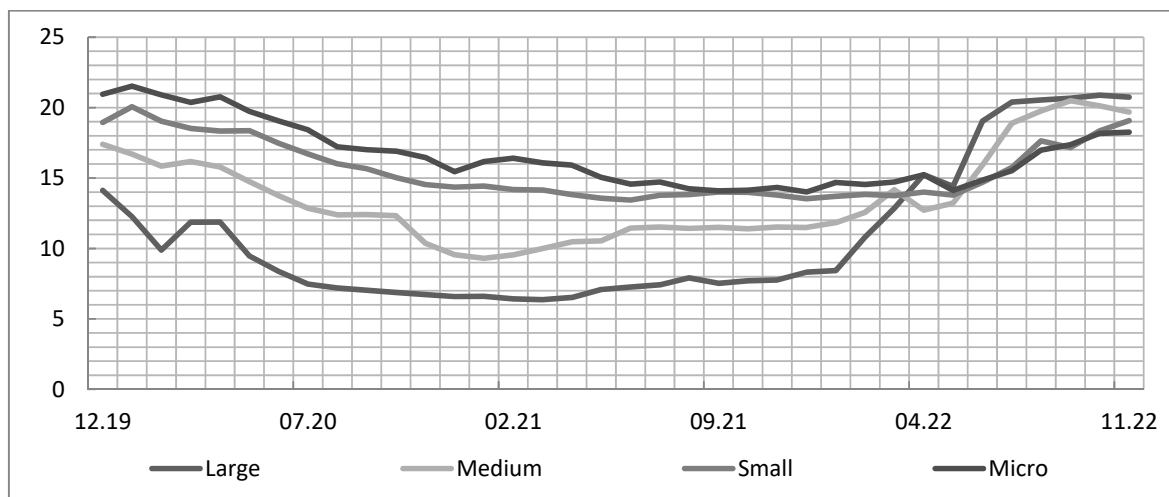
**Fig.2. Net loans to business entities, 12.2021 = 100%.**

Source: based on National Bank of Ukraine (2023).

Along with depressed demand, according to the survey on lending conditions, banks began to increase the rigidity of business loan approval conditions and tighten lending standards. It is easier to get a loan to an existing banking client with a positive history of interaction with a banking institution.

As throughout 2022 financial institutions

reduced the number of approved applications for corporate loans in the 4th quarter, the reasons for the decrease were the reduction in the amount of loans, an increase in interest rates, and stricter collateral requirements. An increase in the risks of corporate lending led to an increase in interest rates on loans (Fig. 3).



**Fig.3. Rates on new UAH loans to non-financial corporations, %.**

*Source: based on DIA (2022).*

Comparing the state of corporate lending in the world over the study period we note that according to Eurozone banks the net demand of companies for loans decreased in the fourth quarter of 2022 (net interest-by 11%, after 13% in the 3rd quarter of 2022). This is the first decline in demand since early 2021. Credit demand decreased in net terms for SMEs (net interest-17%) and large firms (net interest-11%) mainly for long-term loans (net interest-19%) whereas for short-term loans it remained broadly unchanged (net interest-1%). The main reason for the decline in demand was cited by banks as an increase in interest rates for credit (European Central Bank, 2022).

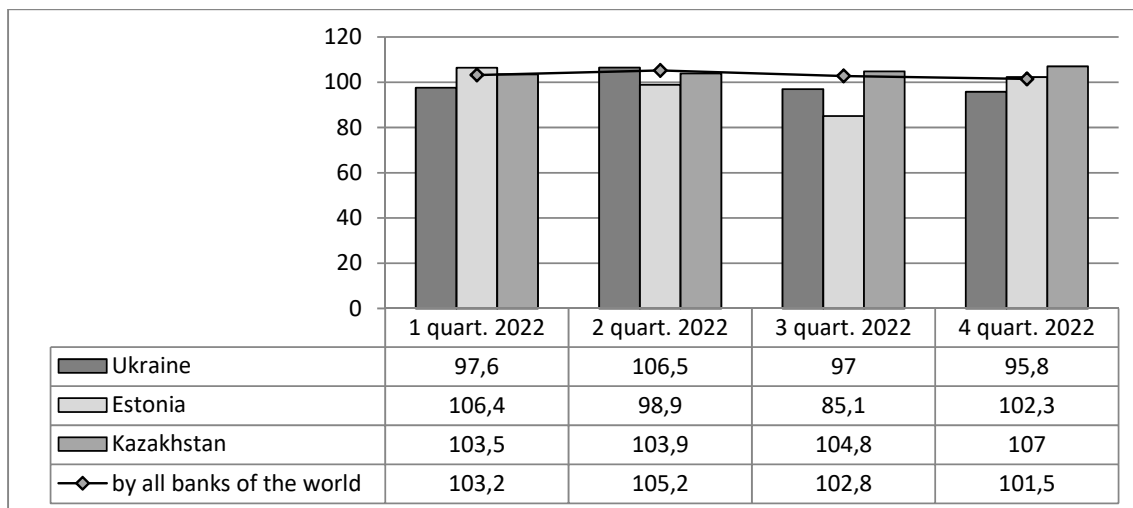
While demand for business loans has been declining in Europe, there has been a lively increase in corporate lending in most Asian countries banks. Thus, in China business lending has been growing for the third year in a row, according to the Central Bank of China, bank loans in business reached a record 21.31 trillion Yuan in 2022 against 19.95 trillion Yuan (People's Bank of China, 2023) in 2021 - the

previous record (Hua, Yao, 2023). According to the State Bank of India, Indian banks have been expanding lending to local corporations at the fastest rate for more than eight years, which indicates the beginning of a new private investment cycle in the fifth largest economy in the world, when growth in large developed economies and China is slowing (People's Bank of China, 2023). Business and industrial loans are in high demand in Singapore serving as important tools for financing investment projects in energy, heavy industry and other sectors (ESFC Investment Group (2023).

For example, let's compare the growth rate of business loans in the whole world for 2022 with the growth rate of these loans in Ukrainian banks and the former countries of the Soviet Union - Estonia (Europe) and Kazakhstan (Asia) (Fig. 4).

JSC CB "Privatbank" remains the largest business creditor for UAH loans (199.3 bn. UAH), although 75% of the portfolio consists of loans provided before 2016; the second is JSC "Oschadbank" (102 bn. UAH).

Also in the TOP-5 are JSC "Raiffeisen Bank Aval" (64.1 billion UAH) "Ukreximbank" (90.5 billion UAH); JSC (National Bank of Ukraine, 2023) (Fig. 5). "Ukrigasbank" (70.8 billion UAH); and JSC

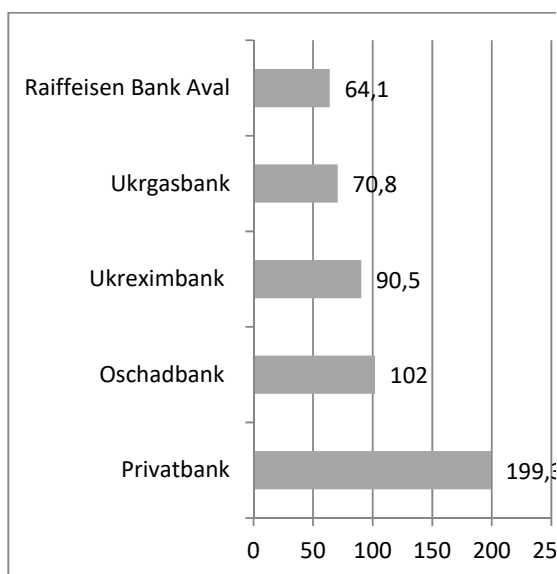


**Fig.4. Quarterly growth rates of corporate bank lending in 2022 by country of the world, %**

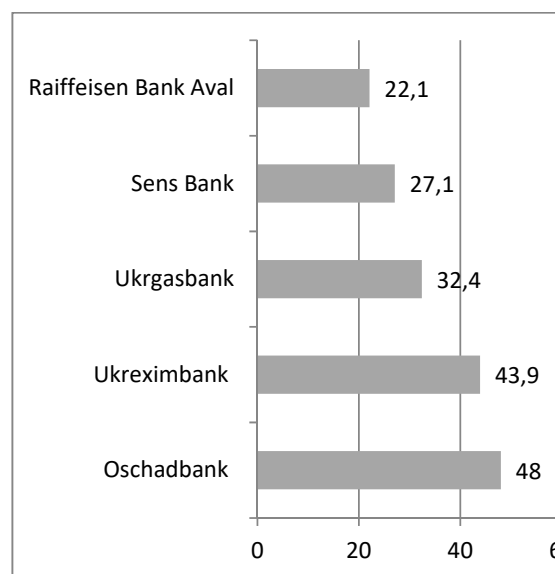
Source: based on EestiPank (2022), Federal Reserve (2022), National Bank of Ukraine (2023), National Bank of Kazakhstan (2022).

As you can see from Fig. 5, on foreign currency loans JSC CB Privatbank is not even among the top five lending leaders. The main creditors are again the following banks with state property: Oschadbank JSC (48.0 bn. UAH).

Also, the TOP-5 includes: JSC Ukreximbank (43.9bn. UAH); JSC "Ukrigasbank" (32.4 bn. UAH). Raiffeisen Bank Aval JSC was in 5th place (22.1 bn. UAH), JSC "Sens Bank" took fourth place (27.1bn. UAH) (National Bank of Ukraine, 2023).



In national currency, bn. UAH



In foreign currency, bn. UAH in the equivalent

**Fig.5. TOP-5 banks by volume of loan portfolio of corporate clients as of 01.01.2023.**

Source: based on National Bank of Ukraine (2023).

So, let's consider the directions of credit funds of banks as leaders in corporate lending (Table 1). The main branches of the economy to which these banks send credit funds are, first of all, the supply of gas and electricity; the agro-industrial complex; and

infrastructure. Table 1 shows that the priority lending sectors of the leading banks are energy, agro-industrial complex, infrastructure, and wholesaling, which are provided with state support.

**Table 1. Sectors of the economy on which the provision of credit by banks-leaders in corporate lending is concentrated.**

Bank		Issued as of 01.01.2023, conditionally in million US dollars at the NBU rate
Privatbank	Retailing	2637.4
	Wholesaling	921.2
	Agriculture	340.2
Ukreximbank	Energy	793.0
	Agro-industrial complex	423.8
	Infrastructure	224.2
	Sales	202.4
	Industry	196.9
Oschadbank	Wholesaling	598.9
	Energy	557.6
	Agriculture	370.5
Ukrigasbank	Energy	350.6
	Wholesaling	252.7
	Agriculture	198.8
Raiffeisen Bank Aval	Agro-industrial complex	648.6
	Wholesaling	365.3
	Food production	243.9

*Source: based on JSC CB Privatbank (2022), Oschadbank JSC(2022), JSC Ukreximbank(2022), JSC Ukrigasbank (2022), Raiffeisen Bank Aval JSC (2022).*

With the aim of providing state support to small and medium-sized business entities in 2020 the Government of Ukraine approved the program "Affordable Loans 5-7-9%," which became the engine of lending to MSMEs as anti-crisis support in quarantine in 2020-2021, although it was originally initiated to stimulate investment lending. During the period of full-scale hostilities in 2022 preferential lending became an important guarantee of business survival in the difficult conditions of martial law. The program establishes general requirements for borrowers the final choice of customers is made by authorized banks. As of early 2023, 45 banks are participating in the program.

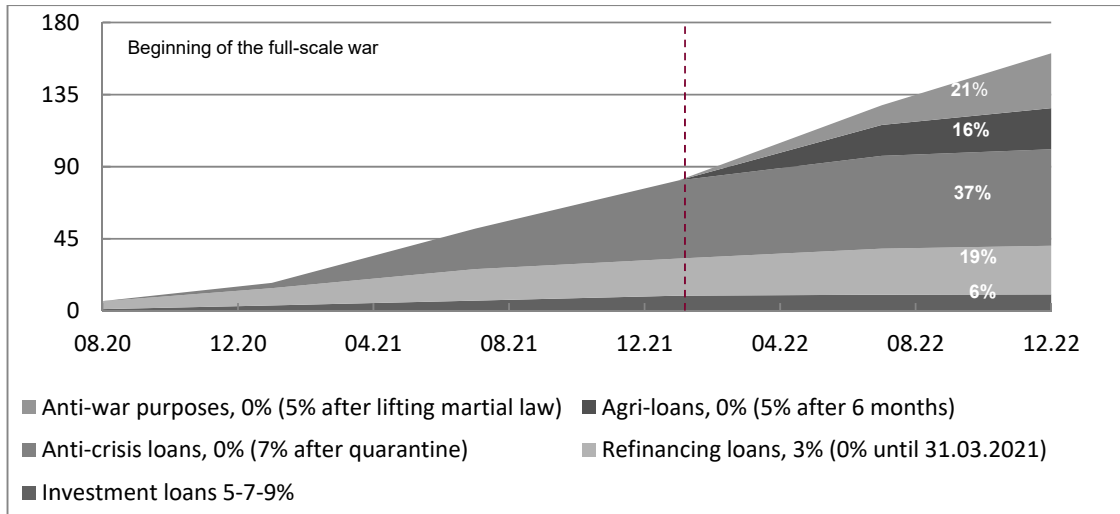
The peculiarity of the program initially was that the entrepreneur could apply to the bank and get a loan at market interest but the share of the bank's interest rate was compensated by the state.

The interest rate level is 5-9% per annum depending on the size of the business and the number of jobs created by the entrepreneur. The most favorable conditions - 5% - the state offered newly created small entrepreneurs with at least two jobs. Current enterprises with registered capital of 20-50 ml. UAH had the opportunity to receive loans at 9% per annum (National Bank of Ukraine, 2023).

In 2022 the program was expanded in accordance with the Government's decision of March 18. The right to receive a loan (maximum 60 ml. UAH) is granted to any business during martial law and a month after its completion at 0%, after that the interest rate increases to 5% (National Bank of Ukraine, 2023). The approved contracts as of the end of 2022 according to the NBU Financial Stability Report are shown in Fig. 6.

Thus, at the beginning of 2023 for the entire period of the study program, 52,852 bank loans were received by the business (the total amount of 165.77 bn. UAH, of which 33,996 loans totaling 66.26 bn. UAH from public sector banks); during the period of martial law 18,030 contracts were concluded (for 76.15 bn. UAH)

including 13,520 contracts (for 39.62 bn. UAH) with public sector banks (Business Development Fund, 2023). The program is implemented by the Business Development Fund (BDF) (Business Development Fund, 2023).

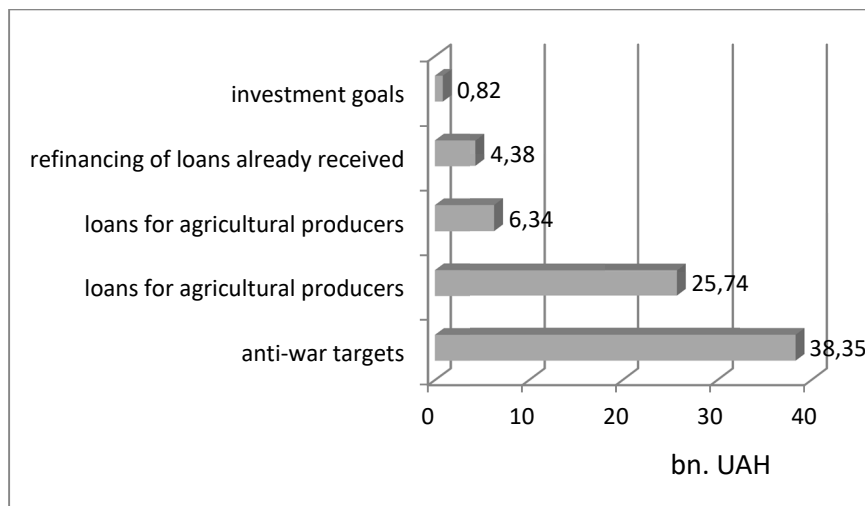


**Fig. 6. Credit agreements concluded under the program "Affordable loans 5-7-9%" by credit lines.**

Source: based on National Bank of Ukraine (2023).

According to the Business Development Fund, through which the program is implemented, as of 27.03.2022, there are 23,999 loan agreements actually valid within the

framework of this program totaling 95.96 bn. UAH. (Business Development Fund, 2023). The distribution of funds by direction is shown in Fig. 7.



**Fig.7. Loans provided by banks under the "Affordable Loans 5-7-9%" program as of 27.03.2023 for purposes.**

Source: based on Business Development Fund (2022).

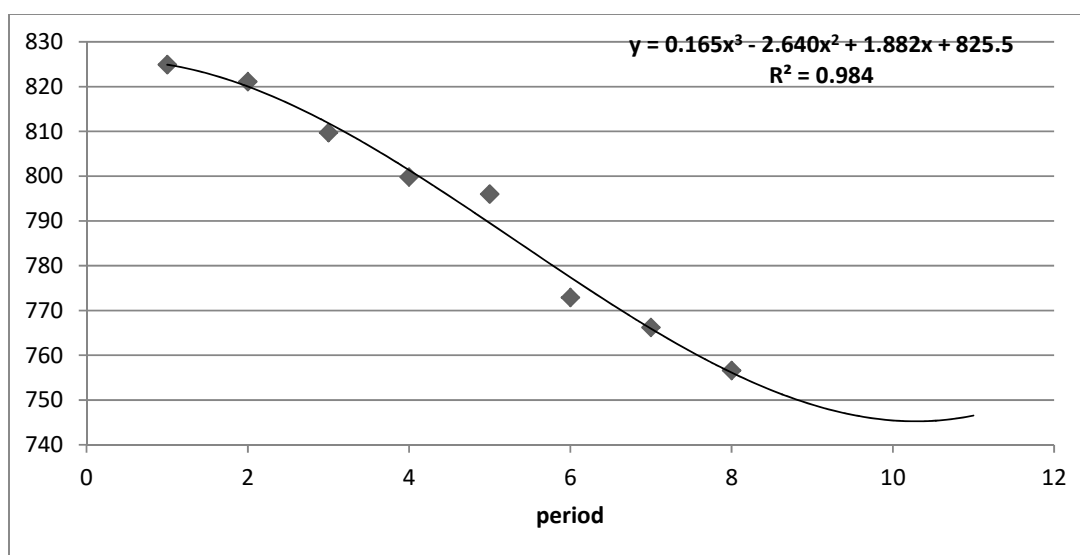


As Fig. 7 shows 40% of credit funds are directed to anti-war purposes 26% - to support agricultural producers. The increase in the provision of concessional loans in 2022 significantly increased the government's interest compensation costs. So over the past year it is planned to pay banks more than 9 bn. UAH. Payment of compensation costs is delayed that restrains banks from continuing the program.

For 2023 the government plans to maintain the key role of this program but determines the need to revise its design due to the emergence of new economic challenges in the context of high wartime risks.

Thus, having analysed the dynamics of the volume of loans provided to business by the Ukrainian banking system over the past year and the factors affecting this volume, we can argue that the conditions for extending the current political and economic situation in the country, corporate lending for the near future tends to decrease.

On the basis of monthly data on the volume of the corporate loan portfolio of banks starting from July 2022 to February 2023, the forecast trend of portfolio volumes for March - May 2023 was constructed (Fig. 8).



**Fig. 8. Constructing a forecast trend of business lending volumes to the Ukrainian banking system for March - May 2023.**

It can be seen from Fig. 8 the trend line of changes in corporate lending by Ukrainian banks by 98.46% is described by the polynomial function of the third degree:

$$y = 0.1652x^3 - 2.6403x^2 + 1.8827x + 825,5 \quad (3)$$

To determine the accuracy of the forecast in Table 2, let's compare the actual data and forecast calculations of the provided loans volume. The forecast can be considered reliable, so the error calculated as the deviation ratio of the forecast over the last period to the actual data is 0.5%.

Thus, subject to the extension of martial law the gross loan portfolio of Ukrainian banks corporate clients may decrease as of the beginning of June 2023 to 746.6 bn. UAH,

which is 3.4% lower than the volume at the beginning of 2023. Taking into account the decrease in the quality of loans and the corresponding increase in reserves we should expect a decrease in net loans at the level of 7%.

To slow the fall in these indicators, taking into account the recommendations of some scientists (Okhrimenko, 2022), we propose for the banking system and the government of the country: to prevent a new crisis of confidence in banks and the banking system; prevent the curtailment of preferential targeted lending programs and improve the mechanism of state subsidies of interest rates on innovative loans and loans to priority sectors of the economy; solve the problem of reducing the cost of funding sources.

**Table 2. Actual and forecast data on the volume of corporate loan portfolio of Ukrainian banks for 2022-2023, bn. UAH.**

Period	Date	Fact	Forecast	Deviation from fact	Period	Date	Fact	Forecast	Deviation from fact
1	July 2022	824.9	824.9	0	7	January 2023	766.2	766.0	0.2
2	August 2022	821.1	820.0	1.1	8	February 2023	756.6	756.2	0.4
3	September 2022	809.7	811.8	-2.1	9	March 2022		749.0	
4	October 2022	799.8	801.4	-1.6	10	April 2022		748.5	
5	November 2022	796	789.6	6.4	11	May 2022		747.6	
6	December 2022	772.9	777.4	-4.5	12	June 2022		745.2	

## 5. Conclusions.

In the conditions of martial law in Ukraine, there is growing uncertainty about the development of the situation, an insufficient number of solvent customers in the country, a decrease in profitability in the market, and the inability in most cases to get a bank loan. According to the study, the volume of the corporate loan portfolio of banks from the beginning of 2022 to July inclusive continued to grow due to the revaluation of foreign currency loans and lending to large international corporations, and from August 2022 to the present, bank lending to businesses in both hryvnia and foreign currency is shrinking. So, if the gross UAH corporate loan portfolio decreased by 3% for 2022, then from its peak in June, the net UAH loan portfolio decreased by 7%.

The decrease in volumes is due not only to the fact that banks are more cautious about lending but also to the fact that not all customers, even if they need it, are ready to take loans at inflated rates.

Nowadays only customers with an impeccable credit reputation are credited, mainly for preferential lending under the program of state support for strategic sectors of the economy. Business expectations for economic growth and banks' expectations regarding the recovery of business entity lending do not give optimistic forecasts for the first half of 2023. The forecast of the gross corporate loan portfolio of banks calculated in the study indicates a further decrease in it for the next three months. Currently, only the cessation of hostilities and the beginning of the process of rebuilding Ukraine can stop this process. To slow down the decline in business lending in modern conditions, it is recommended for the NBU to develop credit policy directions that will not allow a new crisis of confidence in banks and the banking system; the government to develop measures that will not allow the winding down of preferential targeted lending programs; and banks to develop measures to reduce the level of non-performing loans and solve the problem of reducing the cost of financing sources.

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