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Conference materials may be of interest to researchers, teachers, researchers, students of higher educational institutions.

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In the collection, the spelling, punctuation and stylistics that were proposed to the conference participants are preserved as accurately as possible.

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CONTENT

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INVESTMENT ACTIVITIES OF THE ENTERPRISE AND SOURCES OF ITS FINANCING

The features of the formation of investment resources and the main sources of financing of investment activities are determined. The state of investment activity at an agricultural enterprise has been studied and directions for its activation have been proposed. The aim of the article is to analyze the sources of investment resources of the agricultural sector of Ukraine's economy.

Keywords: *financial investments, risk, investment activity, cost of capital*

Investment activity is an important prerequisite for the development of the national economy and increase the level of domestic income. In the context of the development of the commodity orientation of the economy, the intensification of investment activities can provide diversification and deepening of the country's specialization in the world market, which will have a positive effect on the national currency and balance of payments. In the current reality, the main growth point in Ukraine is agriculture, which can potentially provide expanded reproduction of the potential of related industries, especially food processing, both in vertical and horizontal integration. Which will ultimately ensure the comprehensive development of the agricultural sector and reduce the dependence of the national economy on high volatility in grain prices - wheat and corn, which after a period of growth began to decline. In addition, the development of the agricultural sector in the presence of high productivity of quality agro-food products will meet the needs of the population in food in accordance with rational nutrition standards. Only with a full-fledged investment process, which requires appropriate financial support, it is possible to achieve this goal of development of the agricultural sector.

Changes in the stock market can be directly aimed at increasing of the level of protection for investors and other clients of financial institutions; increasing client awareness and financial and legal literacy, as well as improving incentives for using the financial market as a source of long-term investment. The implementation of investment activities by enterprises in the financial market is an alternative way of placing temporarily free financial resources for individuals and organizations.

The formation of investment resources is an important component of the investment and general financial strategy of the enterprise, as well as the initial condition for the implementation of the investment process at all its stages [1].

Investment activity can be carried out at the expense of the investor's own financial resources (profit, depreciation deductions, cash savings of citizens and legal entities), borrowed financial resources of investors (bond loans, bank and budget loans), attracted financial resources of the investor (funds received from the sale of shares, shares and other contributions of citizens and legal entities), as well as budgetary investment allocations [6].

The choice of sources of investment financing makes it possible to calculate the proportions in the structure of certain sources of formation of investment resources. Depending on the type of resources, there are such methods of financing investment activities: self-financing, corporatization, debt financing, financing through subsidies, mixed financing [2].

Own funds of enterprises and organizations remain the main source of financing for capital investments in the Ukrainian economy and its agricultural sector in 2020: their share is 90,65%, while in the national economy – 66,93%. In the studied sector, the share of this source in investment financing remained almost unchanged compared to the previous year (decreased by 0,18 percentage points), while in the national economy it increased (from 65,43% in 2019 to 66,53% or 1,1 percentage points). It ranks second among the sources of financing for capital investments in the agricultural sector in 2020 there are bank loans (and other loans) – 8,61%, which is 0,1 percentage points more than in 2019 (in the national economy, 6,64% is financed by bank loans, which is 4,13 percentage points less than in the previous year). The shares of other sources of investment in the agricultural sector are insignificant: state budget funds – 0,28%, local budget funds – 0.09%, loans from foreign banks – 0,3%, funds from domestic investment companies and funds – 0,06%. In the national economy, these shares are respectively: 8,70%, 10,38%, 2,88%, 1,01%, and also: funds of foreign investors – 0,41%, other sources of financing – 1,42%.

According to the State Statistics Service of Ukraine, investments in the agricultural sector of the economy in 2019 came from 60 countries, which indicates "a slight geographical diversification of countries exporting direct investment to Ukraine" [7]. The main investor in the Ukrainian agricultural sector is Cyprus: as of January 1, 2019, its share in the total amount of foreign direct investment in the studied sector is 32,6%, and as of December 31, 2019 - 39%. In second place in the ranking of major investors is Denmark (11,8% - at the beginning of the year and 9,5 - at the end), in third place - Poland (8,0% and 8,2%, respectively). Unfortunately, in the structure of direct investment it is impossible to determine the share of countries such as Bulgaria, Greece, Jersey, Lithuania, Liechtenstein, Malta, Norway, Bangladesh, Armenia, Hong Kong, Georgia, India, Kazakhstan, Saudi Arabia, Turkey, Singapore, Singapore, Singapore, Singapore Japan, Libya, New Zealand. Data on these countries-investors are not published "in order to ensure compliance with the requirements of the Law of Ukraine" On

State Statistics "on the confidentiality of statistical information" [3]. That is, the structure of foreign direct investment, depending on the geography of sources of investment resources (geographical structure of foreign investors) is dominated by investments from the so-called offshore zones, while the share of investment from developed countries is quite small.

The system for regulating the conditions of investment activity in the enterprise under study is not stable and is adjusted depending on the economic policy of the state in a particular period, the degree of investment activity of business entities, etc. To activate or curb investment demand, an enterprise can use traditional methods, worked out by world practice: fiscal policy, investment promotion, intervention in the securities market [4].

The mission of the researched joint-stock company JSC «Kernel Group» for investors is increasing profits and return on invested capital; existence of a strategy and the ability to implement it; high market positions; management experience and its' credibility; quality of core business processes. It should be noted that the investment activity of the enterprise is affected by fluctuations in prices for raw materials, energy carriers, the high cost of new production lines and equipment compared to sales volume, and the period of time for which such products will be sold, imperfect tax policy. Over the past five years, fixed assets (machinery, equipment, tools and instruments) occupy the largest share in the acquisition of assets of JSC «Kernel Group». JSC «Kernel Group» carries out continuous modernization of production.

As of December 31, 2018, the financial investments of the enterprise are defined as long-term, their value is the value of the acquired shares of other enterprises, shares in the authorized capital of companies. They are accounted for the balance sheet date at their cost. The cost of long-term financial investments that are accounted for using the method of participation in the capital of other enterprises as of December 31, 2018 is 50,572 thousand US dollars, and other financial investments amounted to 1,727 thousand US dollars. Although during 2020, the value of long-term financial investments increased by 1903 thousand US dollars (or 3,76%) compared to 2018; in particular, as of December 31, 2020, there were no other financial investments in the enterprise (Fig. 1).

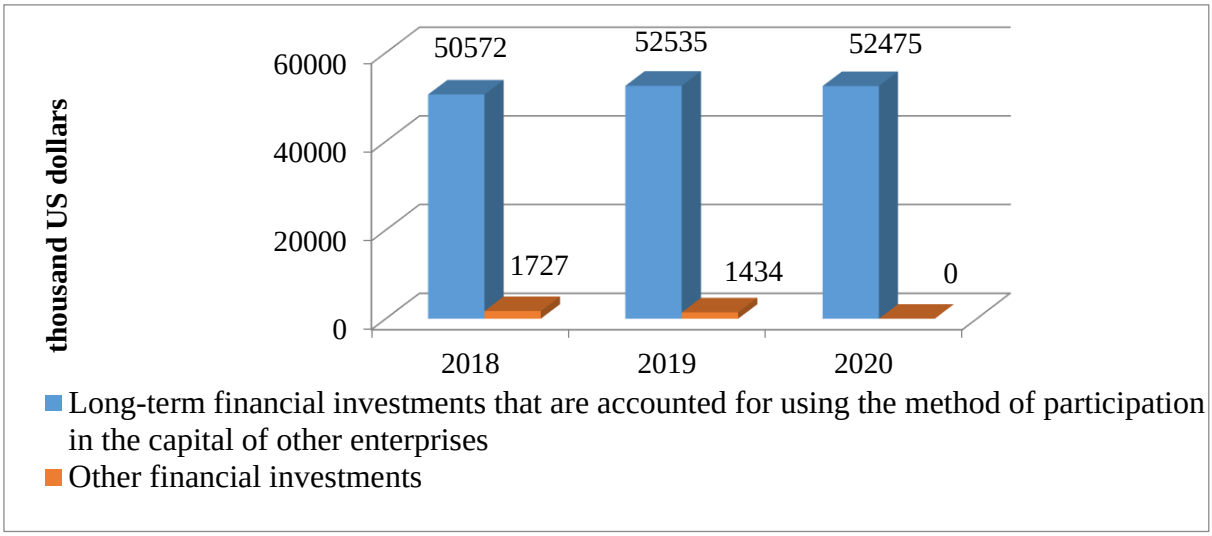

Fig. 1. Dynamics of long-term financial investments during 2018-2020 (thousand US dollars)*

** formed by the author based on [4]*

During the study period 2018-2020 9 thousand US dollars of financial investments and 3306 thousand US dollars of non-current assets were realized. As of December 31, 2019, USD 5 thousand US dollars were received from investment activities. During the study period, 2811 thousand US dollars of financial investments and 18523 thousand US dollars of non-current assets were purchased (table 1).

Table 1

Comparison of the value of realization and acquisitions of funds as a result of investment activities in JSC «Kernel Group» (thousand US dollars)*

Indicator	2018	2019	2020	Deviation, 2019 / 2018		Deviation, 2020 / 2019	
				abs. dev.	%	abs. dev.	%
Realization of financial investments	0	9	0	+9	-	-9	-100,00
Realization of non-current assets	574	2394	338	+1820	+317,07	-2056	-85,88
Acquired financial investments	659	2152	0	+1493	+226,56	-2152	-100,00
Acquired non-current assets	659	12250	5623	+11591	+1758,88	-6627	-54,10

** formed by the author based on [4]*

According to Table 1, during 2020, there was a reduction in the amount of realization of non-current assets by 2,056 thousand US dollars, or by 85,88%, compared to the previous 2019. Also, at the end of the study period, we observe

a rapid decrease in the value of acquired non-current assets by 6627 thousand US dollars or by 54,10%.

As of December 31, 2020, net cash flow from investing activities amounted to USD 5,285 thousand, that is less than the indicator of the previous year on USD 6,710 thousand. or 55,94% (Fig. 2).

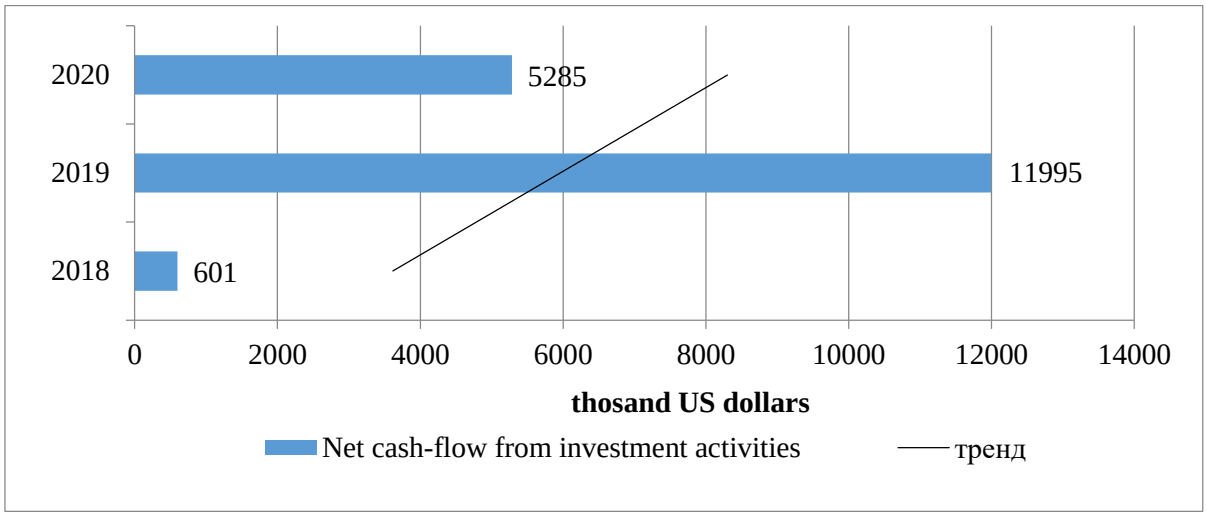

Fig. 2. Dynamics of net cash flow from investment activities in JSC «Kernel Group» during 2018-2020 (thousand US dollars)*

** formed by the author based on [4]*

So, the analysis of the investment activity in JSC "Kernel Group" indicates a favorable investment climate for the enterprise. In total, during 2020, the enterprise received 5285 thousand US dollars. income from investment activities. Compared to the net cash flow from operating and financial activities, the financial result from investing activities as of December 31, 2020 is USD 5,569 thousand or 51,31% less than the profit received from operating activities; also, in comparison with the financial result from financial activities, the net cash flow from investing activities is less by 14,190 thousand US dollars. or by 72,86%.

Intensification of investment activity is not only the main condition for bringing agriculture out of the crisis, but also becomes the most important determining factor in its further development. Today, almost all spheres and branches of the agricultural sector of Ukraine's economy are in dire need of investment, whether it is agriculture, processing industry, stock production industries or rural housing. Therefore, the creation of preconditions for a massive influx of investment in the agricultural sector should be the most important element of the strategy of state agricultural policy at the present stage.

The modern system of stimulating investment activity in the agricultural sector should provide for diversification of methods and tools of tax incentives for modernization and reconstruction of fixed capital of agricultural production and food processing segment of the agricultural sector, improvement of methods of state regulation of investment through adoption and implementation of state investment programs. raw materials. In addition to the above areas for improving

investment activity in the agricultural sector, it is also necessary to clearly define the conditions of ownership, use and disposal of agricultural land and take antitrust measures to end unfair competition in agricultural markets. A promising area for increasing investment in the food processing segment of the agricultural sector is to establish biofuel production on idle sites of the alcohol industry, which will increase investment flows to modernize the industry and strengthen energy self-sufficiency of Ukraine's economic complex.

Thus, in recent years, the structure of financial sources of investment in the agricultural sector of the state has remained virtually unchanged. Traditionally, the largest share of investment capital is made up of own funds of agricultural enterprises, within 91%, bank loans – 8,5% of investments, 0,4% - through government programs to support the development of the industry and 0,1% of local budgets. Today, the growth of investment in agribusiness is one of the main funds that will increase production, update technical and technological bases, ensure sustainable development of enterprises. According to the calculations of scientists of the Institute of Agrarian Economics in the period 2016-2018, one hryvnia of investment in fixed and working capital of agricultural enterprises brought an average of 0,295 UAH increase in pre-tax profit per year. That is, investments in the agricultural sector of the economy pay off fairly quickly, in 3-4 years. Unfortunately, in the face of increased risks, national investors prefer short investments. Over the last three years, about UAH 2,67 of short-term investments accounted for UAH 1 of capital investments. At the same time, the perceptions of foreign investors about the return on their capital in the agricultural sector of Ukraine are pessimistic.

In our opinion, the main obstacle to innovation and investment development of the agricultural sector of Ukraine is the lack of a systematic approach to ensuring innovation at the state level. The investment policy of the state was not aimed at overcoming the crisis and did not take into account the real state of productive forces in the agricultural sector. Therefore, the implementation of effective innovation and investment activities in agricultural enterprises is possible only with the help of state support, which should be carried out through a system of economic mechanisms and levers.

The main directions of state support for the development of investment activities in the agricultural sector should be: providing subsidies (grants) to economic entities for the implementation of innovative production processes, implementation of grant projects related to agricultural and rural development, providing conditions for improving the investment climate providing tax benefits, financial guarantees, development of public-private partnership in the implementation of investment and innovation projects in the field of environmental protection, preservation of soil fertility, prevention of negative environmental effects, stimulating the development of organic farming, formation of investment funds for high-performance research breeds of agricultural plants without genetically modified potential, etc.

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VOLATILITY OF YIELD FOR DG BONDS ON THE UKRAINIAN FINANCIAL MARKET

Introduction. The Government of Ukraine uses various sources of loans to cover the budget deficit. These are bonds of the domestic government loan (DG bonds), bonds of the foreign government loan (FG bonds), loans from the National Bank of Ukraine, loans from the international financial organizations (NEFCO, IBRD, EIB, IMF, EBRD, *etc.),* loans from foreign governments (UK, Germany, Poland, Russia, USA, France, Japan, *etc.).* The DG bonds *is the largest in the structure of the* government *debt of Ukraine.* The DG bonds *share in the debt structure ranged from 40 to 47% in the last decade [1]. The problem of formation of yield for DG bonds is relevant because of its importance of DG bonds in financing the budget deficit.*

Analysis of recent researches and publications. Many studies investigate the issue of yield of government bonds. Heryan, Ziegelbauer investigate volatility of yields of government bonds among GIIPS countries during the sovereign debt crisis in the Euro Area [2]. Trinh, Nguyen, Ngo investigate of Vietnam government bond yield volatility using the GARCH approach [3]. Volatility spillover effect of government bonds and stock market are investigated M. Faniband and T. Faniband [4]. Umar, Manel, Riaz, Gubareva use a TVP-VAR approach to

investigate the dynamic spillovers of risk and volatility of US bonds during the Covid-19 pandemic [5]. Regarding the problems of volatility of pricing on the Ukrainian financial market, there is a scientific discussion, which is reflected in the writings of Ukrainian scientists (Burtniak and Suduk [6], Liubkina [7], Yastremskyi [8]).

Purpose of the study is to investigate the volatility of yield for DG bonds on the Ukrainian financial market.

Materials and methods of research. Our empirical analysis employs a sample consisting of yearly data on DG bonds which are denominated in UAH, USD, EUR for the period from 2011 to 2021. In this study, the data comprise DG bonds with a 1-year, 1-3-years, 3-5-years and more than 5-year maturity range. The DG bonds yield available in the official websites of the National Bank of Ukraine and the Ministry of Finance of Ukraine.

Volatility is a statistical measure of the dispersion of returns for a given security or market index. Volatility is often measured as either the standard deviation (S) or variance between returns from that same security or market index [9]. One measure of the relative volatility of a particular stock to the market is its beta (β). A beta approximates the overall volatility of a security's returns against the returns of a relevant benchmark (usually the S&P 500 is used) [9]. In this study, A beta approximates the overall volatility of the DG bonds yield against the returns of a relevant benchmark (PFTS Index or UX Index).

Results of the research and their discussion. The Government of Ukraine issued DG bonds during all the studied years in UAH and USD. In 2012-2014 and 2016-2021, EUR DG bonds were issued. The average annual UAH DG bonds yield fluctuated from 9.16% to 17.79%; the average annual USD DG bonds yield fluctuated from 3.38% to 8.92%; the average annual EUR DG bonds yield fluctuated from 2.27% to 7.50%. We investigated the dynamics of the average annual DG bonds (figure 1).

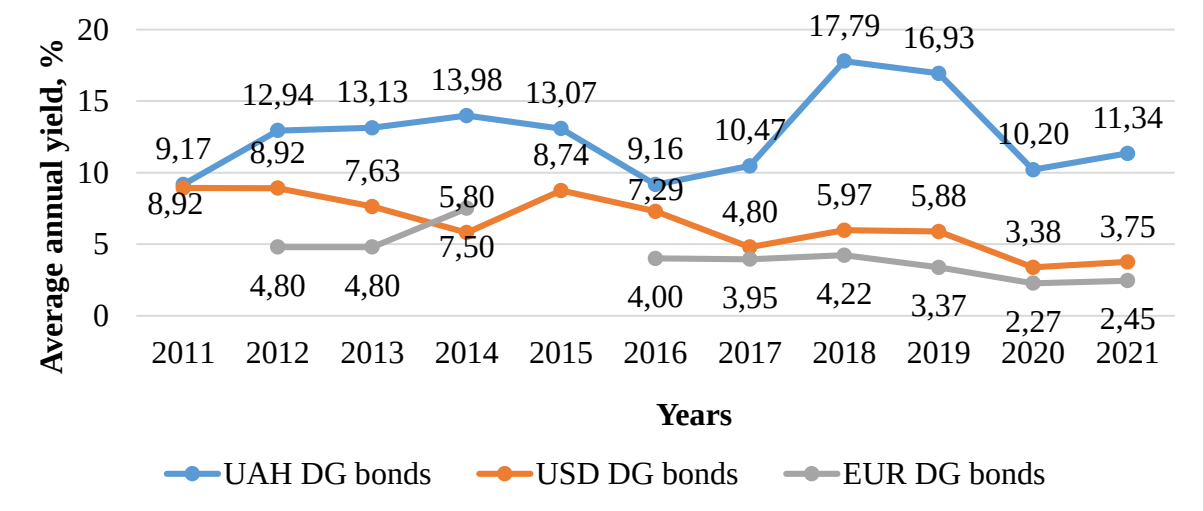

Fig. 1. The Ukrainian DG bonds yield in 2011-2021

There is no correlation between UAH DG bonds yield and USD DG bonds/EUR DG bonds. Therefore, the dynamics of the average annual

UAH DG bonds yield were determined as a wave-like: 2011-2014 was increase of UAH DG bonds yield, 2014-2016 was decrease of UAH DG bonds yield, 2017-2018 was increase of UAH DG bonds yield, 2019-2020 was decrease of UAH DG bonds yield. Also the dynamics of the average annual USD DG bonds yield were determined as a wave-like.

Regression analysis of the average annual Ukrainian DG bonds yield ($Y_{UAH\ DG\ bonds}$, $Y_{USD\ DG\ bonds}$) and coefficient of determination (R^2 = 0,76) indicate the reliability of polynomial models (formula 1, formula 2).

$$Y_{UAH\ DG\ bonds} = 0{,}005x^6 - 0{,}16x^5 + 2{,}17x^4 - 13{,}92x^3 + 43{,}16x^2 - 57{,}89x + 36{,}10 \quad (1)$$

$$Y_{USD\ DG\ bonds} = -0{,}0003x^6 + 0{,}01x^5 - 0{,}18x^4 + 1{,}25x^3 - 4{,}28x^2 + 5{,}93x + 6{,}30 \quad (2)$$

Standard deviation of the average annual UAH DG bonds yield was 2.89. This is the maximum value of the average annual DG bonds yield by type of currency. Standard deviation of the average annual USD DG bonds yield was 2.00 and the average annual EUR DG bonds yield was 1.55. We have established a relationship between the level of volatility and the currency of the DG bonds. A higher level volatility of the average annual DG bonds bond is inherent in currencies with a higher level volatility of exchange rate.

The average annual UAH DG bonds yield with a 1 year maturity fluctuated from 7.02% to 18.40% (standard deviation was 4.02). The average annual UAH DG bonds yield with 1-3 years maturity fluctuated from 9.32% to 17.85% (standard deviation was 3.22).

Table 1

The Ukrainian DG bonds yield in 2011-2021 by maturity and currency, %

Years	UAH DG bonds yield, %	including by maturity				USD DG bonds yield, %	including by maturity		
		to 1 year	from 1 to 3 years	from 3 to 5 years	more than 5 years		to 1 year	from 1 to 3 years	from 3 to 5 years
2011	9.17	7.93	9.57	8.75	9.30	8.92	8.92		
2012	12.94	13.55	12.22	14.29	14.22	8.92	9.30	8.87	
2013	13.13	7.02	9.32	14.26	14.19	7.63	5.18	7.90	7.50
2014	13.98	13.11	16.75	13.57	15.50	5.80	5.78	8.10	
2015	13.07	17.00	16.66			8.74	8.74		
2016	9.16	16.64	17.85	16.74	6.50	7.29		7.29	
2017	10.47	15.23	14.89	15.11		4.80	5.00	4.74	
2018	17.79	17.92	16.18	15.87		5.97	5.90	6.13	
2019	16.93	18.40	16.73	13.11	15.31	5.88	6.50	5.16	
2020	10.20	10.05	10.62	10.98	9.80	3.38	3.34	3.54	
2021	11.34	10.68	11.75	12.32	12.95	3.75	3.67	3.81	

The average annual UAH DG bonds yield with 3-5 years maturity fluctuated from 8.75% to 16.74% (standard deviation was 2.37). This is the minimum value of the standard deviation of the average annual UAH DG bonds. The average annual UAH DG bonds yield volatility of medium-term bonds was the lowest.

The average annual UAH DG bonds yield with more 5 years maturity fluctuated from 6.50% to 15.50% (standard deviation was 3.29). The Ukrainian DG bonds yield in 2011-2021 by maturity and currency are given in table 1.

In such a way, volatility of yield for UAH DG bonds on the Ukrainian financial market was the maximum in the short-term period. Volatility of yield for UAH DG bonds was the minimum in the medium-term period. In the long-term period, volatility of UAH DG bonds yield increased compared to the medium-term period.

The structure of Ukrainian public debt is formed in such a way that long-term borrowing prevails. The share of long-term UAH DG bonds was friom 69.5% to 56.7%. Indicators of volatility of yield for UAH DG bonds in the long term are informative for investors.

We made the same conclusions about volatility of yield for USD DG bonds: volatility of yield for USD DG bonds on the Ukrainian financial market was the maximum in the short-term period. Volatility of yield for USD DG bonds was the minimum in the medium-term period.

Table 2

Correlation statistic

	UAH DG bonds yield, %	PFTS Index	Consumer price indices, %	Government deficit, % of expenditures	Public debt, billion USD	Deflators of gross domestic product, %
UAH DG bonds yield, %	1,0000					
PFTS Index	0,2641	1,0000				
Consumer price indices, %	0,0008	-0,4327	1,0000			
Government deficit, % of expenditures	-0,0351	0,0215	-0,4364	1,0000		
Public debt, billion USD	0,1469	0,4315	-0,1131	0,2154	1,0000	
Deflators of gross domestic product, %	-0,1548	-0,2746	0,9143	-0,5519	0,0333	1,0000

Further, it requires research on the relationship between volatility of yield for DG bonds and macrofinancial indicators (PFTS Index, government deficit, public debt) and macroeconomic indicators (consumer price indices, deflators of gross domestic product). Correlation statistic (table 2) proves the absence of a

connection between yield for DG bonds and macrofinancial indicators, macroeconomic indicators.

Conclusions and future perspectives of the study. The DG bonds *is the largest in the structure of the* government *debt of Ukraine.* The Government of Ukraine issued DG bonds during all the studied years in UAH, USD and EUR. The average annual UAH DG bonds yield fluctuated from 9.16% to 17.79%; the average annual USD DG bonds yield fluctuated from 3.38% to 8.92%; the average annual EUR DG bonds yield fluctuated from 2.27% to 7.50%. Standard deviation of the average annual UAH DG bonds yield was 2.89. This is the maximum value of the average annual DG bonds yield by type of currency. Volatility of yield for UAH DG bonds on the Ukrainian financial market was the maximum in the short-term period. But the long-term DG bonds prevails. Correlation statistic proves the absence of a connection between yield for DG bonds and macrofinancial/macroeconomic indicators.

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MANAGEMENT OF THE CREDITWORTHINESS OF BUSSENESES IN CONDITIONAL OF MARTIAL LAW

Introduction. In modern economics, especially in conditions of martial law there is a range of definitions for Creditworthiness. Also, in the scientific literature, there are a lot of factors definitions that determine and influence the Creditworthiness of an enterprise, but these factors also need to be supplemented and modified. In modern economic conditions, ensuring a high level of creditworthiness is one of the priorities of ensuring sustainable development and improving their position in the market environment. Creditworthiness - one of the major descriptions of an enterprise. Given the great practical significance of this economic category, it is very important to formulate its unambiguous scientific content. Therefore, there is a need to investigate in more detail the content of this economic category, to determine the drivers of influence on this economic category, to provide a qualitative definition of Creditworthiness. Managing the level of creditworthiness of the business entity in the current conditions of the market is one of the main areas of management. In the event that there is a rational management of creditworthiness, the business entity can very quickly decide on the conditions dictated by the competition and has the opportunity in the specified time and in full to receive and repay the loan.

The purpose of credit management is to ensure a certain level of creditworthiness at which the company would be able to meet its obligations to repay the principal amount of debt and interest thereon in the current and future periods in conditions of martial law.

Analysis of recent researches and publications. The creditworthiness of an enterprise plays a key role, as it depends on the company's ability to meet the conditions of potential creditors. Among the well-known authors` works that have made a significant contribution to the coverage of the essence of the creditworthiness management of the enterprise the following scientists should be mentioned: V. Borisova, E. Brigham, L. Vdovenko, L. Gapenski, I. Davydovych, P. Demyanenko, O. Donets, V. Lagutin, L. Lakhtionova, I. Lomachynska, O. Oliynyk, A. Poezdnik, P. Rose, M. Savluk, J. Sinki, O. Tereshchenko and many other Ukrainian and foreign scientists [1]. It should be noted that in the modern economic literature and regulations there are different approaches to the interpretation of the essence of the concept of "creditworthiness". According to authors` works, we can conclude that the existing approaches to defining the essence of the concept of "creditworthiness" should be divided into two blocks:

1) creditworthiness as the ability to fully and on time to pay their debts;

2) creditworthiness is the financial condition of the enterprise, which allows you to get a loan and repay it on time.

However, the problem of effective credit management of the enterprise remains relevant in modern conditions of martial law. The reason for this is the dynamic development of the economy, globalization, the unstable internal economic environment of the state, and so on. These and other factors are constantly changing and cause the need to improve the methodology of credit management of the enterprise.

Materials and methods of research. The results are based on modern scientific research and financial data for the implementation process of creditworthiness. System analysis is used for subject research understanding, i.e. what is the creditworthiness and how it can influence existing business models of an enterprise; what is the role of creditworthiness of the financial subsystem of an industrial enterprise under nowadays circumstances of martial law. Synthesis is used to make a number of conclusions aimed to build a clear concept of the cause-and-effect relationships between creditworthiness and new business models of martial law. Causal analysis is used for the network created to capture the links and the influence of new business model implementation. Using analysis, a logical sequence of factors and their interrelationships was established within the entire process of enterprise management for the implementation process of the creditworthiness of martial law. Identified elements indicate the directions that need to be implemented at the enterprise for a successful implementation process.

Results of the research and their discussion. In the conditions of market transformations, especially rebuilding after the war, the effective activity of an economic entity is impossible without a sufficient amount of financial resources and, accordingly, the attraction of various loans. Borrowing capital helps to increase the efficiency of economic activity of the enterprise, accelerate the movement of its financial and material resources, increase the efficiency of capital use, reduce the payback period of investment, expand the scope and scope of activities, the formation of various trust funds, thereby increasing market value. Before approving a loan to a borrower and concluding a loan agreement, the financial institution must make sure that the loan will be repaid. After all, following the principles of lending, the borrower must pay interest for its use; the loan must be secured; the entire loan amount must be repaid to the lender. Thus, the assessment of creditworthiness is important, both for the lender, because it protects him from lending to bankrupt or financially unstable companies, and for the borrower, because it allows imagining his ability to pay off their debts on time.

Businesses are currently operating in adverse economic conditions. Fixed exchange rates, direct legislative regulation of financial activities, and instability of the economic and political environment significantly complicate the activities of enterprises, negatively affecting their creditworthiness. To stay in the market and develop further under such conditions, companies need to build a credit management strategy in conditional of martial law.

Creditworthiness is a comprehensive evaluation of the ability and trustworthiness of various economic organizations to fulfill commitments. Managing the creditworthiness of the enterprise in modern conditions is one of the main areas of its management. Effective implementation of this process allows the company to quickly solve problems in a competitive environment and be able to timely and in the required amount to obtain and repay loans. All this increases the value of the enterprise itself, thus ensuring its investment attractiveness.

The borrower's creditworthiness is assessed based on a system of indicators that reflect the location and sources of working capital, the results of economic and financial activities of the borrower. The choice of indicators depends on the type of economy, the degree of development of market relations, the peculiarities of the balance sheet and other forms of reporting of borrowers, their industry characteristics, and forms of ownership.

The integral indicator of financial position of a legal entity is calculated using the baggage factor discriminate model [2]:

$$Z = a0 + a1K1 + a2K2 + a3K3 + a4K4 + a5K5 + anKn \quad (1)$$

Where Z is an integral index;

K1, K2 ... Kp - financial coefficients determined on the basis of financial accounting data of the renegade company - legal entity;

a1, a2... ap - parameters, which are determined taking into account the financial coefficients value and digit capacity.

a0 is a neutral term of the discriminant model whose values are updated by the National Bank of Ukraine on a quarterly basis.

In peaceful conditions financial coefficients are determined on the basis of financial statements data for the last reporting period. The regulation provides for eighteen calculation models of the integral indicator among small and medium enterprises as well as for large and medium enterprises and differentiation of the models by nine groups of economic activities. The basic idea of the ranking models is to ensure sufficient accuracy of credit risk assessments. The basic list of financial coefficients that are included into the integral assessment model has one hundred and fifty indicators characterizing all main positions of the financial position of the company. These include: capital structure, profitability and profitability, liquidity and solvency, negotiability. Methodological approach requires taking into account different indicators for calculating the profitability (EBIT, EBITDA, net income), which in combination with different calculation bases (assets, invested equity) provides an insignificant level of correlation of these coefficients. This also applies to the turnover and liquidity ratios [2].

The analysis of this methodology enables us to determine the creditworthiness of legal entities, namely:

- determination of the list of economic indicators for each type of economic activity;
- consideration of sectoral specificity of economic entities;
- determination of the rating class of the company according to its size (large, medium or small).

Along with advantages, which include simple calculations, availability of analytical information, high accuracy and objectivity of the results obtained, the use of methods of assessing the creditworthiness of the positivity's has several disadvantages:

- limitation exclusively to financial indicators and underestimation of the role of quality determinants of creditworthiness and terms of lending;
- lack of specificity in selecting a system of benchmark indicators;
- lack of other criteria for assessing the positron's ability to fulfill its obligations including repayment of the loan to the bank other than the actual performance of the positron for the past period;
- stability of calculated ratios disclosing current position of the insurer at the time of loan approval. - Lack of information on the dynamics of the specified performance indicators of the company, which increases the risk of lending to the borrower [3].

Features of credit service during martial law of Ukraine № 2120-IX "On amendments to the tax code of Ukraine and other legislative acts of Ukraine on the validity of martial law" changed a number of rules of operation of banks and non-bank financial institutions, including those providing lending services [4].

The purpose of these changes is to alleviate the situation for Ukrainian borrowers during the war and for the first time in the postwar economic recovery. After all, not all borrowers in the current environment are able to service loans on time. Key changes in credit service:

- during the period of martial law and within 30 days after the date of its termination or cancellation, the consumer will not be liable to the lender in case of delay in fulfillment of obligations under the consumer loan;
- in case of such delay, the consumer is released, in particular, from the obligation to pay the lender penalties (fines, penalties) and other payments, the payment of which is provided by the consumer loan agreement for delay in performance (default, partial performance) by the consumer;
- penalty (fine, penalty) and other payments, the payment of which is provided by the consumer loan agreement, accrued inclusively from February 24, 2022 for delay in performance under such agreement, are subject to write-off;
- in case of non-fulfillment of obligations under the consumer loan agreement, it is prohibited to increase the interest rate for the use of the loan, except in cases when the establishment of a variable interest rate is provided by the loan agreement or the consumer loan agreement;
- there is no abolition of interest for the use of credit funds - such accrual is legal on the part of the lender.

The new rules are not debt forgiveness; it is a credit vacation - a deferral of payments on the body of the loan and interest during martial law in the country. That is, during the holidays, the borrower does not pay on the loan, but after their completion, you fully return to your obligations. If businesses have the opportunity to pay on the loan, fulfill your obligations in the usual way.

Conclusions and future perspectives of the study.

Credit vacations help to get out of a difficult situation by temporarily relieving the financial burden without violating the obligations to creditors. Penalties and penalties for non-performance or incomplete performance of the loan agreement are not applied during the credit holidays. Credit history does not deteriorate, which means that non-payment on the loan during the credit holidays will not be an obstacle to obtaining loans in the future.

The full extent of the economic losses from Russia's full-scale invasion of Ukraine will mainly depend on the duration of the hostilities. Continued structural reforms, wide international support and Ukraine's integration into the European Union will pave the way for the country's rapid recovery. Borrowing capital helps to increase the efficiency of economic activity of the enterprise, accelerate the movement of its financial and material resources, increase the efficiency of capital use, reduce the payback period of investment, and expand the scope and scope of activities, the formation of various trust funds, thereby increasing market value.

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DIRECTIONS OF RECOVERY OF UKRAINE'S ECONOMY

Introduction. The strategic task of achieving the recovery of the Ukrainian economy under the condition of the recovery of GDP growth rates and other macroeconomic indicators is possible only under the conditions of the recovery of investment activity of all business entities. The direct interest of the

business environment to restore and increase the scope of its activities, to expand the production base on a new technological basis depends primarily on the cessation of hostilities on the territory of Ukraine. However, even in such difficult conditions, the business environment continues to look for ways to restore business.

Analysis of recent researches and publications.

The issue of economic development in an unstable external environment is considered by many modern researchers. For example, in the monograph of Geits V.M. "Instability and economic growth" summarizes the issue of ensuring development under conditions of instability. Macro- and microeconomic models of enterprise restructuring are considered in the work, as well as the policy of expanding and restoring the activity of the domestic market, the state policy of innovative development, instruments of monetary policy implementation, which are considered as factors of direct influence on economic growth under conditions of instability [1].

V.G. Fedorenko, I.M. Hryshchenko, T.E. Voronkovo in the work "Investing in Ukraine in conditions of globalization" [2] focused their research on aspects of the state regulating the investment and innovation activities of Ukrainian economic entities, creating a favorable investment climate for attracting domestic and foreign investors, and real and financial development.

Directions and ways of intensifying the investment process in Ukraine are studied in the work of T. V. Maiorova, M. I. Dyba. Special attention is paid to the issues of investment capital formation by enterprises - the use of profit, depreciation deductions, bank and tax investment credit [3].

The work of N. Yu. Bryukhovetska, I.P. Buleeva is devoted to the justification of the paradigm of the investment activity of enterprises in the conditions of the narrowing of the domestic market, shortage of material and financial resources, insufficient competitiveness of domestic industrial enterprises, improvement of the mechanism of activation of their investment activity, in particular on the basis of project financing schemes, inclusion in global chains of value creation. «Investment activity of enterprises with production of products with high added value in the conditions of limited markets paradigm and mechanisms of providing» [4].

Purpose. Determination of prerequisites and reserves for increasing investment activity of economic entities of Ukraine, means of ensuring it in conditions of negative influence of external environmental factors.

Materials and methods of research. To achieve the goal, general scientific methods were used: methods of logical generalization, methods of formalization, synthesis and analysis, induction, analogies, etc.

Results of the research and their discussion. Obtaining the status of a candidate for the EU by Ukraine requires reforming the economic platform in order to ensure high levels of quality of life indicators, inclusion in global financial and material flows. Fulfillment of these tasks can be ensured only under the conditions of significant intensification of investment activities of all

participants of economic interaction. The main goal in the direction of improving the investment climate of the country as a whole is real motivation and support from the state for the investment initiative of business entities.

Therefore, the state faces an acute issue of restoring the investment activity of business entities, determining effective means of its stimulation, ensuring real interaction of the financial and non-financial sectors of the economy.

Economic motives in general are universal for any enterprise and its type of activity, as they reflect the action of objective economic laws, although some specifics of the content may cause their expansion or narrowing.

The understanding of investment activity as an indicator of the actual intensity of capital inflow and the real development of investment activity in the form of investments in fixed capital is proposed by L. Safonova [5].

Contrary to the canons of the formation of a positive business climate in Ukraine in the pre-war period, there were signs of the destruction of the industrial and energy complex, there was an almost critical level of wear and tear of infrastructure elements, lack of attention to the main sectors of the economy, the importance of which in the crisis and post-crisis period is difficult to overestimate. Industry has lost its role as a driver of growth. The structure of the industrial sector was determined by export specialization: raw and low-tech products with a low level of added value prevailed. The logical consequence was the low level of labor productivity and the general inefficiency of most economic institutions.

In such types of economy as the Ukrainian one, ensuring the sustainable economic development of enterprises is possible only under the condition of intensive investment in the renewal of fixed assets.

The traditional source of investment resources of enterprises in Ukraine is their own financial resources - retained earnings of the enterprise, accumulated depreciation deductions, income from the sale of part of fixed assets that are not used, etc. However, in the current economic conditions of financing investments, these sources are not only extremely limited, but in many cases simply absent.

It was the insufficient amount of own financial resources and the deterioration of the conditions of access to external sources of investment financing for most enterprises of the industrial sector that caused the slowing down and even stopping of the processes of technological renewal of production, which increased the intensity of the aging of production fixed assets.

Signs of the recovery of economic growth are traditionally an increase in the volume of investment demand, hence the level of investment activity of business entities. At the same time, the level of the interest rate on the financial market begins to gravitate to low values, which creates a favorable situation for the activation of the processes of production activity, the formation of income and savings, the accumulation of capital and its inclusion in the investment process, although at the same time the tendency to reduce the marginal efficiency of investments is provoked, which means and a decrease in the propensity to save, despite the growth of their absolute size in this phase of the economic cycle. This

contributes to the investment market achieving a state of equilibrium in terms of qualitatively and quantitatively other parameters of functioning.

In periods of economic decline, theoretically and in reality, the processes develop in the opposite way: the growth of savings leads to a slowdown in investment activity, since the decrease in income and the inertia of the growth of savings reduces current consumption, narrows the product market, and discourages the investment activity of producers. Moreover, other things being equal, the increase in savings during this period leads to a reduction in investment, which means a slowdown in the growth of incomes, and further - savings due to the loss of their main source.

The effect of the mechanism of mutual influence of the subject components of the cycle is a decrease in the level of investment activity of enterprises.

Since 2008, there has been a decrease in investment activity in Ukraine, which is still observed due to the presence of problems mainly in the field of financial support for investment activities, which causes the blocking of the technological development of the country's production complex. A decrease in the rate of renewal of fixed capital against the background of a sharp curtailment of investment activity in Ukraine as a result of the global financial and economic crisis engulfing the economy threatens a long-term freezing of reproductive processes, as well as the formation of development potential, strategic movement according to the standards of technological equality and standards of high solvency [6].

The investment activity of investors in Ukraine is largely restrained by the adverse effect of such internal and external factors as:

- underdevelopment of the institutional base of business, low level of efficiency of commodity markets, deformation of their competitive model, inhibition of the development of entrepreneurship as such;
- fiscal space imbalance (increased tax burden, complexity of the tax payment administration system);
- the imperfection of the mechanisms for the protection of property rights, the implementation of the regulatory policy of the state, the instability of the financial sector in relation to political and conjunctural influences;
- high level of corruption in all spheres of economic activity, instability of the judicial system.

During a crisis, against the background of deteriorating financial results, growing uncertainty of the operating environment, business naturally almost suspends investment activities and other strategic efforts, choosing a survival policy, minimizing expenses for urgent needs.

According to the experience of organizing the investment process in countries with a developed or transitive economy, its success is largely determined by the effectiveness of state regulation of the economic system as a whole, which is ensured, at least, by balanced tax policy, the availability of state financial support for business entities and targeted stimulation of the development of priority sectors of the economy. In industrially developed countries, in the

system of use, priority was given to the use of state regulation of investment processes of such financial incentives as the provision of loans with low interest rates, subsidies, subsidies, support of investment directions in the centers of sustainable economic growth.

Unfortunately, a disinvestment model of economic reproduction has been formed in Ukraine today, which almost excludes the capitalization of income for the purpose of accumulating fixed capital, instead, it stimulates a consumerist model of existence [7].

The Cabinet of Ministers proposes to change approaches to the content of the organizational and economic investment mechanism. In particular, as new approaches, the development of regional value-added chains (the priority is to ensure quick access to target markets), increasing the importance of intangible assets in operational activities, including international companies, prioritizing investments in skills, infrastructure development and the production of cheap energy resources, localization production networks, development of trade and exchange with neighboring countries, intensive growth based on technology and effective management, implementation of digital transformations.

In June 2022, according to analytical data of the NBU, there is a revival of economic activity by business entities. This revival can be explained by the further adaptation of business and the population to life in war conditions, the return of citizens to their places of residence, as well as seasonal factors. At the same time, the situation differs significantly by region (in the west of the country, business felt the impact of the war to a lesser extent), as well as by format (smaller establishments return to work faster due to simpler processes). Market participants are adapting to new conditions, in particular in conditions of limited imports - the assortment is reduced or it is reoriented to domestic products. Retail trade is gradually recovering at the expense of large players and individual entrepreneurs. Food industry enterprises are increasing production at the expense of the central-western regions and reorienting the assortment to more affordable products. Due to the lack of vegetables and fruits from the southern regions, some processing plants do not use all their capacities, others increase production against the background of excess raw materials and after moving to safe areas. Ukraine begins commercial electricity export to European countries [8].

Conclusions and future perspectives of the study. The restoration of economic growth in Ukraine depends on the systematic reformation of state mechanisms for managing investment processes according to modern world models, their activation in new coordinates of sources of investment needs and tools for their satisfaction. In Ukraine, a new paradigm of managing the country's economic development should be formed, where the introduction of investment activity of all participants plays a fundamental role.

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MECHANISM OF IMPLEMENTATION OF CORPORATE SOCIAL RESPONSIBILITY FOR UKRAINIAN ENTERPRISES

Introduction. All over the world, the relationship between countries, government institutions and private companies has undergone major changes. The non-economic indicators of enterprises are beginning to play an increasing role in achieving high productivity, ensuring competitiveness, efficient use of resources and profit from activities – the level of social security of employees, the development and implementation of loyalty measures, support for medical institutions, educational institutions, cultural and social institutions and solving environmental problems.

Analysis of recent researches and publications. Scientists have formed a wide theoretical and methodological base for understanding and researching corporate social responsibility. The growing interest to the topic among Ukrainian scientists, in particular: D. Bayura, M. Delini, O. Yermakov, M. Ignatenko, V.

Nagornyi, M. Saprykina, testifies to its multifacetedness and rapid development.

The purpose of the research is to study the international experience of applying mechanisms for the implementation of corporate social responsibility and to find incentives for the development of Ukrainian agricultural enterprises on the basis of sustainable development.

Materials and methods of research. General and special methods were used for solving the problems in the study: dialectical, analysis, synthesis, the method of formal logic, method of graphic representation, comparison and generalization method.

Results of the research and their discussion. The number of Ukrainian companies joining the UN Global Compact is constantly growing (Fig. 1). This shows the readiness of Ukrainian business to act according to the principles of the sustainable development, to report on progress and to implement not only individual social responsibility projects, but also to prepare and implement the company's sustainable development strategy.

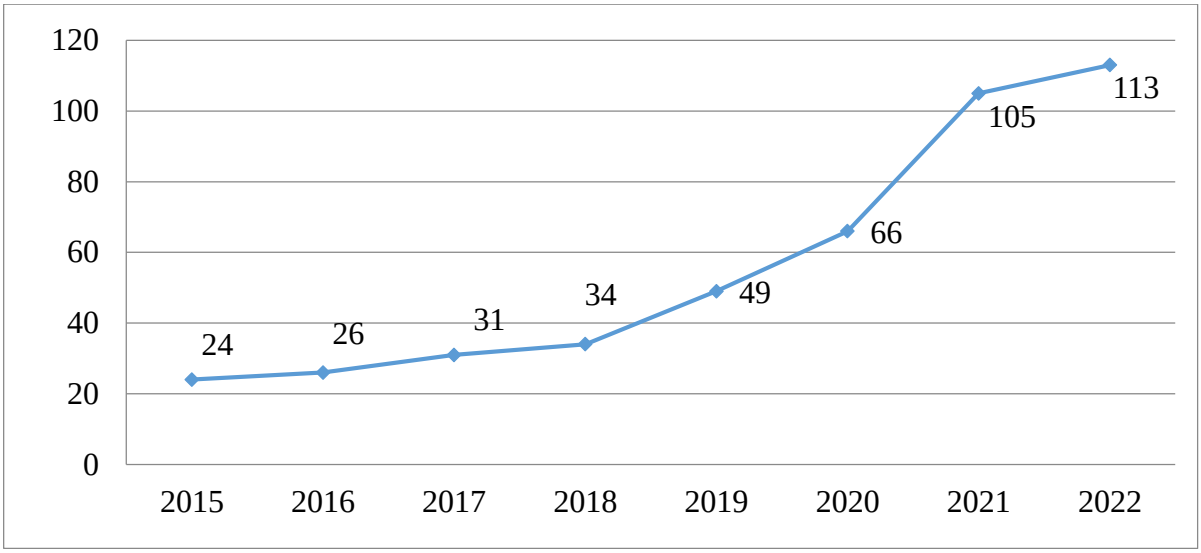

Fig. 1. The number of Ukrainian companies that have joined the UN Global Compact

Source: *built by the author on the basis of data [1]*

The strengthening of this trend is also connected with the growing expectations of the companies regarding the transformation of commercial value. More and more people are aware of the importance of social and environmental factors in everyday life. Corporate standards are changing: the priority of implementing CSR principles in corporate activity is increasing. The number of CEOs using concepts of corporate citizenship, corporate sustainable development, responsible investment and social innovation is expanding.

It is important to characterize the features of the mechanism of social responsibility of Ukrainian companies. In scientific studies, the mechanism of social responsibility is considered as a system of tools and levers, methods for

promoting corporate social responsibility, which are useful and beneficial for business and society, contribute to sustainable development by increasing the positive impact on the business environment and minimizing the negative impact [2].

Such a system is aimed at achieving success in business with tools that take into account ethics and environmental principles of management. In our opinion, the mechanism of social responsibility should be considered as a dynamic interconnected system of organizational-management, financial-investment, institutional means and methods of ensuring a responsible attitude of enterprises to their own products, consumers, employees, partners, society through constant harmonious interaction and dialogue with the aim solving the most acute social problems. In addition, at this stage of our country's development, the CSR mechanism must be strengthened by motivation, the elements of which are material and non-material incentives.

In the scientific literature, there are four main approaches to the study of the concept and mechanism of social responsibility: economic, social, political and ethical [2, 3]. Since an ethical approach is integral part of building a socially responsible business, we consider it appropriate to consider the mechanism from the following points of view:

1. The economic approach, according to which the enterprise acts as a tool for obtaining profit, therefore any of its social activities and relevant mechanisms are aimed at achieving economic results. By doing so, the company fulfils its economic functions by producing goods and providing services needed by society, creating jobs and maximizing profits for shareholders. Therefore, financial and economic levers are crucial in the mechanism of social responsibility.

2. The socio-political approach is based on the fact that companies can influence the population in a certain way, so they should use this property responsibly. In Ukraine, the company's attitude to social responsibility mechanisms depends on the origin, size, industry, location of the company and communication activities with end consumers, the level of market competition and marketing strategies. On the other hand, socio-economic conditions, level of industry development and compliance with current legislation are also important.

The mechanism of corporate social responsibility at the level of agricultural enterprises and agro-industrial corporations is a system of interconnected processes, techniques, means, approaches and methods that influence decision-making regarding the determination of basic, mandatory and optional points of social responsibility implementation, creation and effective implementation of the system of its measures to achieve the final result - on the one hand, for the competitiveness of economic entities, on the other - for solving social problems and satisfying public interests [4].

The development of social responsibility in Ukraine takes place mainly at the level of certain projects and initiatives. Today, a generalized set of indicators for assessing social responsibility at the level of the country and organizations has not yet been created. Social responsibility of business in Ukraine is manifested

through separate instruments and categories (Table 1).

Table 1

Manifestations of social responsibility in Ukraine through the toolkit

Tools	Essence
Social responsibility management systems	Enterprises implement management systems based on changes in indicators, move from design to program activities, applying the principles of sustainable development
Social reporting and verification	Enterprises form and publish non-financial statements based on a systematic approach in accordance with the recommendations of the GRI
Partnering with advocacy groups	Businesses contribute to solving problems of social importance by combining financial, human and administrative efforts
Innovative goods and services	Enterprises, cooperating with non-governmental organizations, create new products and services within the framework of social responsibility, solving social problems at the same time
Adaptation of international documents to the Ukrainian market	Enterprises implement the best international practices based on sustainable development goals, which are suitable and relevant for the Ukrainian market

Source: *summarized by the author*

Most agricultural enterprises have not yet formulated a clear strategy of social responsibility and are at the stage of compliance with laws and single charitable or volunteer programs. Our research has shown that only 5 agro-industrial companies, 3 of which have joined to the UN Global Compact, have a developed strategy for sustainable development, 3 are managing corporate social responsibility programs, and 8 talk about their social initiatives on the company's website [5].

The limited application of the principles of social responsibility at Ukrainian agricultural and agro-industrial enterprises is connected with [6]:

- the lack of the necessary amount of financial resources, the lack of governmental and non-governmental organizations that support it;
- an unstable political and economic situation in the country;
- the lack of full understanding by companies of the essence of social responsibility;
- the lack of moral and material motivation of social responsibility of business.

The formation and development of internal mechanisms and models for the implementation of social responsibility can align the goals of the country's social policy with the business goals and processes of the national agro-food business environment.

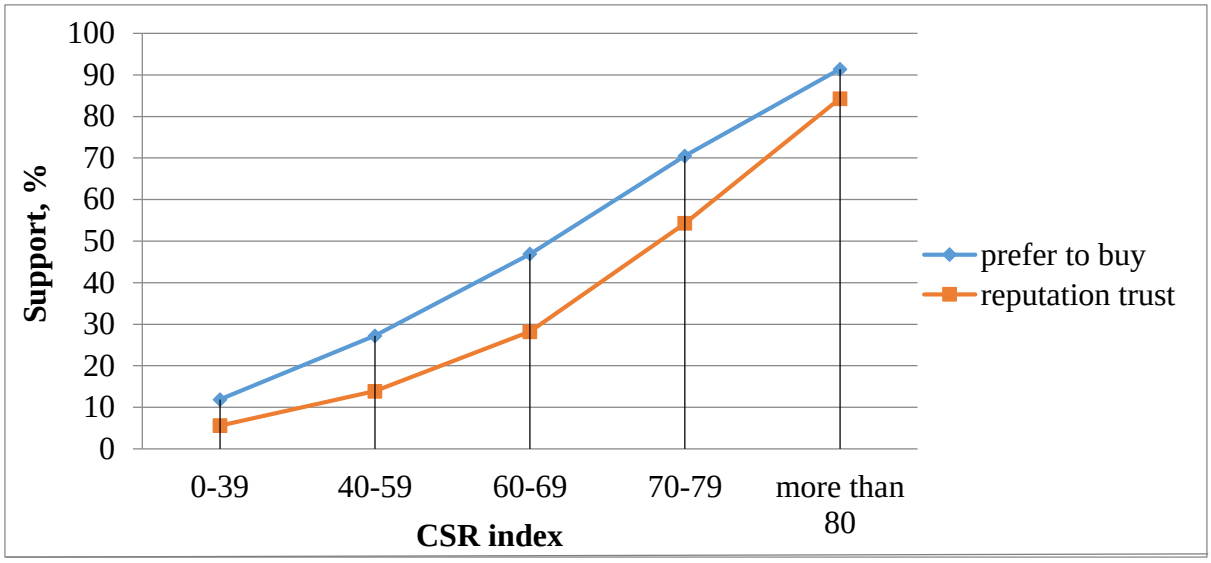

Fig. 2. The influence of the value of the CSR index on consumer preferences

International organizations, including the UN, OECD, European Union, etc., actively support the commercial efforts of companies to increase their social responsibilities. The result is the sustainable development of the company and the social importance of its voluntary efforts and initiatives. Successful companies are increasingly aware of the interrelationship between environmental, social and economic issues. The hypothesis regarding the interdependence of the development of the company's social responsibility and the sales volume can be confirmed based on the research of the Reputation Institute [7] (Fig. 2).

The main aspect of improving corporate efficiency is a strategic vision of the future. Based on international experience, the implementation of local social responsibility strategies in companies can save up to 40% of the costs of promoting products or services. As a result, the implementation of local social responsibility strategies in organizations will significantly improve their profitability and competitiveness.

Ukrainian companies also have significant results of implementing sustainable development goals in their activities [8]. Thus, the positive influence of the local social responsibility of agricultural enterprises on the performance indicators of their activities has been established, in particular: strengthening competitiveness through interaction with stakeholders, managing business processes, attracting innovations, employee interest in the results of their work, optimizing the use of resources and improving financial results. In the interaction of structural, functional, administrative, and managerial synergy, the effect of their overall relationship prevails.

At the same time, unfortunately, increasing the international competitiveness of Ukrainian enterprises is impossible without the stabilization of the national currency rate, the integrity of borders, and a stable political and economic situation in the country [9]. The creation of a transparent legal framework and a

clear model of corporate social responsibility are important for the development of Ukraine's investment attractiveness [10].

Conclusions and future perspectives of the study. The results of the study confirmed that corporate social responsibility is one of the key features of business competitiveness from the point of view of Ukraine's integration into the global economic space, where non-economic factors together with economic indicators of activity play an increasingly important role in achieving the competitiveness of companies.

Given the peculiarities of entrepreneurial activity in Ukraine, the mechanism for implementing social responsibility by companies should be based on economic and socio-political approaches. Considering international experience, Ukrainian business needs additional incentives for the formation of a sustainable development strategy. Therefore, our further research is aimed at helping agricultural companies to reveal their own potential through the successful implementation of social responsibility policy.

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ASSESSMENT OF UKRAINIAN AGRO-INDUSTRIAL COMPANIES' FINANCIAL STABILITY

Introduction. The agro-industrial complex is one of the key elements in the structure of the national economy of Ukraine, food security and foreign exchange earnings from the export of agro-industrial products depend on its stable functioning. At the current stage, the national economy is operating in conditions of significant economic-political, military challenges, disruption of supply chains and general uncertainty. The financial stability of agro-industrial companies is one of the prerequisites for their stable functioning, and therefore must be constantly evaluated in order to optimize economic resources and respond to existing challenges in a timely manner.

Analysis of recent researches and publications. Various aspects of the issue of ensuring and assessing the financial stability of enterprises have been considered in the works of many researchers.

A. Poddierohin and L. Naumova (2005) conducted an analysis of the financial stability of agricultural enterprises of Ukraine based on the consolidated balance sheet for the period 1990-2003. Among other conclusions, in the specified period, an insignificant share of retained earnings in the structure of equity capital and its predominant placement in non-current assets was revealed, which indicates a limited opportunity to increase financial stability and finance current operating activities [1].

L. Shablysta (2006) investigated approaches to the definition and interpretation of the concept of "financial stability" and calculated indicators of the financial state of Ukrainian industrial sector for 2001-2004. The financial condition of Ukrainian industrial sector during the analyzed period was characterized as unstable [2].

V. Kremen and S. Shchepetkov (2011) systematized approaches to the interpretation of the concepts of "financial stability" and identified the key directions of the interrelation of financial stability with indicators of the financial condition of companies [3].

V. Lavruk (2013) conducted a study of indicators of solvency of agricultural holdings in the Khmelnytskyi region of Ukraine and assessed the impact of profitability on the financial stability of the company [4].

I. Rusina and I. Polozuk (2015) investigated the economic essence of financial stability and analyzed the influence of external and internal factors on the financial stability of the company [5].

M. Lyshenko (2018) scientifically substantiated the theoretical provisions and principles of determining financial stability, and also conducted an

assessment of the financial condition of a selected agro-industrial enterprise using the proposed model for determining the type of financial stability [6].

N. Davydenko and N. Vasylevska (2021) based on Ukrainian agricultural companies' consolidated data of financial statements for the years 2015-2019 investigated their financial stability by calculating indicators of solvency, liquidity, profitability, creditworthiness and business activity [7].

Purpose. The purpose of the study is to carry out a comprehensive calculation of indicators of financial sustainability of large agro-industrial companies of Ukraine, monitoring their evolution, as well as comparison with benchmark values.

Materials and methods of research. The study was conducted based on the calculation of groups of financial ratios using data from open financial statements for 2010-2020 among selected public agro-industrial companies of Ukraine that have different production specializations. General information about the studied companies is given in Table 1.

Table 1

General information about the researched agro-industrial companies

Company	Production specialization	Sources of financial reports (official website)
Astarta	Sugar	https://astartaholding.com/
Kernel	Sunflower oil	https://www.kernel.ua/
MHP	Poultry	https://mhp.com.ua/

Information about the studied indicators is given in Table 2.

Table 2

Calculation methods and benchmark values of financial stability indicators by groups of ratios

Group	Ratio	Formula	Benchmark
Solvency and liquidity	Cash	Cash and cash equivalents / Current liabilities	> 0,2
	Quick	(Current assets – production inventory) / Current liabilities	> 1
	Current	Current assets / Current liabilities	> 2
Structure of financing sources	Autonomy	Equity / Assets	> 0,5
	Financing	Liabilities / Equity	< 1
	Solvency	(Equity + long term liabilities) / Assets	> 0,75

Results of the research and their discussion. To assess the financial stability of three large agro-industrial companies of Ukraine, the following groups of financial indicators were calculated and evaluated:

- Solvency and liquidity
- Structure of financing sources

Tables 3-4 show the calculated indicators of financial stability of the studied companies by groups of indicators.

Table 3

Solvency and liquidity indicators of the studied agro-industrial companies for 2010-2020

Ratios	Years										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Astarta											
Cash	0.03	0.03	0.05	0.03	0.04	0.09	0.09	0.09	0.07	0.05	0.14
Quick	0.20	0.29	0.35	0.26	0.23	0.30	0.24	0.20	0.16	0.15	0.30
Current	2.37	2.41	2.57	2.29	1.74	1.48	1.73	2.05	1.50	1.29	1.84
Kernel											
Cash	0.08	0.10	0.09	0.04	0.07	0.14	0.14	0.18	0.23	0.13	0.20
Quick	0.28	0.27	0.27	0.25	0.23	0.25	0.32	0.43	0.58	0.54	0.82
Current	1.70	1.53	1.47	1.48	1.41	1.35	1.51	2.00	2.26	2.14	2.54
MHP											
Cash	0.12	0.24	0.24	0.34	0.36	0.20	0.28	0.53	0.72	0.78	0.73
Quick	0.64	0.79	0.50	0.61	0.62	0.39	0.59	1.00	1.12	1.18	1.23
Current	2.17	2.78	2.33	2.65	2.43	1.83	2.07	3.04	3.90	3.13	3.08

Based on the calculations it can be concluded that the solvency and liquidity indicators of the studied enterprises underwent significant changes during 2010-2020. During the crisis years of 2014-2015, the indicator of total liquidity worsened in all studied companies, however, during the following periods and in 2020, the value for all companies approached the normative level. After 2015, the indicator of quick and absolute liquidity consistently exceeded the regulatory value only in the MHP company, in the Astarta and Kernel companies, the indicated ratios did not reach the stable target level.

Table 4

Indicators of financing sources' structure of the researched agro-industrial companies for 2010-2020

Ratios	Years										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Astarta											
Autonomy	0.56	0.56	0.53	0.54	0.50	0.46	0.56	0.63	0.57	0.54	0.61
Financing	0.80	0.79	0.88	0.86	0.98	1.17	0.80	0.58	0.76	0.85	0.63
Solvency	0.79	0.77	0.78	0.76	0.71	0.68	0.71	0.75	0.68	0.67	0.79
Kernel											
Autonomy	0.47	0.47	0.48	0.48	0.50	0.53	0.56	0.54	0.50	0.45	0.43
Financing	1.14	1.12	1.08	1.05	0.98	0.88	0.77	0.85	0.99	1.25	1.30
Solvency	0.62	0.61	0.60	0.62	0.63	0.61	0.62	0.70	0.74	0.74	0.77
MHP											
Autonomy	0.41	0.43	0.46	0.45	0.41	0.35	0.32	0.38	0.41	0.42	0.40
Financing	1.39	1.26	1.13	1.19	1.38	1.80	2.11	1.63	1.40	1.38	1.46
Solvency	0.79	0.82	0.81	0.83	0.83	0.80	0.81	0.87	0.90	0.88	0.89

The autonomy indicator during 2010-2020 consistently exceeded the benchmark indicator in the Astarta company, in the Kernel and MHP companies this indicator was within the range of 0.43-0.56 and 0.32-0.46, respectively. The financing ratio in Kernel and MHP companies in 2020 exceeds the benchmark value, which indicates an excess of liabilities over equity, in the Astarta company, this indicator was within the benchmark value during 2010-2014 and 2016-2020. In 2020, the solvency ratio in all studied companies reached and exceeded the benchmark value, which indicates the predominance of long-term and own sources of financing over short-term ones.

Conclusions and future perspectives of the study. Having studied the indicators of solvency and liquidity, as well as the structure of financing of a sample of agro-industrial companies of Ukraine with different production specializations, the following conclusions can be made:

- As of 2020, the indicators of cash and current ratios were within the benchmark values in 2 of 3 of the companies, the ratio of quick liquidity was within benchmark value in 1 of 3 companes. However, in each of the studied companies, the mentioned indicators show a stable tendency to improve after the crisis years of 2014-2015.
- As of 2020, the indicators of autonomy and financing were within the benchmark values in 1 of 3 companies, which indicates the predominance of the external sources of financing over their own in 2 of 3 companies. Insufficient autonomy ratio in the existing conditions can become a challenge due to the possible need for additional capital investment and tight management of fixed costs to prevent unprofitability.
- The value of solvency ratio in all the studied companies exceeded the normative indicator, which indicates the predominance of the amount of long-term sources of financing and equity capital over short-term ones.
- In general, none of the companies in the sample has a situation when all the studied indicators are within the benchmark values, which signals the need for constant monitoring and tracking of the dynamics of indicators for timely response to existing challenges.

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MAIN DIFFERENCES AND BENEFITS OF LEASING WITH A BANK LOAN FOR AGRICULTURAL ENTERPRISES OF UKRAINE

The article considers leasing as a tool to stimulate investment activity of enterprises. The differences and advantages of leasing with a bank loan on the example of motor transport, the use of different methods of calculating lease payments and the feasibility of their practical use are investigated. The main problems and further prospects of development of the domestic market of leasing services are defined. The organizational and financial levers of influence on activation of activity of participants of leasing business are offered.

Keywords: *financial leasing, agricultural enterprises, investment activity, bank credit, leasing payments, "Land lease" technology.*

Introduction. For the effective functioning of the agro-industrial complex of Ukraine, it is urgent to develop the economic potential of agricultural production, focused on ensuring food security of the state and its economic independence. This is possible only if the technical renewal of agricultural enterprises and strengthening the production capacity of all agriculture. The main problem of efficient functioning of most agricultural enterprises is the lack of sufficient financial resources, which does not allow them to purchase modern agricultural machinery.

World practice proves that one of the effective economic tools that will promote the development of domestic agro-industrial production and scientific and technological progress in general is leasing, which in conditions of limited financial resources should be a form of logistics of agricultural enterprises. The relative novelty of leasing relations and the limited practical experience of leasing in Ukraine requires the development of economic aspects of its use in agriculture.

Analysis of recent researches and publications. Scientific researches of domestic and foreign economists are devoted to the development of theoretical

provisions of modernization and technological renewal of agricultural enterprises: L.M. Berezina [1], N.K. Vasilieva [2], S.V. Vasyl′chak [3], O.V. Honcharenko [4], L.I. Katan [5], S.M. Lukash [6], L.V. Sobol [7], N.V. Shemyakina [8] and others.

Leasing in the current conditions of economic activity is becoming increasingly important for domestic businesses. This is primarily due to the fact that the leasing business allows you to use companies that do not have enough equity leased property to solve current production problems, as well as does not require collateral for innovation. In addition, a "loan" in the form of property is beneficial to financial institutions because, unlike cash loans, it reduces the risk of default, as the landlord retains ownership of the transferred property.

Leasing in Ukraine is a relatively new tool for investment support for the development of agricultural enterprises. Over time, its use began to expand as the role of leasing in economic development became clear. In a relatively short time, leasing has become an effective financial tool to support the activities of enterprises, in particular in the agricultural sector of the economy.

A.V. Antashov believes that leasing is one of the most attractive and promising forms of investment, which can revive the process of updating the material and technical base of agricultural producers and promote the entry of Ukraine's economy into the world market [10].

The purpose of the article is to consider leasing as a tool to stimulate investment activity of agricultural enterprises. Investigate the differences and advantages of leasing with a bank loan on the example of vehicles. To offer a new financial instrument "land lease" of equipment for updating the equipment of agricultural enterprises.

Results of the research and their discussion. The market of leasing agreements in Ukraine is dominated by financial leasing. First of all, this is because financial leasing is considered by the legislation of Ukraine as a financial service and requires a license to carry out leasing activities.

Accordingly, the market for financial leasing contracts is subject to strict state control, which is a guarantee of the rights and obligations of the parties to the lease.

As of July 1, 2020, all providers of financial leasing services are controlled and regulated by the NBU (until now, these functions were performed by the National Commission for State Regulation of Financial Services Markets (Natskomfinposlug)). Today the market of financial leasing in Ukraine operates at a transitional stage of legislative regulation: until June 13, 2021 the Law of Ukraine "On Financial Leasing" № 723-97 / VR of 16.12.1997 (as amended on 16.01.2004, soil) 1381-IV); on June 13, 2021 the Law of Ukraine "On Financial Leasing" № 1201-IX of 04.02.2021 [9] came into force.

In particular, the new Law "On Financial Leasing" of 04.02.2021 defines the features of financial leasing (according to the TCU), namely:

1) leasing is considered financial if all risks and rewards for the use of the object are transferred to the lessee, subject to one of the following criteria:

- the object of financial leasing is transferred for a period during which at least 75% of its original value is depreciated, and the lessee is obliged to purchase the object of financial leasing during the term of the agreement;

- the amount of lease payments at the time of the contract is greater than or equal to the original cost of the object;

- book (residual) value of the object at the end of the contract should not exceed 25% of its original value;

- the object, made to order of the lessee, after the expiration of the contract can not be used by other persons;

2) the term of the leasing agreement may not be less than one year. As you can see, the specified norm on the minimum amount of depreciated value before the expiration of the contract (75%) [11].

In the current version of the Law such a norm is not defined at all, and in its previous versions (from 16.12.1997 and 30.01.1999) it was - not less than 60%. In addition, the new law more clearly regulates the requirements for concluding, refusing and terminating a financial leasing agreement, as well as the transfer of the object to a third party.

If the company does not have the financial means to purchase the necessary asset at its own expense or considers that such a source of financing is inefficient for it from an economic point of view, the criteria for deciding to purchase fixed assets through credit or leasing should be as follows:

• availability of a source of financing for the acquisition (credit, leasing) in the amount necessary for this and for a period acceptable to the company;

• speed of execution of all necessary documents and decision-making on the loan (participation in the leasing operation with the client) - from the moment of the enterprise to the bank or leasing company for the required amount of financing to direct receipt of the asset;

• the possibility of purchasing fixed assets at a discount, if this approach is practiced by suppliers or dealers;

• the possibility of a flexible schedule of payment of the value of funds raised for the acquisition of the asset (in particular, depending on the term of receipt and the amount of profit from the use in the production process of fixed assets purchased on credit or leased);

• choice of option for purchase, return, trade-in property after the expiration of the financing period;

• technical aspects (purchase of fixed assets through a bank loan requires the execution of at least four contracts - purchase, sale, credit, insurance, collateral; in a leasing transaction the client needs to sign only one lease agreement) (Table 1).

As can be seen from Table 1, the advantages of leasing with a loan, namely: a smaller amount of initial investment, registration fees are distributed over the entire term of financing, insurance payments are distributed on lease payments during the year.

Lack of ownership of the leased asset is the main difference between a loan and a lease. Applying for a loan, you immediately become the owner of the car, real estate, equipment. When leasing, the subject of leasing is the property of the leasing company, you can get ownership of a car, equipment or other object of leasing after full settlement with the leasing company.

Table 1

The difference between financial leasing and credit on the example of motor transport

Terms of provision	***Leasing***	***Credit***
Deadline for decision making	up to 2 days	5-15 days
Possibility of a flexible approach to customer evaluation	Yes	No there are requirements of the NBU
The need to provide property as collateral or surety	No	Yes
Minimum term of the contract	Up to 12 months	No
The need to open new bank accounts	Yes	No
The need to transfer part of the cash flows to bank accounts (for legal entities)	No	Yes
Ownership of the vehicle during the contract	No the ownership passes to the client at the end of the contract	Yes
Number of contracts to be signed and amended as necessary	2 Financial leasing agreement Insurance contract	4 Loan agreement Pledge agreement Contract of sale Insurance contract
Possibility of installment payments (registration, maintenance)	So can be included in the monthly payment	No
Insurance	Casco Autocivil	Casco Autocivil Life or work insurance (for individuals)

Source: *formed according to the Association of Ukrainian Lessors Association [12]*

When lending - the client pays these payments on the day of the loan; speed of decision making; the speed of obtaining the use of the leased object; no additional collateral is required; more attractive rates (excluding other payments); issues related to equipment breakdown, transport, road accidents - the leasing company promptly resolves; with car leasing there is an opportunity to refuse to buy a car at the end of the lease and replace it with a new car.

The amount of lease payments that the lessee pays to the lessor for the entire period of the contract directly depends on the choice of method of calculating lease payments.

Methods of calculating lease payments are based on the theory of changes in the value of money over time. This is due to the fact that the leasing company must take into account the time gap between the payment of money to the supplier and the

receipt of money from the lessee. The method of calculating lease payments should take into account the specifics of attracting resources to finance leases. The main requirement is the equality of the total present value of payments and the value of the property offered for lease.

The decision of the lessee on the method of accrual of lease payments is influenced by:

- seasonality of production;
- the possibility of diverting a significant amount of funds for the development of material and technical base of production;
- features of depreciation policy;
- orientation of investment policy, etc.

The amount of the lease payment is calculated by the formula:

$$L=\left(P - S \frac{1}{(1+i)^n}\right) \times \left(\frac{i}{1-(1+i)-n}\right) \quad (1)$$

where P - the initial cost of the leased asset;
n - the number of periods;
i - the interest rate for the specified period;
S - residual (redemption) value of the leased asset;
L - lease payment.

The total amount of lease payments is calculated as the product of the received lease payment and the number of lease payments.

Table 2

The amount of lease payments depending on the accrual method

Leasing periods	Fixed payments (annuity)	Payments with accelerated reimbursement of the value of the leased asset (k = 3%)	Payments with delayed reimbursement of the value of the leased asset (k = -3%)	Payments with reimbursement of the value of the leased item in equal parts
1	16 855	15 885	17 884	17 250
2	16 855	16 362	17 347	17050
3	16855	16 853	16 827	16 850
4	16855	17 358	16 322	16 650
5	16 855	17 879	15 832	16 450
Total	84 275	84 337	84211	84 250

Consider the use of different methods of calculating lease payments and find out the feasibility of their practical use.

As shown in Table 2, payments with a constant positive growth rate in absolute terms are the most attractive for the leasing company and, accordingly, the most expensive for the lessee.

In practice, leasing companies often use two of the above schemes: annuities and payments with a uniform repayment of the value of the leased asset.

Thus, the choice of a method of calculating lease payments when scheduling their payment allows the lessee and the lessor to maneuver funds, provides the necessary level of liquidity, takes into account the possible risks of incomplete and late fulfillment of obligations by the main parties to the lease.

Conclusions and future perspectives of the study. Important features of leasing are that it combines the economic content of leasing relations in the development of agricultural enterprises as a set of lease, investment and financial-credit relations that arise when concluding leasing agreements between entities in the process of all stages of reproduction.

In April 2022, Ukrainian entrepreneurs began work on an analogue of the land lease - a special business recovery program for those companies that suffered from the war. It is currently impossible to compensate all entrepreneurs for billions in losses, but providing a mechanism for resuming work will allow them to gradually make up for lost time. Such a mechanism can be a "lease" of equipment from international partners.

The essence of the program is that entrepreneurs will be provided with equipment and financing on preferential terms, which have not been available in Ukraine so far. The money will be cheap, long, and the risk of losing the equipment will lie with the financial partner, so that the entrepreneur does not have to pay the creditor if the loss of machinery / equipment occurs due to hostilities.

The program will be prepared with the mediation and financial participation of the Ukrainian leasing company ESKA Capital.

Implementation mechanism through Esca Capital:

✓ Collect stories of entrepreneurs who suffered losses due to the war (we are here now);

✓ Make information materials to attract partners and a description of the program: landing with photos / videos and personal stories, needs now (we are here now too);

✓ Present programs (pitching with the idea and needs of how to become a partner, who we are and our background);

✓ Launch an information program focused on foreign partners: associations of European lessors and other industry associations, transport companies, construction companies, manufacturers

✓ Distribute materials, negotiate and fundraise;

✓ Sign agreements with partners, delivery of equipment to Ukraine and leasing to customers, collection of payments and settlement with partners.

For agricultural enterprises - lessees, leasing - is actually one of the important ways of development based on the restoration of fixed assets. It is important that leasing is available to both small and medium-sized agricultural enterprises, for which obtaining loans is mainly a problem. State leasing provides agricultural enterprises with production potential without significant one-time costs and allows you to save money through interest-free loans. The new financial instrument will accelerate the recovery of Ukraine's economy as a result of Russia's military action.

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PRACTICAL ASPECTS OF THE CAPITAL STRUCTURE THEORIES

Abstract. Capital structure decision is one of the main elements of the financial strategy of the companies. The decision relates to using various gearing levels in the assets of the company but has its own advantages and disadvantages. Debt finance can create valuable tax savings that can drive down cost of capital and increase shareholder value. However too much debt increases financial risk and incurs fianacial distress cost. The capital structure theories provide good examples for a deep analysis of the core of the companies' financial decisions.

Keywords: *WACC, capital structure, equity, debt finance, tax shield*

Two main theories attempt to explain the effect of changes in capital structure on the cost of capital and therefore the market value of a company. These are traditional theories and the net operating income approach or Modigliani and Miller theory. The theories have completely different statements but are broadly used for the analysis of the companies' capital structure decisions. The capital structure decision broadly relates to using various portions of debt capital in the asset of the company. Using much debt capital links with a high level of risk but has a special advantage to create valuable tax savings.

The traditional view of WACC

Weighted Average Cost of Capital is the average cost of the company's finance (equity, debentures, bank loans) weighted according to the proportion each element bears to the total pool of capital. Weighting is usually based on market valuations, current yields, and costs after tax.

A general formula for the weighted average cost of capital (or k_0) is as follows.

$$\mathrm{WACC} = \mathrm{Ke}\left[\frac{\mathrm{Ve}}{\mathrm{Ve}+\mathrm{Vd}}\right] + \mathrm{Kd}\left[\frac{\mathrm{Vd}}{\mathrm{Ve}+\mathrm{Vd}}\right] \times (1-\mathrm{t})$$

Where $\mathbf{k_e}$ is the cost of equity
$\mathbf{k_d}$ is the cost of debt
$\mathbf{V_e}$ is the market value of issued shares (market capitalization)
$\mathbf{V_d}$ is the market value of debt

The traditional view is as follows:

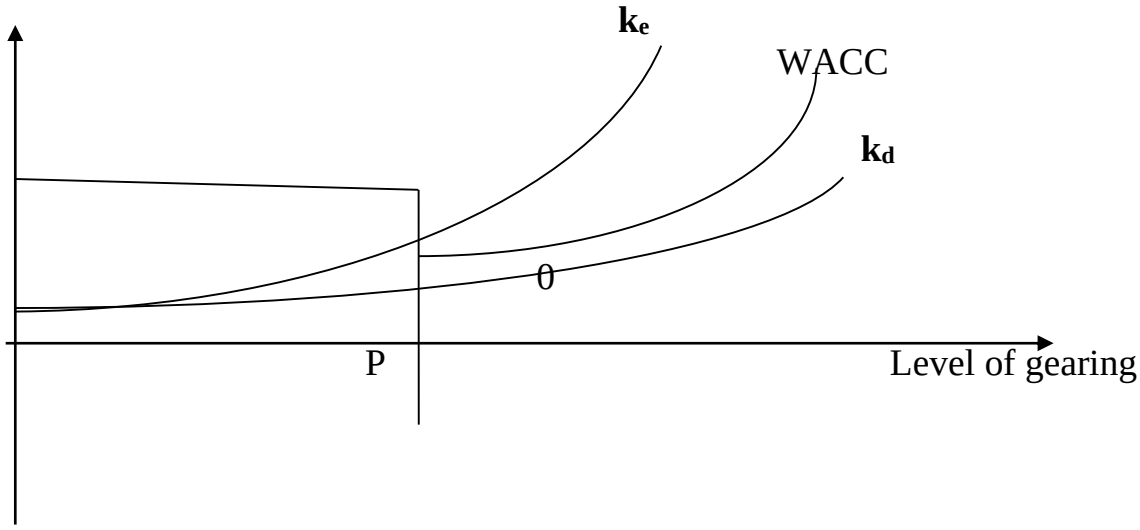
- As the level of gearing increases, the cost of debt remains unchanged up to a certain level of gearing. Beyond this level, the cost of debt will increase as interest cover falls, the number of assets available for security falls, and the risk of bankruptcy increases.

- The cost of equity rises as the level of gearing increases and financial risk increases.
- The weighted average cost of capital does not remain constant, but rather falls initially as the proportion of debt capital increases, and then begins to increase as the rising cost of equity (and possibly of debt) becomes more significant.
- The optimum level of gearing is where the company's weighted average cost of capital is minimized.

The traditional view about the cost of capital is illustrated in the following figure. It shows that the weighted average cost of capital will be minimized at a particular level of gearing P.

Graphic 1. The traditional view of WACC

Cost of capital



Where:

k_e is the cost of equity in the geared company

k_d is the cost of debt

k_o is the weighted average cost of capital

The traditional view is that the weighted average cost of capital, when plotted against the level of gearing, is saucer-shaped. The optimum capital structure is where the weighted average cost of capital is lowest, at point **P**.

The net operating income (Modigliani and Miller (MM)) view of WACC

The net operating income approach takes a different view of gearing on WACC. In their 1958 theory, (Modigliani and Miller (MM)) proposed that the total market value of a company, in the absence of tax, will be determined only by two factors:

- The total earnings of the company
- The level of operating (business) risk attached to those earnings

The total market value would be computed by discounting the total earnings at a rate that is appropriate to the level of operating risk. Operating risk is created by operating leverage. Also called business risk.

This rate would represent the WACC of the company.
In the other words:

$$V_g = V_u = \frac{EBT}{WACC} = \frac{EBT}{Keu} \qquad (1)$$

Thus Modigliani and Miller concluded that: the capital structure of a company would not affect its overall value or WACC.

Assumptions of the net operating income approach

- A perfect capital market exists, in which investors have the same information, upon which they act rationally, to arrive at the same expectations about future earnings and risks;
- There are no tax or transaction costs;
- Debt is risk-free and freely available at the same cost to investors and companies alike.

Modigliani and Miller justified their approach by the use of arbitrage.

Arbitrage is the simultaneous purchase and sale of a security in different markets, to make a risk-free profit through the exploitation of any price difference between the markets.

For instance, suppose that there are two companies with the same earnings in equivalent business risk classes. Company **A** is an ungeared company and for business, activity uses only equity capital equal to 60$. Company **B** is a geared company that has the following capital structure, Equity = 40$, Debt= 20$. From the investor's view, if these companies have the same earnings, the investor of company **A** will sell the shares (60$) of this company and buy the shares of company B and obtain an opportunity to make additional investments in the amount of 20$.

Arbitrage can be used to show that once all profit opportunities have been exploited, the market values of two companies with the same earnings in equivalent business risk classes will have moved to an equal value.

If Modigliani and Miller's theory holds, it implies:

a) The cost of debt remains unchanged as the level of gearing increases.

b) The cost of equity rises in such a way as to keep the weighted average cost of capital constant**.**

The cost of equity rises according to the equation shown below,

$$k_{eg} = k_{eu} + (k_{eu} - k_d)\frac{V_d}{V_e} \qquad (2)$$

Where

$(k_{eu} - k_d)\frac{V_d}{V_e}$ is a risk indicator for equity capital of gearing company

k_{eg} is the cost of equity in a geared company

k_{eu} is the cost of equity in an ungeared company

V_d *and* V_e are the market values of debt and equity respectively

k_d is the cost of debt pre-tax

Example #1. The company has a capital structure: Equity capital – 70% with an expected annual dividend of 18%, debt capital – 30% with an interest rate of 15%. At that time the k_{eg} is equal :

$$k_{eg} = 0.18 + (0.18 - 0.15)\frac{0.3}{0.7} = 0.1929 = 19.29\%$$

Suppose that company decided to increase the portion of debt capital at the capital structure up to 50%. According to this decision, the cost of equity will increase

$$k_{eg} = 0.18 + (0.18 - 0.15)\frac{0.5}{0.5} = 0.21 = 21\%$$

According to postulates of the theory

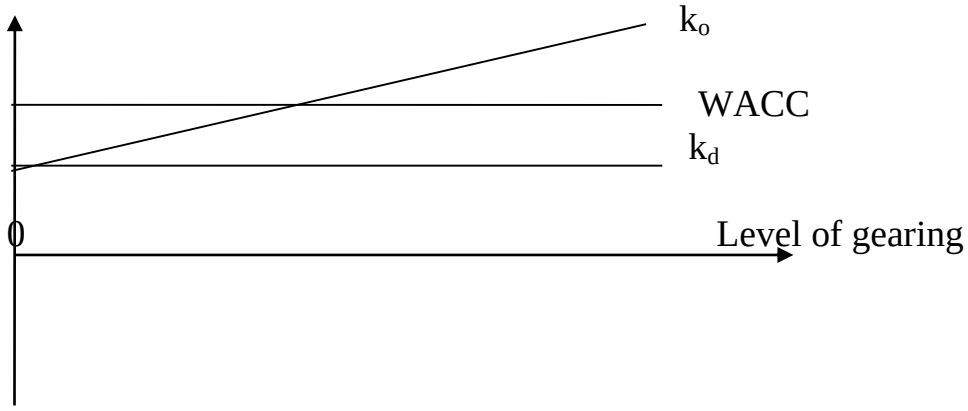
WACC = 0.7×0.1929 + 0.3×0.15 =0.18=18%

WACC = 0.5×0.21 + 0.5×0.15 =0.18=18%

As seen from the calculations the MM theory's conclusions are correct it can be illustrated graphically as follows

Graphic 2. Modigliani-Miller view of WACC

Cost of capital



Modigliani and Miller's theory adjusted for taxation

Having argued that debt has no benefit in the absence of taxation, MM then went on to demonstrate that debt can be beneficial where tax relief applies.

Allowing for taxation reduces the cost of debt capital by multiplying it by a factor **(1-t)** where "**t**" is a rate of tax (assuming the debt to be irredeemable).

MM modified their theory to admit that tax relief on interest payments does make debt capital cheaper to a company, and therefore reduces the weighted average cost of the capital where a company has debt in its capital structure. They claimed that the weighted average cost of capital will continue to fall, up to a gearing of 100%.

In other words, according to MM's theory adjusted for taxation, the WACC formula should be modified as below

$$\mathrm{WACC} = \mathrm{Ke}\left[\frac{\mathrm{Ve}}{\mathrm{Ve+Vd}}\right] + \mathrm{Kd}\left[\frac{\mathrm{Vd}}{\mathrm{Ve+Vd}}\right] \times (1 - \mathrm{t}) \qquad (3)$$

$$\text{in the case of } \mathrm{Ve} = 0;\ \mathrm{Kd} \rightarrow \min;\ \text{and } \mathrm{t} - \text{constant}$$

$$\mathrm{WACC} = \mathrm{Kd}\left[\frac{\mathrm{Vd}}{\mathrm{Ve} + \mathrm{Vd}}\right] \times (1 - \mathrm{t}) \rightarrow \text{minimum; or}$$

$$\mathrm{WACC} = \mathrm{Kd} \times (1 - \mathrm{t}) \rightarrow \text{minimum}$$

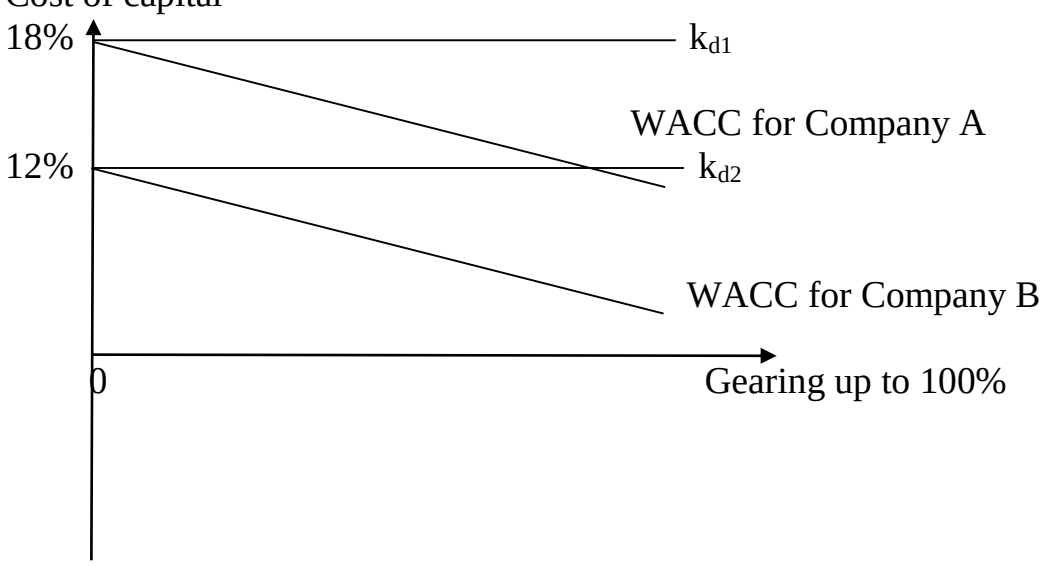
Example #2. Assume that **Company A** has 0 amount of equity capital in the capital structure and received a bank loan at an annual rate of 18%. **Company B** has also 0 amount of the equity capital and received a bank loan at an annual rate of 12%. The corporate tax rate is constant for both companies and is 20%.
According to the MM's theory adjusted for the taxation, we get the following results of calculations for WACC of Company A and Company B

$$\text{WACC Company A} = 0.18 \times (1 - 0.20) = 0.144 \text{ or } 14.4\% \rightarrow \text{minimum}$$

$$\text{WACC Company A} = 0.14 \times (1 - 0.20) = 0.112 \text{ or } 11.2\% \rightarrow \text{minimum}$$

Graphically it can be illustrated as follows :

Graphic 3. Modigliani-Miller theory adjusted for taxation view of WACC



Formulae and MM theory

M&M developed the following formula as part of their taxation theory

$$V_g = V_u + TB \quad (4)$$

Where $V_g = value\ of\ debt\ plus\ equity\ in\ geared\ company$

$V_u = value\ of\ equity\ in\ an\ equivalent\ ungeared\ company$

TB = tax shield on debt (T is the corporate tax rate and B is the market value of the geared company's debt)

This formula shows that the greater the value of debt the greater the value of the company and so supports the idea that a company should be geared as highly as possible to maximize its value.

A further formula arising from MM theory is

$$k_{eg} = k_{eu} + (k_{eu} - k_d)\frac{V_d}{V_e}(1 - T) \quad (5)$$

Where T is the corporate tax rate

This formula shows that the cost of equity will increase when the relative value of debt to equity increases. Using Example #1 inputs we may justify this statement through the following calculations.

$$k_{eg} = 0.18 + (0.18 - 0.15)\frac{0.3}{0.7}(1 - 0.2) = 0.1543 = 15.43\%$$

$$k_{eg} = 0.18 + (0.18 - 0.15)\frac{0.5}{0.5}(1 - 0.2) = 0.168 = 16.8\%$$

MM also came up with an adjusted cost of capital formula as follows

$$WACC_{adj} = k_{eu}(1 - t\frac{V_d}{V_e + V_d}) \qquad (6)$$

Where $WACC_{adj}$ the weighted average cost of capital in a geared company

k_{eu} is the cost of equity in an ungeared company

V_d and V_e are the market values of debt and equity respectively

t is the corporate tax rate.

This formula shows that WACC is reduced when gearing increases or in other words when more debt is taken on.

Weaknesses in MM theory

MM theory has been criticized as follows.

- MM theory assumes that capital markets are perfect. For example, a company will always be able to raise finance to fund worthwhile projects. This ignores the danger that higher gearing can lead to financial distress costs and agency problem
- Transaction costs will restrict the arbitrage process.

Investors are assumed to act rationally which may not be the case in practice. In real practice, some of the theoretical assumptions in MM theory do not hold. The most unrealistic is that perfect capital markets exist and that the debt is risk-free. Almost every borrower would agree that there is a greater risk at very high levels of gearing and lenders will feel the same. This risk is that the borrower will not be able to service its interest payments and the company may become insolvent. The practical implications of these capital structure theories can be illustrated as follows.

Graphic 4. Practical implications of the capital structure theories

Level of gearing

Low *High*

Young company	Mature company
Volatile cash flows	Stable cash flows
Tax benefits < financial distress costs	Tax benefits > financial distress costs

Summary

✓ The traditional theory of cost of capital suggests that WACC is influenced by gearing, Modigliani and Miller disagree

✓ Under the traditional theory of cost of capital, the cost declines initially and then rises as gearing increases. The optimal capital structure will be the point at which WACC is lowest.

✓ Modigliani and Miller stated that, in the absence of tax, a company's capital structure would have no impact on its WACC

✓ Modigliani and Miller went on to demonstrate that debt can be beneficial where tax relief applies and a company should use as much debt finance as possible.

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VELOCITY OF KEY POLICY RATE IMPACT ON THE COST OF CAPITAL IN TERMS OF EXISTENTIAL SHOCKS

Introduction. The first decades of the 21st century, along with globalization achievements, brought vulnerability to global shocks. The experience of recent years shows that crises, which are not economic in nature, might have the most severe consequences for an economy. The economic growth of any country is based, among others, on bank lending. Credit activity depends mainly on a central bank, which regulates an average level of interest rates in the interbank market through a change in the key rate: the lower it is – the cheaper are loans and the faster an economy will grow. The determining one in this regard is the velocity of a retail market rates response to the monetary authority decision on the level of a key rate. The elasticity degree of the cost of capital is of particular relevance in crisis times, especially in terms of a natural disaster, epidemic or war, when not only economic well-being, but also saving lives depends on the controllability of the situation in the monetary sphere.

Analysis of recent researches and publications. Many prominent economists, both Ukrainian and foreign, devoted their papers to finding a qualitative and quantitative relationship between decisions on a level of rates for central bank open-market operations and price changes in a credit market. The pool of relevant research includes both fundamental theoretical concepts [1] and

applied publications [2]. Particular attention should be paid to papers aimed at considering the characteristics of credit markets' response to changes in monetary conditions, both at cross-country dimension [3] or through national aspect [4–5]. However, most of these studies are aimed at studying the relation between a level of the key rate and the situation on a credit market under conditions close to normal, or at least during crises of an economic nature. Shocks caused by natural or political causes, on the other hand, are poorly understood external circumstances in which regulatory decisions are made.

Purpose. Thus, this study aims to assess velocity of key policy rate impact on the cost of capital in terms of existential shocks (in case of Ukraine during macroeconomic shocks in 2014–2015 and 2020–2022).

Materials and methods of research. In the course of the study, it is used both general economic research methods (analysis and synthesis, heuristic extrapolation, ideographic representation etc.) and econometric approaches (Granger causality). The information base consists of official statistics and communiqué of National Bank of Ukraine.

Results of the research and their discussion. In the context of this study, an existential shock as a set of specific external factors under which an economic recession is clearly or partially exists, and regulatory decisions are made to eliminate negative consequences. The main sign of such an event is an imaginary or real threat to life, regardless of a magnitude of net economic losses. The source and main generator of the crisis here is not a contradiction in economic relations, but the danger of physical losses, primarily human ones. A striking example of existential shock in globalized world are military conflicts. The tightness and interweaving of industrial, logistical and managerial ties contributes to the spread of negative influence not only within the framework of the parties involved in the war, but also on a wide regional or even global scale.

However, not only wars can cause devastating disruption of economic ties. The stoppage of international trade, the destruction of usual logistics routes, the defragmentation of consumer segments – all these are the consequences not of prolonged hostilities, but of an epidemiological threat. COVID-19 pandemic has been as devastating to the global economy as the Global financial crisis of 2008. However, unlike GFC, it was impossible to estimate the losses from so-called "Corona Crisis" in advance, since the dynamics of the recession in this case obeyed the laws of biology, not economics. This explains the specifics of the external conditions in which the monetary authorities are compelled to make decisions on changing the level of a key rate during an existential crisis. In addition to daily changing market conditions and low-quality forecasts due to the chaotic restructuring of economic ties, existential shocks are necessarily associated with an atmosphere of psychological pressure due to the proximity of unpredictable danger, as well as direct physical damage (in the case of wars, highly destructive to the state economic management infrastructure).

The first studies of retail market rates response to changes in key rates level appeared only in the last two years because of the end of coronavirus pandemic.

The analysis of the global data set of decisions taken by central banks in 39 countries has proven differences in strategic approaches to monetary policy in developed and emerging economies [6]. Thus, central banks of advanced countries, as a reaction to the existential shock, primarily involved the mechanisms of open-market operations: lending and asset purchases – in fact, this was just a scaling up of measures taken in the pre-crisis period. The situation in developing countries was more complicated: tough administrative instruments, as the reserve ratio, the official exchange rate, the key rate, were used. Such a difference can be explained by systemic disproportions in the behavioral perception of monetary authority measures, which in times of uncertainty is usually perceived with distrust and often has an effect opposite of expected.

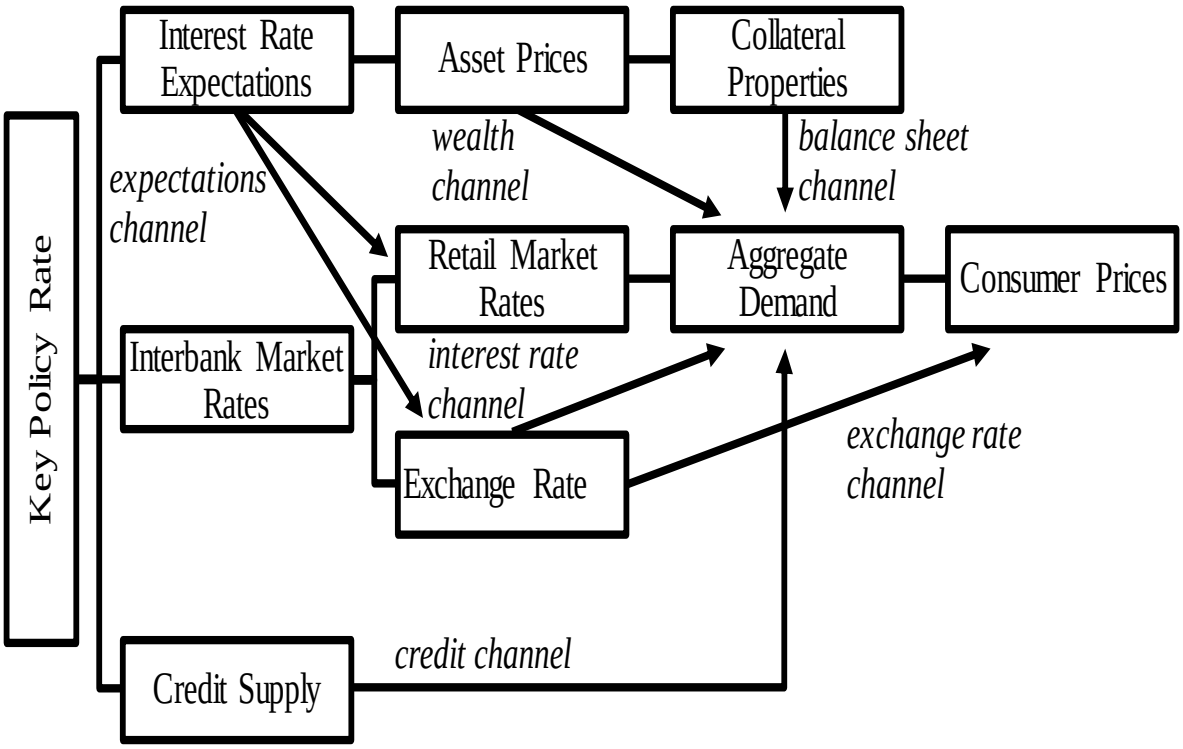

Fig. 1. Influence Routes of the Key Policy Rate in the Monetary Transmission Mechanism

Source: *own processing on [1–2]*

The researchers also point to a short or complete lack of history of use the market derivatives by central banks of developing countries as a reason. In order to determine the specific of key rate influence, let us take a closer look at the main routes of monetary transmission mechanism (Fig. 1).

As shown in Fig. 1, the key rate has a direct impact on three indicators: credit supply, interbank market rates and interest rate expectations. Since the cost of banks' access to liquidity instruments is determined by derivatives of the key rate, a change in its level leads to a reduction or expansion of credit supply (the credit channel for influencing aggregate demand). The influence of the key rate on the interbank market situation extends to the level of rates on transactions with customers and to the foreign exchange market. In the first case, the interest rate channel is activated, which is the shortest route of influence on aggregate demand.

Through the exchange rate channel, the impulse is transmitted both to the formation of demand and directly to consumer prices. Both the decision on the key rate itself and discussions that precede it have an impact on interest rate expectations. Through the expectations channel monetary impulse is transmitted directly to asset prices, and supports the effect on retail market rates and exchange rate. In turn, changes in non-financial assets markets affect aggregate demand both directly (wealth channel) and through changes in the value of collateral (balance sheet channel). To determine shock periods for the empirical analysis of the velocity of market rates response to changes in the key rate, let us consider the dynamics of national Financial Stress Index (Fig. 2).

The Index described in Fig. 2 is a rather sensitive indicator, which reacts to slightest changes in sentiment of the main areas of central bank responsibility: the banking sector, households, corporate and government securities markets, and the foreign exchange market. In a state of habitual stability, the index fluctuates within its modal value (0,04), while strong shocks (first of all, existential ones) increase the level of the index to 1,0. The event left the greatest mark in the analyzed period was the escalation of hostilities in the east of Ukraine in mid-2014 – early 2015. It can be seen that the first successes of the Anti-Terrorist Operation made it possible to somewhat stabilize monetary relations (by August 2014, the Index had fallen by almost four times from the first peak value). However, a new round of military events increased instability, and in early 2015, the value of the Index was twice the maximum of 2014.

Another shock associated with military risks was the aggression against Ukrainian ships during the passage of Kerch Strait. The ensuing declaration of martial law in the southern and eastern regions of the state in December 2018 affected a small jump in the Index, which exceeded its norm by 1.5 points.

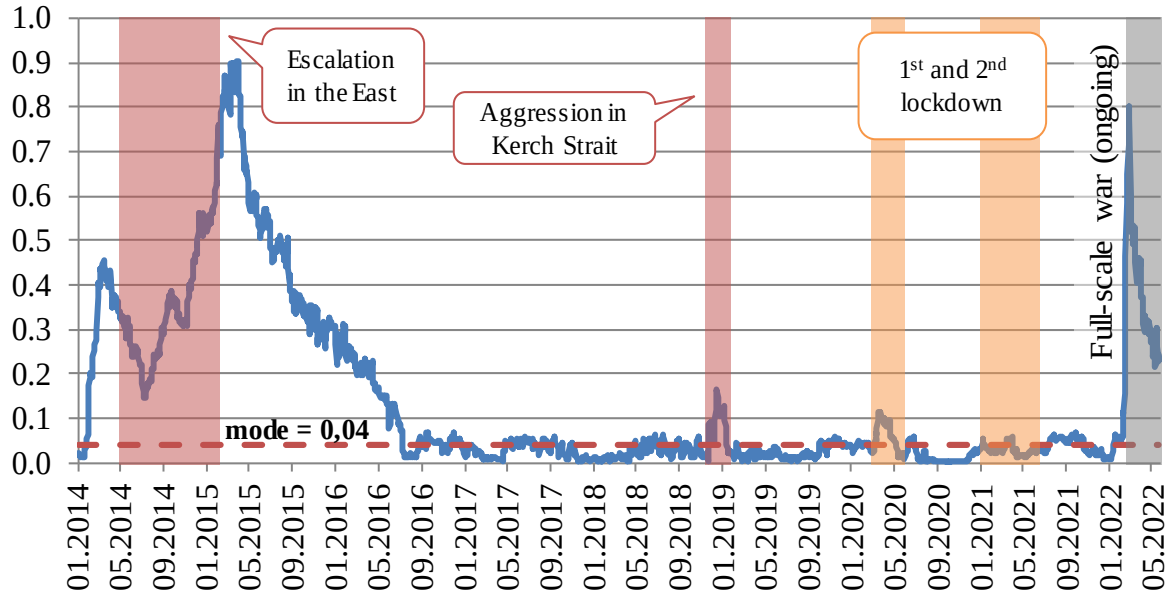

Fig. 2. Financial Stress Index for Ukraine in 2014 – 1H 2022
Source: [7]

With the disappearance of the direct threat, the situation in the banking sector and on financial markets quickly returned to normal. The next period of concern was associated with two stages of severe quarantine restrictions due to the COVID-19 pandemic.

Sudden stop of most of the usual economic chains had a very negative impact on further growth for many years to come, and the seemingly uncritical peaks of the Index in 2020 and 2021 are explained not by the weak reaction of the markets, but by their partial paralysis, and therefore an adequate change in statistical indicators did not take place. The current instability due to full-scale war has had a significant impact on the Index, although it's maximum at the start of hostilities did not exceed the same value in 2015. This may indicate both the general readiness of the economy for shock events and better controllability of the situation on the credit, foreign exchange and securities markets by National Bank of Ukraine. In order to test the last hypothesis and determine the velocity of key policy rate impact on the cost of capital (represented by retail market deposit rates) in terms of existential shocks, we selected data for two periods: escalation in the East and 1st and 2nd lockdown. The data is presented by the levels of rates by currencies and terms of deposits for each banking day. Response rates were assessed using Granger causality testing with lags of 1, 2, 3, 5, 10, 20, 40 and 60 days.

Table 1

Granger causality estimation for key policy rate and average deposit rates

Null Hypothesis	Probability during: 15.04.2014-04.03.2015							
	1	**2**	**3**	**5**	**10**	**20**	**40**	**60**
UAH_SHORT does not Cause KEY_RATE	0,1	0,2	0,3	0,3	**0,2**	**0,0**	0,0	**0,1**
KEY_RATE does not Cause UAH_SHORT	0,0	0,0	0,3	0,6	**1,0**	**1,0**	0,1	**0,7**
UAH_LONG does not Cause KEY_RATE	**0,7**	**0,8**	0,8	0,8	1,0	**0,2**	**0,8**	**1,0**
KEY_RATE does not Cause UAH_LONG	**0,1**	**0,2**	0,3	0,6	0,5	**0,8**	**0,0**	**0,0**
FOR_SHORT does not Cause KEY_RATE	0,0	0,0	0,0	**0,1**	0,3	0,5	0,6	0,8
KEY_RATE does not Cause FOR_SHORT	0,3	0,4	0,5	**0,8**	0,4	0,2	0,5	0,8
FOR_LONG does not Cause KEY_RATE	0,5	**0,7**	**0,9**	**1,0**	1,0	0,4	0,3	0,3
KEY_RATE does not Cause FOR_LONG	0,0	**0,0**	**0,0**	**0,0**	0,4	0,7	0,0	0,1
Null Hypothesis	**Probability during: 13.03.2020-09.06.2021**							
UAH_SHORT does not Cause KEY_RATE	**0,7**	**0,7**	0,2	0,4	0,5	0,0	0,0	0,0
KEY_RATE does not Cause UAH_SHORT	**0,0**	**0,0**	0,0	0,0	0,0	0,0	0,0	0,0
UAH_LONG does not Cause KEY_RATE	0,3	0,3	0,5	0,3	**0,2**	**0,2**	0,3	**0,0**
KEY_RATE does not Cause UAH_LONG	0,0	0,1	0,1	0,6	**0,8**	**1,0**	1,0	**1,0**
FOR_SHORT does not Cause KEY_RATE	0,2	0,4	0,2	0,1	0,2	0,1	**0,8**	0,4
KEY_RATE does not Cause FOR_SHORT	0,0	0,0	0,1	0,5	0,4	0,4	**0,2**	0,5
FOR_LONG does not Cause KEY_RATE	0,0	0,1	0,0	0,0	0,0	0,0	0,4	0,1
KEY_RATE does not Cause FOR_LONG	0,0	0,0	0,0	0,2	0,4	0,2	0,8	0,4

Source: *own calculations on [8]*

Variables are assigned the following conventions (Tab. 1):
– KEY_RATE: key policy rate;
– UAH_SHORT: average rate for short-term deposits in UAH;
– UAH_LONG: average rate for long-term deposits in UAH;
– FOR_SHORT: average rate for short-term deposits in foreign currencies;
– FOR_LONG: average rate for long-term deposits in foreign currencies.

An analysis of Tab. 1 contents shows, that during the first period, due to general political instability and an unbalanced system of monetary management (exchange rate targeting was canceled in February 2014, inflation targeting was fully operational since 2017), the key rate played a weak role as an effective policy instrument. The impact on short-term rates (both in UAH and in other currencies) did not exists at all, and, in some cases, there was an inverse relationship: the key rate level was actually adjusted to market indicators. At the same time, rates on long-term deposits responded promptly: on operations in UAH – already on the 2-3rd day, in foreign currencies – a week later.

Five years later, at the height of the coronavirus pandemic in Ukraine, the situation has changed dramatically. This time, the rates on short-term deposits in UAH clearly reacted to decisions regarding the key rate (within 1-2 days after the publication). At the same time, long-term rates remained outside the central bank's operational intervention, and their historical level was, obviously, used to justify the key rate through retrospective expectations. At the same time, the development of inflation targeting instruments by that time made it possible to achieve a response even from rates on short-term foreign currency deposits: a correlation was noticed 2 months after the monetary decision. Long-term rates in foreign currency, however, did not significantly react to changes in the key rate.

Conclusions and future perspectives of the study. Our analysis proved a noticeable progress in the management of the situation with retail market rates by National Bank of Ukraine. The estimated velocity of the impact of the key policy rate on the cost of capital in Ukraine in terms of existential shocks is 1-2 days for short-term transactions. Given the increasing frequency of crisis events, in particular of non-economic genesis, it is necessary to continue improving the monetary transmission mechanism of National Bank of Ukraine in order to achieve high-quality operational control over the market situation even in stressful conditions. Further research on this issue will be possible after the end of the war and the publication of full statistics from February 24, 2022. It is expedient to assess the controllability of the monetary sector of the economy during active hostilities in order to substantiate the direction of further development of monetary instruments.

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SPECIFICS OF FOREIGN EXPERIENCE IN MORTGAGE LENDING ADAPTATION IN UKRAINE: CURRENT STATE AND PROSPECTS OF DEVELOPMENT

Abstract. *The study has analyzed Ukrainian and the EU countries experience in mortgage lending formation and development. A comparative analysis of mortgage lending terms in Ukraine and in the EU countries has been made. It was determined that mortgages in Ukraine are issued at significantly higher interest rates compared to EU countries. It was also noted that agreement terms for residents and non-residents may differ. Mortgage lending conditions are affected by the annual interest rate. In banking practice, everything depends on the terms of credit agreements, namely: the lower is the rate the banking institution offers to the client, the larger is the amount or term of credit resources and vice versa. The analysis of domestic experience in mortgage lending reveals that banking institutions mainly provide up to UAH 1 million mortgage loans at the average rates of 20-28% per annum. It was proved that the deposit financing model prevails in Ukraine, which significantly limits the volume of mortgage lending. Currently, there are positive trends in the development of Ukrainian banking system including ones in deposits increase. However, it is important to note that the deposit model can only provide ancillary funding given the relative poverty of the majority of Ukraine's population and the traditional distrust of banking institutions. The funds raised through the refinancing mechanism, i.e. the use of mortgage securities should be the main sources of funding. Specific features of using the mechanism of mortgage securities protection considered in our studies were devoted to identification of the key problems that accompany its activities and hinder*

further development. Under these conditions, government programs aimed at reducing the cost of mortgage lending are highly relevant, especially for young people. State support for mortgage lending to young people in Ukraine is officially provided through the State Fund for Youth Housing. It has been established that bank mortgage lending has great potential in ensuring significant qualitative changes in the economy of Ukraine, as it is considered an efficient form of attracting long-term cheap financial resources designed to be invested in the development of the real sector of the economy.

Keywords: *mortgage, loan, bank, market, creditworthiness, project, fund, youth loan, long-term loan, National Bank of Ukraine.*

Introduction. Research on this topic is quite relevant and topical at the current stage of Ukraine's banking system development since compared to the past, Ukraine's economy has changed radically due to its political and economic independence, as well as the transition to a market economy. The mortgage system comprises economic and legal subsystems and implies drawing a mortgage agreement, the procedure for determining the state of real estate ownership and debts on it for any consistent time period. The mortgage system makes it possible to clearly establish the right of the owner of a particular property, it predetermines conditions for a reliable long-term loan secured by this property.

The essence of a mortgage loan can be determined using the general laws of capital advancing and the law of borrowed capital movement. A mortgage loan is a property form of credit. The provided credit funds are directed to the real sector of the economy, rather than to the stock market. The value of mortgages increases particularly in a transition economy when there are unoccupied resources, including labor ones. In this aspect, it contributes to solving a number of socio-economic problems. First, the acquisition of the most important good of life, *i.e.* housing, by citizens. Secondly, jobs creation, obtaining additional income for workers and entrepreneurs. In this regard, the target orientation of the mortgage loan and its targeted use results distinguish it from other forms of credit, where it takes the form of investment in the real sector of the economy. Investments in housing construction expand the consumer market and social benefits, they also act as investments in fixed assets, thereby expanding the market for means of production and entrepreneurial goods.

Analysis of recent researches and publications. The issue is given considerable attention by the National Bank of Ukraine, the Cabinet of Ministers and the Verkhovna Rada of Ukraine, which is reflected in the laws "On Banks and Banking", "On National Banks", "On Mortgages", "On Mortgage Lending, consolidated mortgage debt transactions and mortgage certificates "," On mortgage bonds", "On collateral". The studies by Yevtukh O.T., Hrynko O.L., Andrieieva H.I. dealt with the issue.

Foreign scientists, such as T. Galbraith, A. Gregory, J. Dixon, T. Copeland, G. Markovitz, A. Marshall, J. Soros, K. Stephen, D. Ricardo, J. Richard, G. Poll, K. Walsh, G. Harrison, J. Hickey, H. Herbort, K.P. Follak made a significant contribution to studying the problem. Research on mortgage loans is presented in

the papers of the domestic scientists, in particular A. Danylenko, M. Demyanenko, V. Mesel-Veselyak, O. Yermakov, V. Kilochka, N. Kruchok, S. Kruchka, V. Kilochka, I. Liuty, A. Martin, P. Sabluk, V. Savych, M. Stupen, N. Tanklevska, A. Chupis, O. Shpychak and others.

Purpose. Is to theoretically substantiate the foundations of the mortgage lending organization in Ukraine, to disclose the current practice, as well as to find ways to improve the work based on the systematization of existing proposals on the issue.

Materials and methods of research. A set of general scientific methods was used to achieve this goal. The following research methods were used in the research process: observation (systematic study of the bank, obtaining primary information in the form of financial statements for the analyzed period), comparison (comparison of analyzed parameters, coefficients, balance sheet items comparison with one another or with a base index, normative value), abstraction (disregarding insignificant properties in the definition of categories and pointing out some essential characteristics), the method of grouping (in considering the classification of loans); various techniques of statistical methods, in particular comparison - when comparing actual data for the relevant periods; observation method was used to study and assess the financial condition of the methods of analysis and synthesis, induction and deduction.

Results of the research and their discussion. The problem of providing housing for the population is currently topical in Ukraine. The key obstacles to the purchase of housing by the population are mostly low living standards and lack of people's own financial resources which necessitates borrowing from banks and mortgages. Developed countries of the world widely use bank mortgage lending, while in Ukraine there are a number of problematic aspects that have been preventing from the full use of this type of financial services by customers. This is due to the fact that interest rates on credit funds in Ukraine are excessively high, as well as imperfect risk management technologies. [6-10, 12, 15]

Trends and features of the formation and development of mortgage lending can be determined only through analyzing the current state and dynamics of its development. The mortgage market of Ukraine is studied considering the total debt of banks on the following types of mortgage loans granted to individuals:

- loans for the purchase of housing, secured by the housing;
- loans for consumer purposes secured by housing;
- loans for housing construction secured by the unfinished construction;
- loans for refinancing a housing mortgage loan;
- loans for the purchase of land plot secured by the land;
- loans for commercial purposes secured by housing.

According to Article 1 of the Law of Ukraine "On Mortgage", the concept of mortgage is defined as "a type of security for real estate, which remains in the possession and use of the mortgagor, according to which the mortgagee has the right claims at the expense of the subject of the mortgage mainly to other creditors of the debtor. To create all the conditions for financial stability of the state, as well

as to prevent crises, the development of mortgage lending requires the formation of effective infrastructure of the mortgage market in the country, strengthening state control over the system's balance between the total price of securities and mortgages. Given the unstable political and economic situation in Ukraine in recent years, the development of mortgage lending has slowed down. Extremely strict requirements for lending operations, excessively high interest rates on loans, increased initial deposit value limit, inflated penalties for debts against the background of low incomes of Ukrainians make mortgage lending unattainable for them. The National Bank of Ukraine defines a residential mortgage loan as a "long-term loan granted to an individual, a company of co-owners of apartments or a housing cooperative to finance costs related to the construction or purchase of an apartment or house, taking into account the land plot or homestead), which are provided to the borrower as the property and accepted by the creditor of the housing (with the land under the house or homestead) as the mortgage". [7-11]

Table 1

Comparative characteristics of mortgage lending conditions in Ukraine and EU countries

Country	Amount	Annual tax rate	Term
Great Britain	Up to 4 yearly incomes (ponds sterling)	for residents – 2-5% for nonresidents – 4-6%	5-35 years
Germany	Starting €50,000	2,5-3%	5-20 years
Poland	No fixed amount. Depends on a number of factors	for residents – 3-3,2% for nonresidents – 3.7-4%	20-30 years
Ukraine	UAH 10,000 – 1.4 mln	4.85-43%	up to 10 years

***Source**: compiled by the authors based on their own research*

Studying the mortgage lending in Ukraine requires conducting a comparative analysis of the issue in the highly developed countries aimed to understand the positions of our country in this study. Thus, mortgage lending makes 35% in the GDP of the EU member states, while in Ukraine the figure has reached 6.1%. The figure value of 5 - 10% - indicates a fragmented mortgage market, more than 20% - advanced mortgage market. First of all, it should be noted that the requirements for obtaining mortgage credit resources in the European Union are significantly different from the Ukrainian ones (Table 1).

According to Table 1, mortgages in Ukraine are issued for much shorter periods at much higher interest rates compared to the EU countries. The terms may also be different for non-residents and residents. Mortgage lending conditions are affected by the annual interest rate. In banking practice, everything depends on the terms of credit agreements, namely: the lower the rate the banking institution offers to the client, the larger is the amount or term of credit resources and vice versa. The study on the domestic experience of mortgage lending reveals that in most cases institutions provide up to UAH 1 million mortgage loans for a period of 12 - 24 months at the rates of 20-28% per annum.

Table 2

The main indicators of the mortgage lending market in Ukraine for 2015-2019

Index	Dec.31, 2015	Dec.31, 2016	Dec.31, 2017	Dec.31, 2018	Dec.31, 2019	Dec.31, 2020
Net assets of banking institutions, UAH billion	1254.39	1212.81	1345.14	1448.57	1493.29	1824.06
Loan portfolio of banks, UAH billion	965.09	996.21	1042.80	1118.86	1033.54	1021.35
Banks mortgage loans, UAH billion	101.84	145.68	157.48	168.56	325.97	340.99
UAH	45.15	69.41	77.87	88.46	109.01	122.87
foreign currencies	56.69	76.27	79.61	82.12	216.96	218.12
Official exchange rate, UAH / USD	24.00	27.19	28.16	28.27	23.69	28.27
The average interest rate on mortgage loans in national currency, %	11.8	12.4	16.1	21.2	20.7	18.2
The average interest rate on mortgage loans in foreign currencies, %	11.0	8.5	8.9	9.5	9.8	10.2

Source: *compiled by the authors based on their own research*

The most active banks in providing mortgage loans for real estate, according to the national rating of the Ukrainian Financial Forum are: Globus (Kyiv) - 3.63, Piraeus Bank (Kyiv) - 3.58, Arcada (Kyiv) - 3.03, Investment and Savings Bank (Kyiv) - 2.94, Kredobank (Lviv) - 2.93, Oschadbank (Kyiv) - 2.45. The dynamics of main indicators of mortgage lending in Ukraine in the last six years are presented in table. 2.

Mortgage interest rates are volatile and they fluctuate every year. However, the scale and level of mortgage lending of the pre-crisis period (according to 2008 data, the volume of mortgage loans amounted to UAH 2.5 billion) has not yet been achieved, unfortunately. Although there are positive developments in the mortgage lending, the survey and the study by the NBU found that banks that have not yet provided mortgage lending do not plan doing it in the future.

The problematic aspects of mortgage lending in Ukraine that is worth mentioning include:

- inefficient, unpredictable, long-term and costly for creditors procedure for applying to the courts or writs of execution of the notary for sanctions on the subject of mortgage;
- lack of legislation that regulates the functioning of the secondary mortgage market and the mortgage securities market;
- insufficient development of housing infrastructure and housing market;

- imperfection of the regulatory framework that would regulate the mortgage market in Ukraine, and protect the interests of both the mortgagor and the mortgagee;

- inability of the domestic banking system to operate according to international standards of reinvestment;

- distrust of Ukrainians in banking institutions and awareness of the possibility of losing their houses in the event of bankruptcy the creditor bank and liquidation.

The development of mortgage lending requires s solving many problems in various fields, from the creation of a system of guarantees and transparent conditions for mortgage market participants to the standardization and unification of the mortgage lending procedure. However, in our opinion, expanding the capacity of banks to raising funds is the priority task. This will reduce the mortgage rate and make it more accessible to the public. The deposit financing model currently prevails in Ukraine, which significantly limits the volume of mortgage lending. At present, the Ukrainian banking system has some positive trends in its development including the ones in deposits increase. However, given the relative poverty of the majority of Ukraine's population and the traditional distrust of banking institutions, the deposit model can only provide ancillary funding. The main sources of funding should be represented by funds raised through the refinancing mechanism, *i.e.* through the use of mortgage securities. Our previous studies considered the peculiarities of using the mechanism of securitization of mortgage securities and identified the main problems that accompany its activities and hinder further development. [15, 20, 25 p.75-81]

Under these conditions, government programs aimed at reducing the cost of mortgage lending are particularly important, especially for young people. State support for young people mortgage lending in Ukraine is officially provided through the State Fund for Support of Youth Housing Construction.

Table 3

Youth Lending Fund Programs

The amount of state support	Categories of people who can participate in the program
50% of the property value	Participants of the Anti-Terrorist Operation, IDP citizens of Ukraine who lost their homes due to hostilities in eastern Ukraine, or as a result of the annexation of Crimea and the city of Sevastopol
30% of the property value	Citizens of Ukraine in need of better living conditions Citizens of Ukraine who do not have living space on property rights and members of their families who do not have living space on property rights Citizens of Ukraine whose average monthly income (together with the income of their family members per capita) does not exceed five average monthly salaries

Source: *compiled by the authors based on their own research*

The key activities of the State Fund for Support of Youth Housing Construction are:

• housing loans at preferential interest rates;

• compensation of part of the cost of housing and interest on a mortgage loan;
• lending to legal entities, condominiums;
• improvement of the existing regulatory framework in the field of housing lending;
• creation and support of construction financing funds.

The projects implemented under this fund are listed in Table 3.

The implementation status of programs financed by the state budget and local budgets and managed by the State Fund for Support of Youth Housing Construction is shown in Table 4.

Analysis of the Affordable Housing program implementation reveals that in general the program is being implemented, although at a much slower pace than it was before 2012. It is mainly financed from the state budget and only a small share is covered by local budgets. In general, given the needs of young people in housing and the state of the mortgage market, these results are very low and cannot meet the existing demand.

Table 4

Indicators of implementation of the National socio-economic program "Affordable housing" for 2010-2019

Year	Flats number	State support amount, funded by			
		state budget		local budgets	
		Flats number	UAH mln.	Flats number	UAH mln.
2010	590	590	71.4	-	-
2011	792	792	98.2	-	-
2012	1258	1222	156.6	36	3.0
2013	823	802	91.1	21	1.6
2014	147	144	17.9	3	0.4
2015	11	0	0.0	11	1.3
2016	39	0	0.0	39	6.5
2017	111	91	29.6	20	4.9
2018	263	237	85.3	26	9.8
2019	974	878	346.9	96	26.2
Total	5008	4757	897.0	252	53.7

***Source**: compiled by the authors based on their own research*

The procedure for providing preferential long-term loans to young families and single young citizens for construction (reconstruction) or p urchase of housing is determined by the Regulation "On the procedure for providing preferential long-term loans to young families and single young citizens for construction (reconstruction) and purchase of housing" by the Cabinet of Ministers of Ukraine of May 29, 2001 №584. According to paragraph 3 of Regulation 584, the following categories of young families and single young citizens have the right to receive a loan:

1) a family in which a husband and wife are under 35;

2) a single-parent family in which the mother (father) aged under 35 has minor children (child);

3) single young citizens under the age of 35 inclusive.

In accordance with paragraph 16, the loan is provided for up to 30 years. The first installment of the borrower under paragraph 17 is not less than 6% of the estimated cost of the construction (reconstruction) or expert assessment of the cost of acquisition.

In accordance with paragraph 20 of Regulation 584, the amount of credit for construction (reconstruction) of housing is determined by the regional branch of the Fund, based on the norm of 21 m^2 of living space per family member and an additional 20 m^2 per family, the cost of construction (reconstruction) prices in force at the time of the loan agreement, and insurance costs during the construction.

Regulation 584 also provides preferential terms for lending to young families and single young people, namely: paragraph 30 stipulates that a borrower who has no children repays the loan at an interest rate of 3% per annum of the loan amount; a borrower who has one child is exempt from paying interest on the loan; if a borrower has two children they gets 25 percent of the loan amount repayment at the expense of the budget; a borrower with three or more children - 50 percent of the loan amount.

Table 5

Indicators for providing soft loans to young families for the construction (purchase) of housing for 2010-2019

Year	State budget, UAH ths.	Local budgets, UAH ths.	Own funds (statutory fund), UAH ths.	Loans provided	Housing invested, ths. m^2
2011	59 999.0	40 253.0	31 376.0	444	29.3
2012	24 891.0	37 735.0	56 901.0	359	23.3
2013	70 629.7	33 532.3	35 613.9	407	28.8
2014	24 267.5	36 624.4	23 121.8	253	16.1
2015	0.0	64 694.2	58 956.1	231	14.5
2016	0.0	94 336.7	34 301.6	254	16.3
2017	0.0	115 693.1	63 559.3	319	19.7
2018	0.0	145 679.0	36 968.2	299	19.2
2019	0.0	155 924.1	67 417.8	351	21.6
Total	955 805.2	1 040 369.8	450 751.6	12 985	892.0

***Source**: compiled by the authors based on their own research*

Analysis of the dynamics of young families soft loans provision reveals that this program is has not been financed from the state budget since 2015. All the funding is provided from local budgets and own funds. In 2019, the number of loans issued reached the level of 2012, namely 351 loans which is not very significant and does not meet the housing needs of young people in Ukraine.

Further prospects for these programs funding increasing, given the unfavorable general economic situation, are currently highly questionable. [3, 4, 14]

Conclusions and future perspectives of the study. Therefore, it can be concluded that bank mortgage lending has significant potential in ensuring significant qualitative changes in Ukraine's economy, as it is considered an effective form of attracting long-term cheap financial resources to invest in the development of the real sector of the economy. However, the liberalization of credit policy in the face of intensifying competition threatens to increase the level of credit risk borne by banking institutions. Therefore, special attention is to be paid currently to the formation of an effective mechanism of bank mortgage lending, taking into account the peculiarities of the institutional environment of Ukraine.

International experience and its adaptation to the domestic legal framework are important factors in the formation and development of the mortgage lending mechanism. The adaptation should take into account the conditions inherent in the modern economy of Ukraine, including lack of long-term resources and increased risks. Based on this, it is justified that the development of the mortgage lending system should start with investment in housing, since for housing construction the period from the beginning of investment (mortgage) to the completion of construction is much shorter than that in industrial lending. [2, 3, 21, 25]

Analysis of the Affordable Housing program implementation reveal that in general the program is being implemented, although at a much slower pace than before 2012. It is mainly financed from the state budget and only a small share is covered by local budgets. In general, given the needs of young people in housing and the state of the mortgage market, these results are very low and they can not meet the existing demand.

In 2017–2019, there was a tendency to reduce Oschadbank JSC lending, which is a negative factor. In general, reduction in lending to legal entities and an increase in lending to individuals can be currently observed. In 2017, the volume of loans issued by the bank amounted to UAH 74,502,538 thousand while in 2019 the volume of the loans issued decreased to UAH 62,318,412 thousand. The growth rate for the analyzed period was –16.35%. Loans with payment cards have the largest share in the bank's lending structure. In 2017, the volume of loans with payment cards amounted to UAH 2,336,759 thousand (33.16%), in 2018 - UAH 3,338,155 thousand (36.32%), in 2019 - UAH 4,100,037 thousand (38.55%). During the analyzed period, the volume and unit weight of loans with payment cards tends to increase, the growth rate in 2019 compared to 2017 made 75.46%.

In order to protect the interests of borrowers and create appropriate conditions for the development of the mortgage bank refinancing system, it is appropriate to amend the Law of Ukraine "On Mortgage Lending, Consolidated Mortgage Debt Transactions and Mortgage Certificates" on the unity and interdependence of mortgage debt and mortgage pools financial market elements,

on the need to obtain the borrower's consent to join their principal obligation to the consolidated mortgage debt and the inclusion of the mortgage in the mortgage pool. [6-10]

In order to restructure the bank's assets and optimize cash flows between them, as well as to increase profits, raise the bank's image, social protection of the employees and optimize taxation for strategic development, banking institutions independently or indirectly participate in the creation of private pension funds, insurance companies, professional securities market participants, mutual investment institutions. To restart the mortgage - the economy has stabilized, inflation has to be overcome, the NBU discount rate shows have to show a steady decline throughout the year and continue to decline according to the National Bank.

It is worth mentioning that launching the mortgage lending does not require additional funding from the state budget. The state is only required to carry out regulatory activity. The task of the government is to create the conditions and clear rules for this instrument operation in order to minimize risks and to kick-start economic growth. [4, 15, 17 p.76-87]

Launching the mortgage lending can address a number of social and economic issues. For citizens, it is a real chance to buy their own housing, reduce the outflow of our Ukrainians abroad in search of work, increase the number of jobs in Ukraine. For owners - to increase the volume and pace of construction. In addition, mortgages is a real tool to reduce and balance the risks. After all, if there were a possibility to get the mortgage, people would hurry with paying for cheap housing and investing in risky projects.

Analysis of the dynamics of the banking system development in Ukraine during 2019-2020 reveals that currently the main goal is to ensure the sustainability of the system through achieving systemic stability and reducing the perceptibility of the credit system to external and internal destabilization factors. To achieve this goal, the banking system needs restructuring, which should be comprehensive and systematic, it requires coordination of all participants' efforts in this process - the National Bank of Ukraine, commercial banks, legislative and executive authorities.

Foreign experience in mortgage lending market organization and the role of banks in mortgage lending interesting and instructive for Ukraine. In most foreign countries agricultural, land, mortgage banks are the elements of the system of land-mortgage relations. These banks provide loans to agricultural producers and promote the development of agriculture in general. Many economically developed countries have successfully used the mortgage lending mechanism, with the mortgage bank to be the key link in the chain. Credit operations are an important area of mortgage banks activity.

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RISKS IN THE SYSTEM OF ENSURING FINANCIAL SECURITY OF AGRICULTURAL ENTERPRISES

Introduction. The agricultural sector of Ukraine is a system-forming factor of the national economy, which forms the country's food, environmental and, within certain limits, energy security, which also contributes to the preservation of state sovereignty. The basis of the agrarian sector is agriculture, which is technologically connected with the processing industry, in particular, with the food, light, pulp and paper, and chemical industries. Ensuring the financial security of enterprises in the agrarian sector of the economy as a component of the country's financial security and maintaining its stable level is connected with the need to address food and environmental security, therefore it is a strategic direction of the state's economic policy.

In the conditions of the development of the economy of Ukraine, first of all, the study of the further functioning of the agricultural sector and its effective use of financial resources acquires importance. In this regard, the problem of

financial and economic security of agrarian enterprises, which is based on increased competition between business entities, a lack of resources to maintain the liquidity of their operation, a large number of insolvent and bankrupt enterprises/households, as well as the need for constant adaptation to changing economic conditions.

Analysis of recent researches and publications

Research on the issue of determining the location and role of financial risks in the financial security management system of enterprises was carried out by such foreign and domestic scientists as O. Baranovskyi, I. Blank, M. Dyba, A. Yepifanov, G. Kramarenko, O. Marchenko, M. Pimenov, O. Black and others. However, the variability of the conditions of the economic environment requires further research of this problem, which indicates the relevance of the choice of research direction in scientific and practical aspects.

The purpose of the study there is an outline of the essence and content of risks, as well as the theoretical foundations of financial security of enterprises and determination of the impact of risks on the financial security of agricultural enterprises.

Materials and methods of research

Research and analysis of the developed methodologies for assessing the level of financial security showed that they can be conditionally divided into two main groups: traditional and non-traditional [1, c. 32]. Non-traditional methods are based on the assessment and analysis of risks and the determination of the market value of the enterprise, however, these methods have not become widely used in modern domestic literature. Their main disadvantages are the complexity during the analysis and the need for a significant amount of hard-to-reach information regarding market trends. In addition, the methods formed on the basis of determining the market value, although they demonstrate the real value of the enterprise for investors, do not reflect its financial condition, and therefore, the ability to resist internal and external threats. Among Ukrainian scientists, traditional methods are more common, which are based on the assessment of the reliability and stability of the operation of the enterprise.

Results of the research and their discussion

There is no single approach to the definition of "financial security" in the scientific literature. Thus, in the study of "financial and economic security of the enterprise", O.A. Kyrychenko interprets financial security as the state of the most effective use of corporate resources of the business entity, expressed in the best values of financial indicators of business profitability and profitability, quality of management, use of fixed and working capital funds of the enterprise, the structure of its capital, the rate of dividend payments on the securities of the enterprise, as well as the exchange rate value of its securities [2, p. 23].

Unfortunately, Ukrainian entrepreneurs in the agricultural sector often face the problem of financing. In Ukraine, the practice of financing agricultural enterprises by financial and credit institutions (banks, investment, leasing and trust companies, funds) remains imperfect. The imperfection of the mechanism of

bank lending to agricultural sector business entities is manifested in the small volume of loans granted, high interest rates on loans, the presence of overdue bank loans, and the slowdown in the growth rate of enterprise lending [3, p. 30].

The financial security of an agricultural enterprise is a component of its economic security. The main goal of the economic security of the enterprise is to guarantee its stable and maximally effective functioning now and high development potential in the future.

Analyzing the agricultural sector of the economy, it is worth noting a set of factors that significantly distinguish it from other industries, namely: the economic results of agricultural enterprises directly depend on biological processes, which is one of the risk factors in the conditions of economic activity; the results of the activities of agricultural enterprises depend to a large extent on the natural and climatic conditions of conducting activities; the process of agricultural production involves the involvement of four types of resources, namely: fixed assets, circulating assets, labor and land. It is the involvement of land resources in the process of economic activity that distinguishes it from other spheres of activity; the seasonality of production is decisive for agricultural production and indicates the uneven use of resource potential, as well as the presence of peak periods of product receipts and incomes during the year; the investment attractiveness of the agricultural sector is lower compared to other industries, which is due to a number of factors, in particular, the influence of climatic conditions on the production process and the obtained financial results in the field of crop production and a long period of payback of invested funds in the field of animal husbandry

The effective development of agricultural enterprises directly depends on the material and production base and the level of training of highly qualified employees. The conducted studies show that the share of the agricultural sector of the economy of Ukraine in the total volume of the gross domestic product has a tendency to decrease. Thus, in 2016, the indicated indicator was 11.7%, during the analyzed period it decreased by 2.4% and in 2020 it amounted to 9.3%. It is worth noting the insignificant positive growth dynamics of the share of the agricultural sector in the total volume of GDP in 2020 compared to 2019. Regarding the share of the agricultural sector in the total amount of gross added value, it is worth noting the heterogeneity of the indicated indicator in the range of 10.4%-12.2%. Thus, the lowest value of this indicator was 10.4% in 2019, in 2020 its value increased to 10.8%, which is evidence of positive dynamics. The share of fixed assets for agricultural purposes in 2020 was 4.8% of the fixed assets available in the country, it is worth noting that in comparison with 2016 there is an increase of 1.5%.

As for the specific weight of employed workers in the agricultural sector of the economy, a significant decrease in the number of employed workers is observed, so in 2016 their share was 10.0%, and in 2020 it decreased to 8.0%.

The agricultural sector is directly related to natural conditions (agricultural land occupies 68% of all land) and qualified specialists (the agricultural sector of

the economy employs 2.7 million people6, which is more than 17% of the entire working population). In addition, over the past 20 years, the share of exports of agricultural production has increased 4 times and by the beginning of 2021 was 38% (Fig. 1).

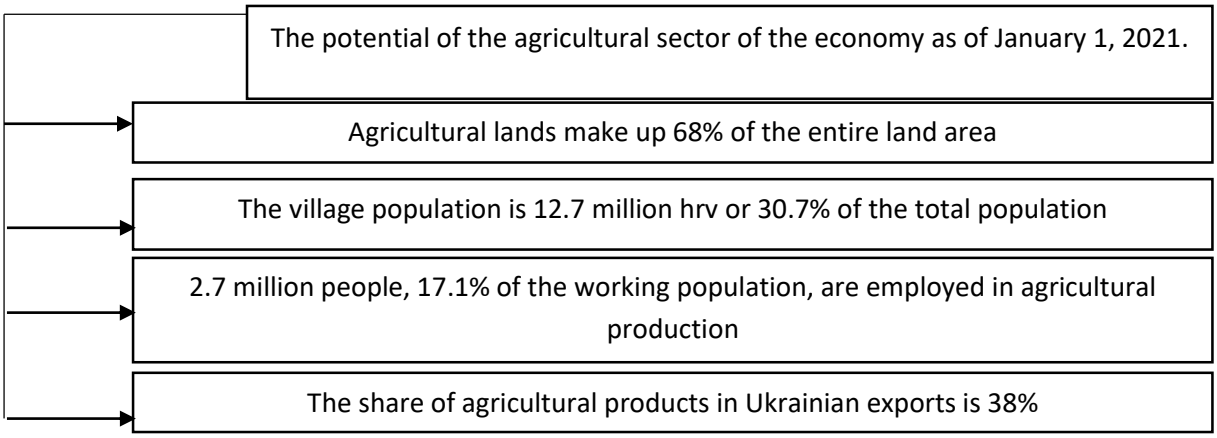

Fig. 1 The potential of the agricultural sector of the economy as of January 1, 2022

Source: *Created by the authors*

When conducting research on the impact of risks on the financial security of an enterprise, it is worth characterizing them from the standpoint of identifying these risks and finding ways to manage them. It is the development of effective management methods that will ensure the financial security of enterprises and minimize their negative impact.

Risks appear primarily as a possible danger of failure of actions taken to ensure the financial security of the enterprise. From this it follows that the main goal of financial risk management should be to ensure the financial security of the enterprise in the process of its operation and development and to prevent a decrease in its market value [4]. That is, it is necessary to understand that there is a close connection between risks (especially internal) and financial security at the enterprise level.

The risks of reducing the financial security of the enterprise should be understood as the possibility of reducing its financial stability and worsening the financial condition of the enterprise as a whole as a result of the influence of external and internal factors when making management decisions in conditions of uncertainty.

When forming a strategy for the development of an enterprise, it is quite difficult to take into account certain risks because they are caused by various factors related to the situation in the country, in particular, COVID 19 had a significant negative impact on financial security, the situation regarding a military invasion of our country will have even worse consequences. Agricultural enterprises have significant problems with harvesting, as well as the sale of agricultural products, in particular to foreign markets, which will be reflected in the financial condition of these enterprises.

Political and economic instability in the country, rising prices of energy resources and other factors pose a significant threat to the financial security of domestic enterprises, especially the real sector of the economy. They do not receive the financial result that was planned under constant operating conditions. Also, under high competition, there are situations when the profitability of the business is relatively high, but there are certain risks: for example, a more powerful rival will have no difficulty absorbing the enterprise. On the other hand, the higher the rate of growth and development, the more the enterprise becomes dependent on external financing, and this threatens the loss of financial stability, self-sustainability and control in the management of the enterprise. Therefore, it is important to identify potential threats in a timely manner, to develop measures to ensure financial security, as well as to achieve the stability of the enterprise in the long term [5, p.111].

In the process of assessing the state and level of financial security of the enterprise, the following are analyzed: financial reporting and results of the enterprise (solvency, liquidity, business activity, financial independence, creditworthiness, structure and use of capital and profit); the competitive state of the enterprise on the market (the share of the market held by the business entity, the introduction of innovations, the impact of scientific and technical progress, the level of enterprise management).

The analysis of the main indicators of the company's financial condition indicates their increase during the studied period. Thus, the coverage ratio in 2016 was 1.192, by 2020 it increased by 35% and amounted to 1.612. The growth of this indicator in dynamics is a positive trend because it indicates an increase in its solvency. The value of the coefficient of autonomy increased more than twice and in 2020 was 0.542 and is within the normative value, which indicates the financial independence of the enterprise7, but in 2016 its value was only 0.24, that is, agricultural enterprises had high financial risks.

Table 1

Dynamics of the main indicators of the financial condition of agricultural enterprises

Indicators	2016	2017	2018	2019	2020	2020 у % до 2016
Coverage ratio	1,192	1,536	1,564	1,546	1,612	135,23
Coefficient of autonomy	0,24	0,479	0,491	0,507	0,542	225,83
Asset turnover ratio	0,306	0,711	0,803	0,868	0,851	278,10
The coefficient of profitability of assets	0,059	0,076	0,072	0,091	0,072	122,03
Return on equity ratio	0,25	0,16	015	0,17	0,13	52,00

Source: *calculated by the authors*

During 2016-2020, the asset turnover ratio increased more than 2.7 times, which is evidence of the efficiency of the use of current assets by agricultural

enterprises, in 2020 the specified indicator was 0.851.

The analysis of the dynamics of the coverage ratio in enterprises of various types shows that there was a significant increase in it in small agricultural enterprises from 1.093 in 2016 to 1.545 in 2020, which indicates an increase in their solvency, with regard to large enterprises, negative dynamics are observed, since the indicated indicator decreased almost by 10%, however, remains within the norm (Fig. 2). As for the coefficient of autonomy, its growth is monitored in all studied enterprises, however, in small enterprises it increased more than 3.5 times and in 2020 amounted to 0.513, while in medium and large enterprises the growth is 44 and 31%, respectively (Fig. 3).

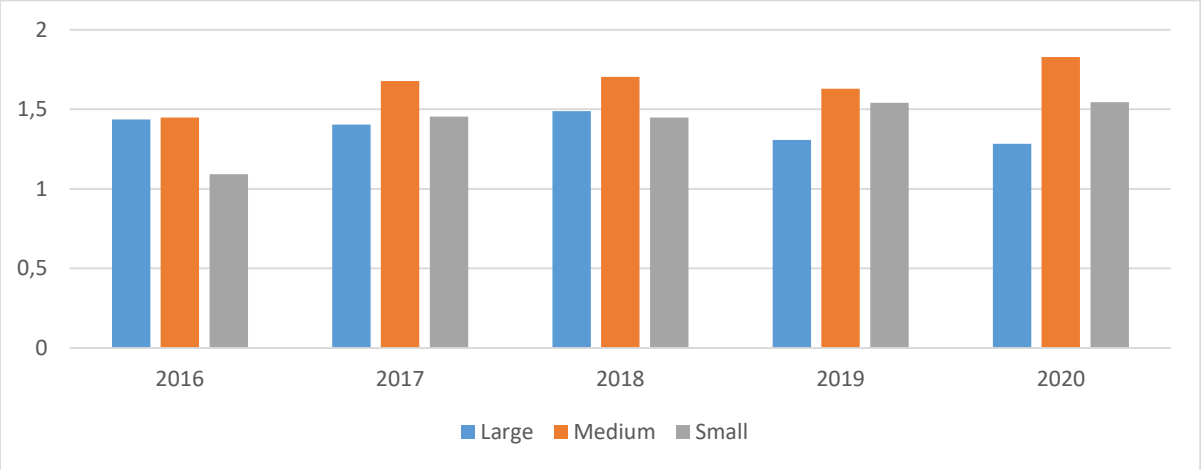

Fig.2 Dynamics of the coverage ratio in enterprises of various types
Source: *Created by the authors*

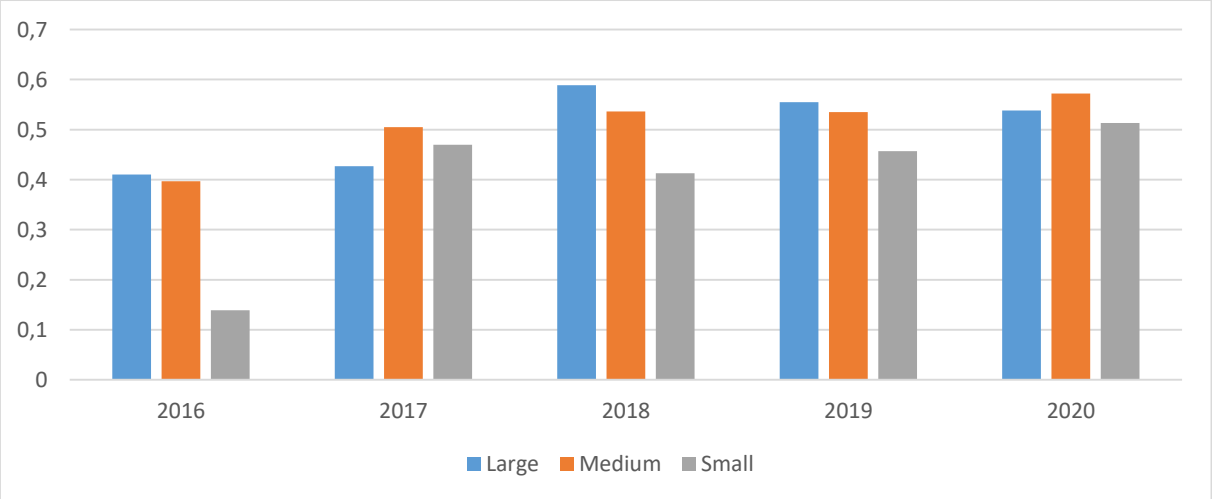

Fig.3 Dynamics of the autonomy ratio in enterprises of various types
Source: *Created by the authors*

The conducted studies clearly indicate the existence of a significant number of threats and risks that significantly affect the financial security of agricultural enterprises. It is worth noting that financial security is formed under the influence

of external and internal factors, which should be considered depending on the object that determines their impact. Constant monitoring and assessment of the impact of the specified factors will ensure the achievement of the appropriate level of financial security.

In order to ensure the financial stability of the industry over a long period, it is necessary to constantly monitor the financial condition of its business entities, promptly respond to changes, study their regularity and the reasons for deviation from the critical limit of a satisfactory assessment on the basis of financial stability, solvency, take measures to increase the efficiency of financial -economic activity. To increase financial security, it is necessary to organize constant monitoring, ensure a high level of capitalization, develop and implement methodological security.

Conclusions and future perspectives of the study

Therefore, ensuring the appropriate level of financial security largely depends on how effectively enterprises are able to counter internal and external threats. First of all, it is necessary to identify existing risk situations in a timely manner in order to minimize their impact on the company's activities. In the agricultural sector, enterprises face a significant number of negative factors that directly affect their financial condition, in particular, low resource potential due to the use of outdated equipment, a lack of financial resources and the effectiveness of financial management. One of the directions of increasing financial security is the attraction of investment resources and the use of various types of innovations at all stages of the production process.

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PROBLEMS OF CORPORATE TAX BUDGETING: EVIDENCE FROM UKRAINE

Introduction. In modern business conditions in Ukraine, tax administration is complicated. This is confirmed by the unsatisfactory position of Ukraine in the Doing Business. For example, Ukrainian corporations spend 328 hours per year to pay the 3 major taxes (corporate income tax, VAT or sales tax and labor taxes and mandatory contributions). In the OECD High Income the time to pay taxes is 158.8 hours per year; in the European Union (EU) the time to pay taxes is 171.5 hours per year; in Europe & Central Asia the time to pay taxes is 213.1 hours per year. Total tax and contribution rate in Ukraine is 45.2% of profit against 39.9% in the OECD High Income, 39.7% in the EU, 31.7% in Europe & Central Asia. It's a high level of taxation and is inferior in the region (Europe & Central Asia) only to Tajikistan, Belarus, Russia [1]. The issue of optimization of taxation and corporate budgeting is actualized by the complexity of tax administration in Ukraine, constant changes in tax legislation and the possibility of adjusting the corporate tax burden. Therefore, the improvement of corporate tax budgeting at Ukrainian enterprises under the influence of classic challenges of tax administration and modernization of work taking into account the popularization of corporate budgeting is gaining relevance.

Analysis of recent researches and publications. Theoretical debates on the study of tax budgeting was pioneered in Ukrainian scientific literature by Melnykova and Kositsky [2], Shkromyda, Hnatiuk and Melnyk [3]. The problems of corporate tax budgeting are studied mainly in the scientific areas of corporate tax planning (Armstrong et al. [4], Bashir and Zachariah [5], Olayiwola and Okoro [6], Wilde and Wilson [7]), corporate tax disclosure (Mgammal [8]) opposition to aggressive tax planning (Brekhov [9]).

Purpose of the study is to investigate the problems and prospects of applying corporate tax budgeting.

Materials and methods of research. The current study examines the problems and prospects of applying corporate tax budgeting using general scientific methods (induction and deduction) and special methods (statistics

analysis and cluster analysis). The relevance of corporate tax budgeting is proven by the example of Ukrainian corporations. The sample of corporations includes 11 corporations. The corporations belong to the processing industry (codes of NACE are 10.11, 10.13, 10.41, 10.51, 10.71, 10.72, 10.82)**.** The corporations operate in Donetsk region, Sumy region, Rivne region, Ivano-Frankivsk region, Kyiv region, Kharkiv region, Dnipropetrovsk region, Zaporizhzhia region, Vinnytsia region. The current study covers a period of five years (2016-2020).

The effective corporate tax rate (ECTR) is determined according to formula 1 that based on the data of public financial statements.

$$ECTR = \frac{corporate\ income\ tax}{net\ profit} \quad (1)$$

Results of the research and their discussion. The Ukrainian system of corporate taxation provides for the payment of direct and indirect taxes, national and local taxes. The sustainability of the tax system according to the list of taxes has been approved since 2015. Corporations have an obligation to pay corporate income tax; personal income tax; VAT; excise tax; environmental tax; rent; duty property tax; a single tax as an alternative to the income tax of agricultural enterprises.

The aggregate corporate tax burden is formed under the influence of many factors. There are a type of activity, a type of property, a type of production. Boiko, Varchenko, Drahan determined that the role of extractive industry, whole sale and retail trade, processing industry and agriculture in the formation of tax revenues of the Consolidated Budget of Ukraine [10, p. 76].

Table 1

Effective corporate tax rate of the Ukrainian corporations, %

No	Corporations	2016	2017	2018	2019	2020
1	PrJSC “Ukrainian Becon”	n/l*	20,1	84,6	n/l	36,7
2	PrJSC “Mondelez Ukraina”	13,9	20,1	18,9	18,8	19,1
3	PrJSC “Dubnomoloko”	n/l	18,1	18,0	19,0	21,6
4	PrJSC “Rivne confectionery factory”	18,0	17,9	18,0	18,0	15,4
5	PJSC “Manufacturing and trading confectionery firm “Lasoshchi”	18,3	n/l	n/l	n/l	n/l
6	PrJSC “Confectionery factory “Lahoda”	19,7	19,2	17,5	18,0	19,2
7	PrJSC “Kyiv confectionery factory “Roshen”	15,0	29,0	14,9	15,3	28,5
8	PrJSC “Kharkov biscuit factory”	21,6	13,7	15,5	16,4	14,1
9	PrJSC “Dnipropetrovsk OEP”	18,0	17,8	n/l	n/l	19,3
10	PrJSC “Pology OEP”	n/l	27,2	n/l	25,7	28,3
11	PrJSC “Trostyanetsk myasokombinat”	31,7	n/l	n/l	n/l	n/l

*n/l – net loss

The tax burden can differ significantly for corporations of the same type of economic activity. This indicates the need for corporate tax budgeting and

available reserves for tax liability optimization. Using the example of corporate income tax, we determined the level of ECTR in a sample of the Ukrainian corporations (table 1 and table 2). The calculations were made based on data from 2016-2020, when the basic corporate income tax rate was 18%.

ECTR exceeded the base corporate income tax rate in the studied sample of Ukrainian corporations by 8.5% in 2016, 13.1% in 2017, 48.8% in 2018, 4.1% in 2019, 24.7% in 2020. The estimated values of ECTR allow to make conclusion about significant differentiation of ECTR from 13.7% to 84.6% ($\overline{ECTR}$=21.5%, S_{ECTR} = 11.4%, CV_{ECTR} = 53.2%).

Table 2

Descriptive statistics of the variables

Period	Obs.	Mean	Std. Dev.	CV	Min.	Max.	R
2016	8	19,5	5,5	28,1	13,9	31,7	17,9
2017	9	20,3	4,8	23,6	13,7	29,0	15,2
2018	7	26,8	25,5	95,4	14,9	84,6	69,7
2019	7	18,7	3,3	17,7	15,3	25,7	10,4
2020	9	22,4	7,3	32,5	14,1	36,7	22,6

The Dendogram of the ECTR level (Fig. 1) demonstrates different needs and priorities of tax policy depending on the results of the retrospective analysis.

PrJSC “Rivne confectionery factory” and PrJSC “Kharkov biscuit factory” are recommended to keep ECTR at the level of previous years. PrJSC “Mondelez Ukraina”, PrJSC “Confectionery factory “Lahoda”, PrJSC “Dnipropetrovsk OEP”, PrJSC “Dubnomoloko” are recommended to reduce ECTR in future periods to the base corporate income tax rate due to the reduction of positive tax differences and the introduction of effective corporate tax budgeting. PrJSC “Ukrainian Becon”, PrJSC “Pology OEP”, PrJSC “Kyiv confectionery factory “Roshen” have a critical situation with the tax burden. Corporate management should immediately develop changes to tax policy, review and minimize positive tax differences, and implement effective corporate tax budgeting.

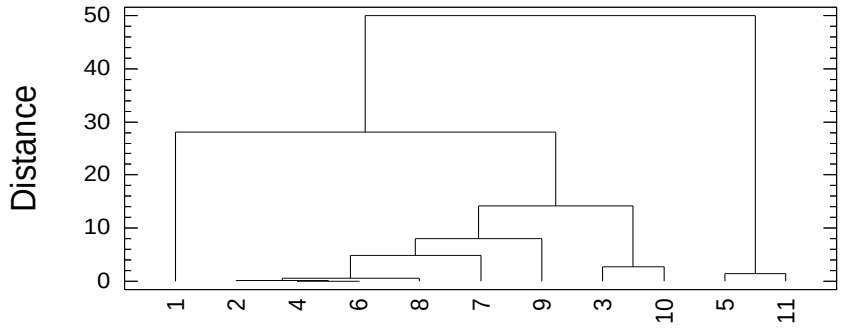

Fig. 1. Dendogram of the ECTR level*

*the numbers in the fig. 1 correspond to the numbers in table 1

The introduction of corporate tax budgeting at enterprises requires the development of a tax budgeting mechanism. The organizational and economic mechanism of corporate tax budgeting in the author's edition provides for the justification of such elements as: purpose, tasks, subjects and objects, legal regulation, etc. (Fig. 2).

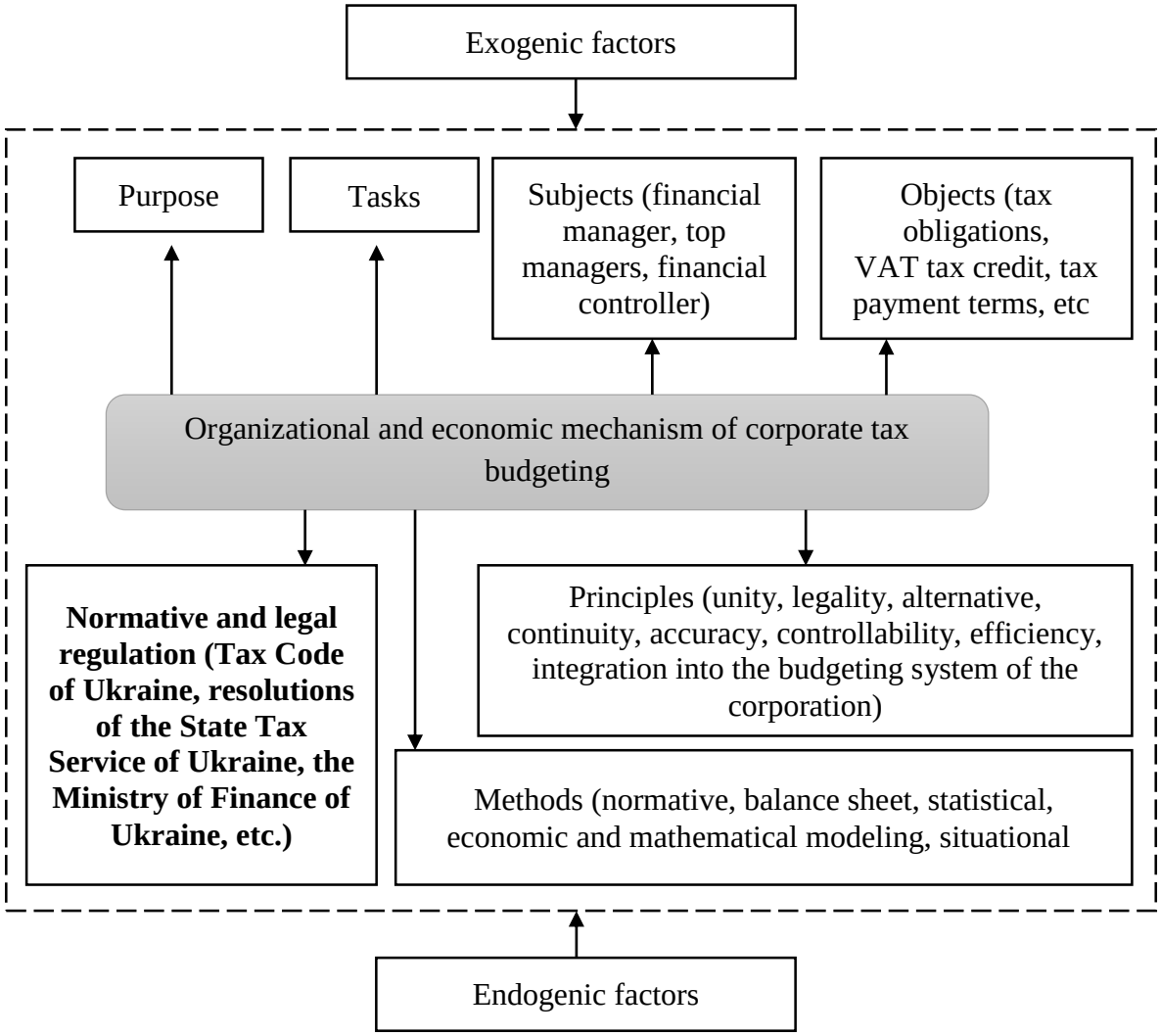

Fig. 2. Organizational and economic mechanism of corporate tax budgeting

The purpose of corporate tax budgeting is to ensure the optimization of tax obligations in conditions of instability of the external and internal environment, as well as to prevent violations of tax legislation.

The tasks of corporate tax budgeting can be grouped according to the following directions:

– optimization of the management decision-making procedure and their coordination with other budgets;

– motivation for effective use of financial resources and balancing of cash flows;

- increasing the company's profit due to the optimization of tax obligations, etc.

Corporate tax budgeting should be carried out by a financial manager or financial controller under the control of top managers and other subjects with control powers.

The objects of corporate tax budgeting are tax liabilities for all taxes for which the company is a payer or tax agent, VAT tax credit, tax payment terms, tax reporting deadlines.

Corporate tax budgeting provides a system of budgets for individual taxes. The budgeting of each type of tax does not involve a separate analytical calculation, because the formation of tax budgets is closely related to the budgeting of operating and consolidated budgets [3, p. 143]. The matrix of the relationship between tax budgeting and operating (financial) budgets for the studied enterprises (processing industry) is given in table. 3.

Conclusions and future perspectives of the study. Corporate tax budgeting is a systematic activity aimed at building a tax policy in compliance with the norms of the current tax legislation and the corporation's development strategy aimed at optimizing tax obligations.

Table 3

Interrelation matrix of corporate tax budgeting and budgets

Budgets	Corporate tax budgeting					
	corporate income tax	VAT, duty	excise tax	personal income tax	environmental tax; rent	property tax
Sales budget		+	+			
Production budget		+	+		+	
Direct material						+
Direct labor				+		
Factory overhead				+	+	+
Cost of goods sold budget	+			+	+	+
Selling expense budget		+	+			
Administration exp. budget						
Budgeted balance sheet						+
Budgeted income statement	+					
Cash budget	+	+	+	+	+	+

An organizational and economic mechanism of corporate tax budgeting and a matrix of the relationship between corporate tax budgeting and budgets have been developed.

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CALCULATION OF MOLECULAR PROPERTIES OF SOME CONDENSED THIOPHENES

Abstract

The thiophene derivatives (condensed thiophenes), which are organosulfur compounds, are present in petroleum and other fossil fuel products. The sulfur atom in this five membered ring acts as an electron donating heteroatom by contributing two electrons to the aromatic sextet, and thiophene is thus considered to be an electron-rich heterocycle. The presence of sulfur compounds in petroleum products often leads to harmful effects but the available experimental data are very scarce, which necessitates the use of alternative methods. The aim of this

work was to calculate and analyze molecular properties of some condensed thiophenes by the Molinspiration Cheminformatics software.

***Keywords*:** condensed thiophenes, molecular properties, Molinspiration Cheminformatics software.

Introduction

Next to carbon and hydrogen, sulfur is the most abundant chemical element in petroleum, occuring at concentrations of over 10 wt% in some heavy oils [1, 2]. Increased use of sulfur-rich petroleums and increased appreciation of the environmental impact of sulfur combustion products have led to a growing interest in understanding the chemical nature of the sulfur in oil and oil precursors [1,3].

Several factors are generally believed to affect the concentration of sulfur in oil. Among these are source characteristics (marine vs. terrestrial), presence or absence of dissolved sulfate, depositional environment (carbonate vs. elastic sequences) [4], thermal maturity [5], thermochemical sulfate reduction [6], and the extent of biodegradation [1, 7].

Chemical characterization is essential both for general understanding of organosulfur transformations associated with petroleum formation and alteration, and for the development of organosulfur biological markers. Unfortunately, chemical characterization of sulfur-containing compounds in heavy oils, asphaltenes, source-rock bitumens, and kerogens is difficult. There is no generally applicable analytical method that is capable of nondestructive chemical analysis for sulfur [1].

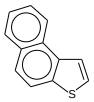
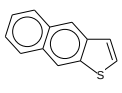
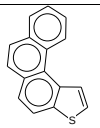
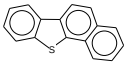
The aim of this work was to calculate and analyze molecular properties of some condensed thiophenes by the Molinspiration Cheminformatics software.

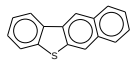
Experimental

Compounds. Structures of some condensed thiophenes (naphtho[2,1-b]thiophene, naphtha[2,3-b]thiophene, phenanthro[4,3-b]thiophene, benzo[b] naphtha[2,1-d]thiophene and benzo[b]naphtha[2,3-d]thiophene) (Table 1) [8].

Table 1

Name and structure of some condensed thiophenes

№	Name of compound	Structure of compound
1	naphtho[2,1-b]thiophene	
2	naphtho[2,3-b]thiophene	
3	phenanthro[4,3-b]thiophene	
4	benzo[b]naphtha[2,1-d]thiophene	

5	benzo[b]naphtha[2,3-d]thiophene	

Molinspiration software. The Molinspiration software was used for calculation of important molecular properties (logP, polar surface area, number of hydrogen bond donors and acceptors and others), as well as prediction of bioactivity score for the most important drug targets (GPCR ligands, kinase inhibitors, ion channel modulators, nuclear receptors) [9].

LogP (octanol/water partition coefficient). LogP is calculated by the methodology developed by the Molinspiration software as a sum of fragment-based contributions and correction factors. The method is very robust and is able to process practically all organic and most organometallic molecules [9].

"Rule of 5" Properties is a set of simple molecular descriptors used by Lipinski in formulating his "Rule of 5". The rule states, that most "drug-like" molecules have logP <= 5, molecular weight <= 500, number of hydrogen bond acceptors <= 10, and number of hydrogen bond donors <= 5. Molecules violating more than one of these rules may have problems with bioavailability. The rule is called "Rule of 5" because the border values are 5, 500, 2*5, and 5 [9].

Results and Discussion

The Molinspiration software has been used for predicting parameters - molecular physicochemical properties (Table 2) of the condensed thiophenes. Data of the calculation of molecular physicochemical properties of the thiophene derivatives are presented in Table 2.

Partition coefficient (LogP) is a significant parameter used to determine molecular hydrophobicity or lipophilicity. LogP affects the absorption, bioavailability, interactions, metabolism and toxicity of molecules of a condensed thiophene. LogP value of the condensed thiophenes was found to be from 4.06 to 5.37 (Table 2).

Table 2

Calculation data of the molecular physicochemical properties of the condensed thiophenes

№	LogP[a]	TPSA[b]	n atoms[c]	MW[d]	nON[e]	nOH NH[f]	Volume[g]	nrotb[h]	№ of violations[i]
1	4.06	0	13	184.26	0	0	162.74	0	0
2	4.06	0	13	184.26	0	0	162.74	0	0
3	5.22	0	17	234.32	0	0	206.73	0	1
4	5.37	0	17	234.32	0	0	206.73	0	1
5	5.37	0	17	234.32	0	0	206.73	0	1

a: LogP - Logarithm of partition coefficient between n-octanol and water (miLogP); b: Topological polar surface area (TPSA); c: Number of nonhydrogen atoms (natoms); d: Molecular weight (MW); e: Number of hydrogen-bond acceptors (O and N atoms) (nON); f: Number of hydrogen-bond donors (OH and NH groups)

(nOHNH); g: Molecular volume (volume); h: Number of rotatable bonds (nrotb);. i: Number of Rule of 5 violations (nviolations).

TPSA (Topological Polar Surface Area) is a very useful physiochemical parameter of molecule that gives the information about polarity of compounds. This parameter was evaluated for analyzing molecule transport properties. Polar surface area is the sum of all polar atoms mainly oxygen and nitrogen including attached hydrogen [10]. Topological polar surface area (TPSA) is closely linked to the hydrogen bonding potential of a molecule and is a very good predictor of molecule transport properties like intestinal absorption and blood brain barrier penetration. TPSA of the thiophene derivatives was found to be with value 0. The thiophene derivatives is not flexible as it contains 0 rotatable bonds [10].

The thiophene derivatives had less than 10 hydrogen bond acceptors (O and N atoms) and the number of hydrogen bond donors (NH and OH) is less than 5. Some of the thiophene derivatives have one violation (for logP) according to Lipinski's rule of five. Therefore, the calculated molecular properties of the condensed thiophenes show probable good oral activity.

Conclusion

In the present work, the molecular properties of five condensed thiophene were claculated by the Molinspiration Cheminformatics software. The calculated molecular properties of thiophene derivatives do not deviate from Lipinski's rule. Therefore, condensed thiophene derivatives are likely to have good oral activity.

Acknowledgements

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ASSESSMENT OF THE POTENTIAL DEVELOPMENT OF CROWDFUNDING IN UKRAINE

Introduction. Funding support of business entities requires taking into account certain legal and regulatory aspects, principles, forms, mechanisms and tools.Currently, one of the most popular sources of financing in the world is crowdfunding based on online platforms.

Analysis of recent researches and publications. The activity of business organizations has a so called «life span" of every economic process, which goes from the definition of a business idea and the launch of the activity itself to the organization, attraction and distribution of the necessary financial resources, possible risks and benefits from their attraction. Funding support for the activities of any business activity are mainly focused on the own or borrowed funds.

Nowadays, crowdfunding has become one of the most common sources of funding in developed countries, while it is only becoming popular in developing countries. In recent decades, the discourse about the integrity of crowdfunding research and scientific rigor has received increasing attention, especially in the scope of scientific production and related issues.Among the various are those of an ethical and methodological nature, which oppose the reliability of the results. The theoretical aspects and peculiarities ofcrowdfunding operations were considered in their works by O. Vasiliev [1], L. Elisieieva [2], K. Kovtunenko [3], S. Matiushchenko, O. Nesterenko, A. Ovchinikova [4], V. Ogorodnyk[5], Yu. Petrushenko [6] and others.

Purpose. Research of the theoretical and methodological aspects of crowdfunding as a tool for attracting an alternative source of financial support for business entities.

Materials and methods of research. The methodological basis of this study was formed on the basis of general scientific principles and methods that outline a systemic and dialectical approach to crowdfunding as an innovative financial

support tool. In particular, such methods and techniques as scientific abstraction, theoretical generalization, structural-logical analysis, induction, deduction, comparison, etc. were used during the research.

Results of the research and their discussion. The use of social innovation projects to solve financial problems through the active involvement of civil society is a promising and popular direction of social development. However, the priority of social goals over economic results in the implementation of such projects significantly limits the speed and efficiency of their implementation.

Currently, both in the world and in Ukraine, the number of new companies that receive financial resources using open crowdfunding platforms (which serve as intermediaries between founders and potential sponsors) via the Internet, for the development of their own business projects or ideas, has significantly increased.

The most successful crowdfunding platforms try to build public trust in crowdfunding as a viable funding /investment option. In this case, they intend to convey the information to users about crowdfunding and promote the adoption of crowdfunding. Mistrust of crowdfunding is widespread, so platforms need to explain what crowdfunding is and promote its use, often with an educational function.

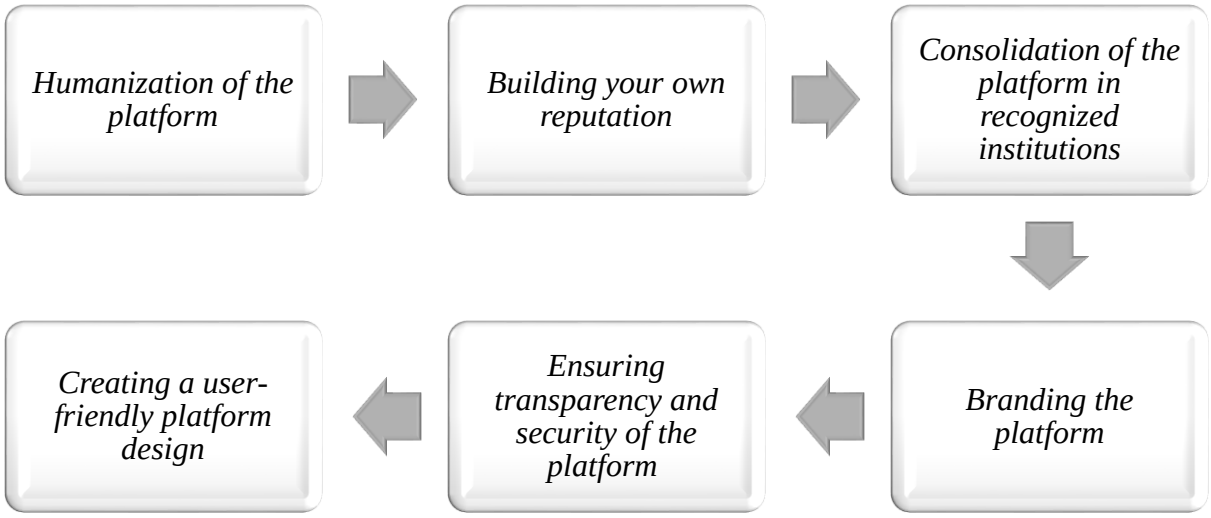

Fig. 1. Peculiarities of creating investor confidence in the crowdfunding platform[7]

At the level of each specific stage of a crowdfunding platform project, investors can be trusted by two main practices: attractiveness of the project and demonstrating the support received for each of its projects. To increase the attractiveness of their projects, some investment and debt platforms have developed other tools, such as reports on the overall assessment of projects or the classification of loans and projects according to risk. Thus, platforms are actively involved in the trust transfer process: they act as a third party that openly vouches for certain campaigns [8].

Insufficient trust will make crowdfunding viable as an alternative financing option, both for entrepreneurs and potential micro-investors. Different

crowdfunding platforms carry different levels of risk. That is why it is necessary to inform all stakeholders about the progress of the development of funds, about delays, disagreements, successful finalization of the collection every day, technically and steadily. Otherwise, it will be impossible to count on positive crowdfunding in the future.

Having become quite widespread in the world, crowdfunding as a tool for attracting funds for various business projects, goals and ideas has conquered the Ukrainian market as well. International crowdfunding platforms are actively used in Ukraine. One of the most famous crowdfunding platforms is*GoFundMe,Kiva,Kickstarter,Indiegogoetc.*

The most active Ukrainian crowdfunding platforms are *Spilnokosht, Ukrainian Charity Exchange, Na-Starte*, etc.

Spilnokosht is the largest crowdfunding platform in Ukraine, created in 2012 by the public organization *Garage Gang*. Thanks to *Splinkokosht*, funds have been accumulated for a large number of projects: startups, environmental and public actions, work of mass media, organization of various festivals and performances, filming of music videos. Such projects at *Spilnokost* are *EdEra Books* - an interactive library, *LUK media platform*, *HEAT and LIGHT at GarMIDer*, *hangar-stage*, *TaleAR* - books with the magic of augmented reality, public television, the *Rover Film Festival*, the *Let's Make Ukraine campaign clean* and others. The *Spilnokosht* platform receives 10% of the raised funds onlyin case of successful finalization of the project. The period for which the Author of the Project wishes to collect the total amount of funds indicated by him cannot exceed 100 calendar days from the date of project publication on the website.

The first Ukrainian charitable fundraising online platform *dobro.ua* began in 2011 with the creation of the International Charity Fund *Ukrainian Charity Exchange* on the initiative and support of the *Viktor Pinchuk Foundation*. The main goal was to create an independent, effective and fraud-proof tool to support and develop charity in Ukraine through the active involvement of its citizens based on the best international practices and principles of charitable activity [10].

Over 9 years of operation, the platform has raised more than UAH 395,000,000 for charity, supported about 6,000 projects, and won many national competitions and charity ratings.

The projects on the website were supported by more than 1.2 million donors, and more than 200 companies became partners, including powerful business representatives such as *Kyivstar, WOG, Winner, Monobank, Danon, Vodafone, Bayer, Amway, Nova Poshta, Courage, Data Group, Coca -Cola* and many others. The platform is also a leader in personal fundraising. Over the years of its existence, more than 150 opinion leaders, stars, journalists, TV presenters, athletes, politicians, and bloggers have collected their personal fundraising campaigns to solve social problems. The site 24/7 freely monitors the progress of fundraising for all social projects (from medicine to support of local community initiatives) [11].

Table 1. Peculiarities of activity of the "Ukrainian Charity Exchange" IBF of the dobro.ua platform*, for 2012-2020 [11]

Indicator	2012	2013	2014	2015	2016	2017	2018	2019	2020
Supported projects, pcs	45	163	358	608	778	880	926	1010	783
Income, UAH million	1.25	9.42	23.41	26,16	36.54	55.29	56,77	66.74	86.75
Expenses, UAH million, of which:	1.05	8.65	22.96	24.06	34,21	53.69	52.91	67.85	85.29
health, %	22.3	85.1	88.6	83.8	87.6	83.7	77.5	72.7	63.4
social assistance, %	12.1	5.7	5.5	4.4	3.5	4.4	4.5	6.3	4.4
education and science, %	3.1	1.6	0.7	0.9	0.3	1.7	2.7	1,2	0.8
ecology and animals, %	19.4	1.3	0.8	0.6	0.2	0.3	0.4	0.5	0.3
culture and sports, %	6.2	0.2	0.1	0.4	0.2	0.8	1.1	0.3	0.1
community support, %	1.1	0.2	0.5	0.3	0.4	0.4	0.4		0.4
own charity programs, %	28.3			3.6	1.7	0.8	3.0	7.6	21.6
Administrative expenses, %	7.5	5.9	3.8	6.0	6.1	7.9	10.4	11.4	9.0
Help was received by: institutions, organizations, pcs	45	65	147	165	181	220	245	255	217
population, households, of which targeted assistance:	1500	18000	24000	23000	26000	35000	36000	39000	50000
to children	75	120	280	411	463	379	569	415	387
adults	10	16	70	102	115	108	176	92	32

*Compiled by the author based on statistical data from the dobro.ua platform

In 2013-2014, native platforms, in particular the *Ukrainian Charity Exchange* and *Spilnokosht*, created all the opportunities to reach the Ukrainian public with civil society initiatives and social entrepreneurship, raised funds with the help of crowdfunding and literally sponsored Euromaidan participants. Since the Revolution of Dignity, crowdfunding has gained popularity in Ukraine as an innovative fundraising tool for various purposes, starting with the provision of humanitarian aid to victims of the military conflict through platforms such as

families.org.ua and *People's Project*, and ending with community development and social innovation [12].

The Na-Starte platform is a crowdfunding platform created in the winter of 2013-2014, with the main office in Odessa, which has a completely new approach to funding business ideas (creative projects in the field of culture, art and technology). The platform allows attracting sponsorship contributions for the launch of interesting and socially significant projects, establishing mutually beneficial cooperation for the authors of projects and their donors, and also helps to understand the operating mechanisms in the business process, to understand the advertising component, to understand the principles of visual design, etc. Only in case of successful finalization of the project, *the Na-Starte* platform receives 8% of the funds raised. In case of unsuccessful finalization, funds are returned to investors' accounts.

The coronavirus pandemic (2020-2022), martial law in Ukraine caused crisis phenomena that have a mixed impact on crowdfunding platforms. It can be noted that the present situation has both positive and negative consequences for crowdfunding. Among the most decisive positive consequences is the burst of charitable and volunteer initiative groups in Ukraine, whose activity gradually declined after the peak in 2014. The treacherous attack on the territory of Ukraine by Russian troops mobilized international and local investors, who direct their own funds to counteract and overcome the consequences of Russia's war against Ukraine.

Conclusions and perspectives of the study. Crowdfunding has many advantages, but there are also potential risks: insufficient guarantees in achieving the goal of business entities (it is worth analyzing all possible ways in which a fundraising business project can be successful); intellectual property becomes publicly available (the need to apply certain rules regarding the protection of intellectual property rights); underestimation of costs; reputational damage; unconscious violation of legislation (it is worth familiarizing yourself with EU legislation and national legislation in the field of crowdfunding); problems with the possibility of getting into a fraudulent crowdfunding platform; responsibility to investors and trends in the dynamics of investors, etc.It should be noted that more successful and consolidated crowdfunding platforms tend to use organizational experience at all levels (platform trust, user trust, project trust, and crowdfunding trust in general), while smaller and less well-known platforms focus predominantly on building trust in published projects and campaign promoters.

Compilation and adaptation of existing evaluation and decision-making methods is necessary for the development of crowdfunding in Ukraine. The main contribution to the development of crowdfunding platforms lies in the descriptive application, both from the point of view of management tools, and in the development of a method that allows attracting investors to innovative projects in the context of the appropriate institutional environment.

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ANALYSIS OF FOREIGN EXPERIENCE IN THE DEVELOPMENT OF MEDICINAL PLANT GROWING

Annotation. Cultivation of medicinal plants in Ukraine is at the stage of formation and requires the development of an effective strategy for the future, taking into account the current crisis. In this regard, an attempt was made to evaluate the strategies of medicinal plant development in certain countries of the world with the aim of their further adaptation and approval in Ukraine in the post-war period.

***Keywords*:** *branch of medicinal plant growing, development strategy, medicinal plants.*

Introduction

Since the beginning of 2022, Ukraine has been in a state of war, which has worsened the physical and psychological condition of thousands and thousands of people, they need and will need treatment for a long time. This is one of the factors of increasing attention to the spread of production and processing of medicinal plants. At the same time, the cultivation of medicinal plants in Ukraine is at the stage of formation and requires the development of an effective strategy for the future, taking into account the current crisis.

Analysis of recent researches and publications

In recent decades, human development has been affected by a number of diverse and catastrophic cataclysms. These are the mentioned military conflicts, and all kinds of negative natural phenomena, and the Covid 2019 pandemic. All of them, to a certain level, threaten, first of all, the lives and health of people, which determines the necessity of ongoing development of medicine and pharmaceuticals. In this regard, the healing properties of medicinal plants have once again attracted the attention of scientists and practitioners around the world since the late twentieth century. There is growing evidence of the significant value and potential of medicinal plants. Among other non-wood forest products, they are considered as a key element of sustainable forestry and economic development [6].

Medicinal plants contain a significant amount of various vitamins, acids, micro- and macronutrients. They can be used in natural and converted form in traditional and scientific medicine as an effective natural tool for the treatment

and prevention of various diseases. All of them are crucial for the conservation of biodiversity on the planet, for the development of trade and economic growth. Also the important thing is that medicinal plants and medicinal plant raw materials are used in many fields. Medicinal plant growing branch, including essential-oils crops and spices, is considered to be one of the most profitable one in the global agro-industrial complex, which can be the argument in favor of its development [2].

Mafimisebi T., while examining the international market of medicinal plants and products of their processing in general and the African market in particular, notes that it is very volumetric. Thus, in Egypt, medicinal and aromatic plants are a significant source of national income. More than 50 species of medicinal plants cultivated in Egypt have significant economic value for export, so the areas for them are growing steadily [3].

In turn, American scientists Jeanine M. Davis and Richard E., who are engaged in various studies of the development of the medicinal plant industry, emphasize that herbal medicines and aromatherapy belong to the category of sales that are growing at the fastest rates in the modern world [1].

World trade in plant products is 32.702 billion US dollars, the share of Asian turnover is $ 14.505 billion out of 6.634 million tons and is 44.35 percent and 53.13 percent of world trade in value and volume, respectively [5].

In Ukraine, the market of medicinal plants has a high level of concentration and monopolization [4], medicinal plant growing is in its infancy, which requires the attention of both scientists and practitioners.

Purpose

The purpose of this publication is to explore foreign experience in the development of medicinal plant growing branch and to outline the possibilities of its implementation in Ukraine.

Materials and methods of research

In the process of information processing, methods of scientific cognition were used, in particular the method of analysis, comparison, method of synthesis, deduction and induction. Detailed analysis of information obtained from various sources, analytical evaluation and information synthesis helped to identify effective tools and approaches to the strategic development of medicinal plant growing in some countries of the world. In the comparative assessment of the studied strategies, the main attention was paid to the possibility of their adaptation in Ukraine in the postwar period.

Results of the research and their discussion

The Thai government pays special attention to the cultivation of medicinal plants, focusing on spreading their use in medicine and on the production of food supplements and various health products. The capacity of medicinal plant growing branch in Thailand is evidenced by the fact that the population of this country uses more than 1.800 medicinal plants, 300 of which are used for the production of medicines. To ensure the effective development of medicinal plants production in the country, the Institute of Industrial Standards of Thailand together with the

Department of Traditional and Alternative Medicine of Thailand under the Ministry of Health is implementing a project to develop standards for the Thai herb industry. Its goal is to improve the quality of Thai herbs, increase their competitiveness in the international market. In general, Thailand aims to become a leading exporter of raw materials for the production of plant-based products in the Southeast Asia region.

To achieve this goal, until recently, in the period from 2017 to 2021, the development of medicinal plants production in Thailand took place in accordance with such four strategies:

- the first provided an increase of the production of Thai herbal products, which received high reviews in the international and local markets;
- the second focused on the development of the market and plant industry of the country with an emphasis on making Thai herbs competitive in the international market;
- the third was aimed at promoting the use of medicinal plants to treat and strengthen health;
- the fourth provided the continuous development of medicinal plants production and health care.

Together with the implementation of these strategies in Thailand, extremely high standards have been developed for many Thai herbs in parallel with their integration into the primary health care system. The promotion of herbal medicine in Thailand is also aimed at reducing the medical expenses of the population and the state [8].

Such a balanced approach to the development of medicinal plants production, which is being introduced in Thailand, can certainly be an example to follow. However, its disadvantages include the fact that it has a rather narrow focus – the development of medicinal plants production in Thailand is mainly associated with the development of medicine, health care, and pharmaceutical industry. Instead, we believe that the field of medicinal plant growing is multi-vector and its development has an impact on a number of other industries.

Iran is also one of the most powerful countries in terms of medicinal plant production, and its experience in the development of this branch is also noteworthy. This is largely due to the fact that Iranian medicine, which widely uses medicinal plants, has more than 3.000 years. In recent years, the production and export of medicinal plants in Iran is characterized by a steady upward trend – annual growth fluctuates at the 10% rate. The potential of Iranian medicinal plants growing contains 2.300 different types of medicinal crops, including essential-oils crops and spices. The worth of the medicinal plants market in Iran is more than $500 million per year. Iran has steadily exported medicinal plants for amount of more than $ 450 million per year, in recent years, mainly to the United Arab Emirates, Iraq, Qatar, Hong Kong, Spain, Italy and France. In 2020, Iran exported 15 million euros worth of herbal medicines. Approximately 180 thousand hectares of land in Iran are under cultivated medicinal plants, and the annual production capacity of their manufacturing is 200 thousand tons. Natural herbal remedies in

Iran are produced by more than 30 companies and these commodities are manufactured with the same quality standards as pharmaceuticals.

It should be noted that the most important medicinal culture of Iran is saffron. In 2018-2019, its exports fluctuated at $ 250 million rate, in particular in 2018, 172 tons of this spicy crop were exported to 47 countries, including the United States. This figure showed an increase of 32.3% compared to the previous year. And in 2019, saffron production in Iran amounted to more than 350 tons, which is 25% more than in 2018. As a result – Iran is the world's largest producer of saffron, its production in this country is 93% of the world's production [7].

As follows, Iran's specialization in saffron production can be seen as a focus on a narrow segment of medicinal plant growing, which has allowed this country to occupy a specific niche in the international market. We believe that this is a successful implementation of the concentration strategy in the context of the development of the medicinal plant growing branch.

It was also discovered that the effective development of medicinal plant growing, in Iran is possible primarily due to state support. Thus, the state government is consistently allocating funds for the development of the medicinal plant industry – in the 2018-2019 financial year, such support amounted to $20.07 million. Considerable attention in Iran is paid by the state to bring production and processing of medicinal plants in line with international standards, to create national brands in world markets.

Conclusions and future perspectives of the study

The analyzed strategies for the development of medicinal plant growing have both common and specific features. In particular, the existence of effective legislation governing the activities of producers, harvesters and processors of medicinal plants, including spices and essential-oils crops and the introduction of public-private cooperation are common for Iran and Thailand that have reached a high level of development of medicinal plant growing. In addition the assessment of the strategies of effective development of medicinal plant growing in Iran and Thailand showed that they take into account both current and potential policies and regulations in the branch. Revealed tools of researched strategies given that they have proven to be quite effective, we consider as those that may be relevant for implementation in Ukraine to stimulate the development of medicinal plant growing especially in the post-war period. Separate aspects of the considered strategies can be used in the process of developing the concept of branch development in Ukraine, and the further authors' researchers will be dedicated to this topic.

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THEORETICAL AND METHODOLOGICAL PRINCIPLES OF BUDGET INCOME FORMATION UNDER THE CONDITIONS OF LAND MARKET REFORM IN UKRAINE

The relevance of the studied issues. Increasing the volume of budget revenues has always been and remains a pressing issue. Budget profitability primarily affects the ability of state authorities to fully perform assigned to them functions and guarantee communities well-being.

Long time existence of agricultural land sales moratorium, the main resource of rural areas, is the main reason that prevented the process of turning land into a commodity.

The sale of land was supposed to give rise to the formation of civilized relations in the field of land ownership, lead to an increase in the production capacity of agricultural enterprises and become a driving factor for democratic transformations in the state. Unfortunately, the full-scale invasion of the Russian Federation changed the conditions on the market and slowed down the process of buying and selling land.

Analysis of research and publications on the subject of the issue. Main

problem investigations of the existence and state regulation of the land market have always been relevant in the scientific environment. A number of scientists and experts have devoted their work to this issue. In particular, A.A. Kasich and the team of authors [1] note the importance of the state regulation role of the land market in Ukraine. According to the authors, this issue is relevant and needs a broad scientific and practical discussion on the content, forms and timing of implementation.

Drozdiuk T.M. in his work [2, p. 238-244] describes developed countries experience on state regulation of the land market. The author claims that guarantees and protection of private land ownership rights are fixed in the legislation of developed countries by establishing complex procedures for its alienation; control over land use and land turnover; implementation of redistribution of land used between landowners to improve the use of land funds; establishment of appropriate restrictions on the sale of agricultural land; indivisibility of agricultural land, prevention of overexploitation, etc.

The position of K. Omelchak [3, p. 112-120] about the mechanisms of state regulation of the land market deserves attention. As the author of the article notes a clear distinction of tasks and functions between subjects of land relations, the selection of effective tools of influence on the land market, which will be relevant to the socio-economic situation in the country.

The goal. The purpose of this study is to determine the impact of agricultural land market formation on budget revenues of different levels.

Research methods. The scientific investigation used the methods of deduction, comparison and analysis of indicators.

Research results. Land is the main national wealth, being under the special protection of the state and being the object of the Ukrainian people's property rights. The normative-legal document determining the ideology of land relations in Ukraine is the Land Regulations [4], which came into force on January 1, 2002. According to this document, land legislation is based on the following principles:

1. The Code ensures land use and ownership equality for individuals and legal entities, administrative-territorial units, and the state.

2. The government may not interfere in the implementation of the property right and use of land by owners, except in cases specified by law.

3. Environmental safety requirements are a top priority.

4. Land rights guarantees and rational use and protection of land.

Ukraine is a post-soviet country and has significant obstacles in the sphere of land relations from the position of being highly regulated: land sale and purchase agreements are preceded by complicated procedures, in particular a number of documents to be collected and certain bureaucratic requirements to be met.

However, there are examples of successful foreign experience in the field of land market operations. As an example of the beginning and implementation of a land reform, the Polish experience can be mentioned. The land market here is freely operating and attractive to investors, and after several years of stagnation it

is showing growth. Land owners freely dispose of their land, although there are also significant signs of state control for the purpose of rational land use in this country. Thus, on July 16, 2013, the Agrarian System Organization Act was introduced, establishing the priorities of state land policy, such as:

1) improving the structure of farming;

2) engaging in agricultural activities according to qualifications;

3) preventing the concentration of property in one owner [5].

Another example of a post-soviet country with the lowest land prices is Romania. The low price in this country (2.5 thousand dollars for 1 hectare) is due to the limitation of land ownership - only up to 100 hectares per 1 person (for comparison - in Poland this limitation is up to 500 hectares per 1 person).

Also, some of the lowest prices for agricultural land in Slovakia, influenced by excessive market regulation. Land reform entered into force here in 2014, but market development is constrained by the form of land ownership by co-owners. Based on the fact that about 81% of agricultural land is privatized, 28% of them (550 thousand hectares) belong to unknown owners, leasing land to large agroholdings [6].

In order to create the infrastructure for introducing the land market in Ukraine, agricultural land sale moratorium (except for the state property land) was abolished on July 1, 2021, i.e, the owners will be free to dispose it. The moratorium had existed since 2002 to protect the farmers' property, but it is impossible to deny the existence of a shadow market, because certain entities have always found ways to alienate land and change ownership.

The Ukrainian moratorium on the land sale prevented owners from using their most valuable asset as collateral. And that made it impossible to get access to credit, which would allow them to expand production or start new businesses. With good management, transparent markets for agricultural land sales would encourage investment and allow banks provide credit to farms, small and medium-sized rural businesses. As a result of meaningful land reform, agricultural productivity could expand annual output by $15 billion. The agricultural industry's productivity could expand annual production by $15 billion and increase GDP by about 1.5 percent [7].

Agricultural land market began to function with the introduction of Ukrainian Law "On Amendments to Certain Legislative Acts of Ukraine on the Agricultural Land Circulation" [8]. At the moment it has certain restrictions - only physical persons-citizens of Ukraine can buy land. Only up to 100 hectares per 1 person can be purchased. It is forbidden to carry out sales transactions with foreigners. These restrictions will be in force until 2024. From 2024 the right to buy agricultural land will be given to legal entities (but their participants should also be only citizens of Ukraine), and the restrictions will be raised to 10 thousand hectares.

Following the martial law in Ukraine, the State Register of Real Estate Rights and the State Land Cadastre did not work. But as of June 30, 2022 the Register of Real Estate Rights is already open for notaries and registrars.

However, this applies only to unoccupied territories. It is not possible to buy or sell land or real estate in the territories occupied by the Russian troops today.

Taking into account the processes of Ukraine's land market formation, the taxation issues are also under development by the government and the highest legislative body of the country. Thus, the Law of Ukraine "On Amendments to the Tax Code of Ukraine and other legislative acts of Ukraine to ensure the budget revenues balance" № 1914-IX from 30.11.2021. [9], by which amendments to the Tax Code of Ukraine were voted and significant innovations in the landowner and tenant income taxation were introduced.

Among the main innovations of this law is the definition of minimum tax liability. Thus, the minimum tax liability [9] is the minimum amount of tax liability for the payment of taxes, fees, payments, control over the charging of which is entrusted to the regulatory authorities, related to the production and sale of own agricultural products and/or ownership and/or use (lease, sublease, emphyteusis, permanent use) of land areas classified as agricultural land.

The new taxation procedure will be applied to owners and users of agricultural land plots located outside settlements, as well as within them, if the size of the land plot is 0.5 hectares or more.

The minimum tax liability consists of land tax, income tax on the sale of crops (grown on that plot), personal income tax, military levy on the wages of hired workers.

The norm of the minimum tax liability will be in force since 2022, i. e. for the first time the tax will have to be paid in 2023 - for the previous year.

The tax will be calculated according to the formula 1 for land plots, the normative monetary evaluation of which has been carried out:

$$MTL = NME \text{ x } 0{,}05 \text{ x } \frac{\text{M}}{12}; \qquad (1)$$

Were MTL – minimum tax liability;

NME – normative monetary evaluation of the plot;

M – the number of calendar days when the land is owned or leased;

For plots, the normative monetary assessment of which has not been carried out, the minimum tax liability will be determined by the following formula (2)

$$MTL = NME \text{ x } S \text{ x } 0{,}05 \text{ x } \frac{\text{M}}{12}; \qquad (2)$$

MTL – minimum tax liability;

NME - normative monetary evaluation of 1 hectare of land in the region;

S –land area (ha);

M – the number of calendar days when the land is owned or leased;

For large agricultural producers this tax burden will not be significant, because they pay larger amounts of taxes than the minimum tax liability assumes. However, for individuals owning more than 0.5 hectares of land, there will be a

need to pay tax. This very circumstance may become the reason for more active land sales and perfect market formation.

Collected funds from the minimum tax liability will be distributed as following: 60% to local budgets; 25% to the state budget; and 15% to the regional budget.

Exemption from payment of the minimum tax liability is granted to:

- owners of land plots, who were located within inhabited areas or in dacha and horticultural cooperatives as of 01.01.2022;
- crediting the taxes paid as minimum tax liability is differentiated between agricultural producers and non-agricultural producers;
- In order to ensure fair payment of the minimum tax obligation for government and non-government land plots, the payment of the minimum tax obligation should be limited to 20% of the rent for land plots owned by the government or municipalities;
- Individuals are exempt from the minimum tax liability if the supervisory authority has not served the tax notification-decision (TND) within the appropriate time frame.

Minimum tax liability must be paid annually by farmers who pay less than 1200 UAH of minimum tax liability from 1 hectare.

If the amount paid from 1 hectare of land is less than the minimum tax liability - the landlord is required to make an additional payment to the budget. Usually these are the land leaseholders without official registration of lease. So far, 8 million hectares of land are rented in the shadow.

By the beginning of July 2022 in the "Prozorro.Selling" system. [10] a total of more than 6 thousand on-line sales and leasing land auctions were announced. The total value of all lots is 1.93 billion UAH, and the area exceeds 76.16 thousand hectares.

Since the war, up to 96 million hryvnias were transferred to the budgets of different levels based on the results of successfully completed land auctions. Out of 6,000 auctions announced, almost 2,280 were for the land sale and more than 3,853 were for leasing.

Conclusions and suggestions. Formation of a civilized and effective market is an urgent problem in the context of the abolition of the land sale moratorium and the possibility of buying and selling the land. Development of an effective mechanism of land sale and purchase taxation will allow investors, owners of shares who do not use them effectively, to get rid of unnecessary assets, and farmers and agricultural producers to start a new business to intensify investment activities. The main issue of land market effective functioning remains the end of military operations on the entire territory of Ukraine.

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FINANCIAL PERFORMANCE INDICATORS OF EDUCATION SYSTEMS IN UKRAINE AND POLAND

The relevance of the studied issues. Funding of the education system is considered by the world community as an investment in human and social capital, which, with proper management, ensures socio-economic growth and increased competitiveness of the country. The turbulence and dynamism of society, the development of digital technologies, as well as uncontrolled crisis phenomena, such as the COVID-19 pandemic and military aggression, have a significant impact on the activities of higher education institutions (HEIs).

Analysis of research and publications on the topic of the problem. The fundamental principles of the implementation of financial policy in the field of education are laid down in the works of G. Becker, K. Wain, R. Dave A. Cooray, P. Lengrand, R. Musgrave, R. Neva, M. Palacios, T. Zoran. The works of domestic scientists, in particular T. Bogolib, V. Vlasyuk, O. Grigorska, O. Grishnova, O. Dlugopolskyi, I. Kaleniuk, V. Malyshko, Yu. Petrushenko, I. Radionova, V. Kharchuk, G. Chekalovska, L. Shevchenko, A. Shevchuk.

However, the practical aspects of the implementation of financial policy in the field of education in the European countries and the world require further research.

The purpose of the study is to carry out expert diagnostics of the main economic and financial indicators of the functioning of the education system in Ukraine and Poland.

Research methods. In the course of the study, the following research methods were used: analysis, synthesis, logical generalization – when determining the socio-economic essence and investment nature of the processes of financial support in the field of education; comparative and statistical analysis – in the study of modern trends in the functioning of the education system in Ukraine and Poland.

Research results. In order to diagnose the financial indicators of the functioning of higher education institutions in Ukraine and Poland, let's first analyze the main economic indicators, such as: the population, the level of urbanization, the share of Internet users in both countries (Table 1).

According to the results of the analysis of table 1, we come to the conclusion that Ukraine and Poland are similar in terms of the total population (in 2020, Ukraine – 43,86 million people; Poland – 38,07 million people). At the

same time, the level of urbanization in 2020 (the share of the population living in cities) is somewhat higher in Ukraine – 69%. The share of Internet users, which is important when analyzing the field of education, in Poland in 2020 is 81% of the total population; in Ukraine – 63% (Table 1).

Table 1

Total population, level of urbanization, the share of Internet users in Ukraine and Poland for 2017-2020

	The absolute value of the indicator				Indicator change index		
	2017	2018	2019	2020	2018/ 2017	2019/ 2018	2020/ 2019
Total population, million people							
Ukraine	44,51	44,12	43,9	43,86	0,991	0,995	0,999
Poland	38,58	38,14	38,07	37,87	0,988	0,998	0,994
Level of urbanization, %							
Ukraine	70	70	69	69	1	0,986	1
Poland	61	61	60	60	1	0,983	1
The share of Internet users from the total population, %							
Ukraine	49	58	63	63	1,183	1,086	1
Poland	72	78	79	81	1,083	1,012	1,025

Created by the author according to: [1]

As of the 2019/2020 academic year, there were 281 institutions of higher education in Ukraine, in which 1266100 people studied. The number of employed workers in the field of education in Ukraine was 41,3 thousand people. In 2010, this indicator was 46,7 thousand. persons [1,3]. The number of students, the number of employees, the level of the cost of educational services and the purchasing power of the population affect the financial results of the functioning of the education sector (Table 2).

Table 2

Financial results before taxation in the field of education in Ukraine for 2010-2020

	2010	2015	2017	2018	2019	2020
Financial result (balance), UAH million	88,3	105,3	121,5	178,6	377,7	143,8
Profit, UAH million	163,1	225,7	241,9	363,5	558,2	551,5
Loss, million hryvnias	74,8	120,4	120,4	184,9	180,5	407,7
Share of enterprises that received a loss, %	35,7	28,5	34,1	30,0	31,1	33,6

Created by the author according to: [1, P. 462-463; 2, P. 420-421; 3, P. 412-413]

For 2010-2020, the financial result (balance) of the activities of enterprises in the field of education increased from UAH 88,3 to UAH 143,8 million. In 2020, losses (407,7 million UAN) were at the level of profits (551,5 million hryvnias). The share of enterprises that suffered a loss in 2020 was 33,6%. It should also be noted that during the last 10 years, from 2010 to 2020, the share of unprofitable

institutions in the field of education in Ukraine did not decrease significantly, which is a negative phenomenon and indicates the need to find ways to strengthen the financial stability of institutions in the field of education.

The profitability of enterprises in the field of education in 2020 was 7,1%. During 2010-2020, the lowest level of profitability of 3,7% was observed in 2017, and the highest was 11,0% in 2019 (Table 3). It should also be noted that the situation with the COVID-19 pandemic has significantly affected medicine and the health care sector, the processes of providing educational services, as well as processes in the field of information and telecommunications.

Table 3

Profitability of operating activities by types of economic activity in Ukraine for 2010-2020

Type of economic activity	2010	2015	2016	2017	2018	2019	2020
Education, %	4,9	5,7	5,6	3,7	5,8	11,0	7,1
Information and telecommunications,%	7,4	0,5	8,5	13,8	13,1	15,4	14,7
Health care and provision of social assistance,%	4,0	–0,6	4,5	3,3	3,7	3,0	11,2

Created by the author according to: [1, P. 458-464; 2, P. 422; 3, P. 414]

During 2010-2019, the profitability of work activities in the field of health care and social assistance did not exceed 4,5%, and in 2020 it was 11,2%, which is explained by the difficult situation with the COVID-19 pandemic (Table 3). The provision of educational services during 2019-2020 took place in a mixed format, but still mostly online.

In Poland, according to the POL-on register, in the 2020/21 academic year, there were 368 higher education institutions (HEIs) in which 1218000 students studied, which is 1,2% more than the year before. The number of students increased for the first time since the 2005/06 academic year. Women made up 58,0% of all students. The share of students studying at state universities was 69,9% [5].

Table 4

The main financial indicators of the activity of Polish HEI in 2020

	Total HEI	Public HEI	Non-public HEI
Total income, thousand PLN	27386628,6	24372142,6	3014486,0
General expenses, thousand PLN	26107003,9	23419309,6	2687694,3
Gross financial result, thousand PLN	1279624,7	952833,0	326791,7
Taxes and fees, thousand PLN	4416,9	3672,8	744,1
Net financial result, thousand PLN	1275207,8	949160,2	326047,6

Created by the author according to: [5, P. 151]

The number of foreign students at Polish universities increased in the 2020/21 academic year by 3,0% compared to the previous academic year and amounted to 84,7 thousand, i.e. 7,0% of all students [5]. Students from Europe prevailed – only 61,9 thousand people (73,1%), the most from Ukraine – 38,5 thousand students (45,4%). Number of graduates in 2019/20 reached 293,4 thousand, which is 6,5% less than in 2018/19. A total of 93200 teachers worked at Polish HEI, including 44,300 women [5]. In 2020, the revenues of Polish HEI amounted to PLN 27386,6 million (Table 4), of which PLN 24372,1 million were public HEI, which is 2.8% less than in 2019.

The main source of operating income of public universities in Poland in 2020 was a state subsidy aimed at maintaining teaching and research potential (70,4%). At the same time, non-public HEI in Poland received their income in 2020 mainly from fees for educational services (76,5%) (Table 5).

Table 5

The structure of operating income by sources of income of HEI of Poland in 2020

Sources of operating income	Public HEI	Non-public HEI
Subsidy for maintaining teaching and research potential, %	70,4	9,8
Grants from the state budget, %	4,9	2,5
Fees for educational services, %	7,6	76,5
Funds for projects financed by the National Centre for Research and Development, %	1,4	2,8
Funds for projects financed by the National Science Centre, %	2,7	0,5
Other, %	13,0	7,9
Total%	100	100

Created by the author according to: [5, P. 16]

Total expenses in the field of higher education in Poland in 2020 reached 26107,0 million PLN (including 23419,3 million PLN of expenses of state universities), which is 0,5% less than in 2019. Average expenses for education per student amounted to PLN 23163,8, which is 1,2% more than in 2019 [5].

The net financial result of the activities of Polish universities for the period 2015–2020 increased from 607,9 million PLN to 1275,2 million PLN (Table 6).

The period of 2018–2019 was the most financially effective (the net financial result of the Polish Higher Education Institution increased by 2,73 times). In 2020, due to the COVID-19 pandemic, the indicated indicator decreased significantly and amounted to 66,2% of the 2019 level.

For data comparability, we provide information from the Ministry of Finance of Ukraine regarding the official exchange rate as of June 30, 2022: USD 1. United States (USD) is UAH 29,25. (UAH); 1 UAH (UAH) is 6,56 Polish zlotys (PLN) [6].

Table 6

The net financial result of the activities of Polish universities in 2015-2020

	2015	2016	2017	2018	2019	2020
Net financial result, million PLN						
Total HEI	**607,9**	**562,2**	**699,9**	**703,0**	**1924,6**	**1275,2**
Public HEI	655,2	549,3	653,1	630,3	1763,0	949,2
Non-public HEI	-47,3	12,9	46,8	72,7	161,6	326,0
Index of change of the indicator compared to the previous period						
Total HEI	**–**	**0,925**	**1,245**	**1,004**	**2,730**	**0,662**

Created by the author according to: [5, P. 16]

Conclusions and suggestions. The education systems of Ukraine and Poland, which consist of both public and private higher education institutions, differs in the volume and structure of financial income. The functioning of the education system of Ukraine and Poland in 2020 is profitable, although it is definitely determined by the general economic situation in each country.

In current conditions, Ukraine, both at the national level and at the level of specific sectors of the economy, has to counteract the mentioned factors of geopolitical instability. Due to the military aggression of 2022, the education system in Ukraine has undergone negative changes. Poland plays a significant role in reducing the negative impact of the 2022 military crisis on Ukraine, both in the economy in general and in the education system in particular.

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COMPETITIVE ENVIRONMENT OF MANUFACTURERS OF ORGANIC PRODUCTS IN UKRAINE: MAIN TRENDS AND DEVELOPMENT PROSPECTS

The relevance of the studied issues. Organic farming is gaining popularity among agricultural producers around the world every year. The policy of the European Union countries in recent years is aimed at encouraging farmers and farms to switch to organic production. Such advantages of organic production as: care for future generations, less negative impact on the environment, providing the population with better food products and improving the lives of the rural population, make and trends in the development of organic production will allow to identify topical Ukrainian farmers think about changing farming from traditional farming methods to a more environmentally friendly and safer for the environment. The study of the competitive environment issues and problems of producers of environmentally friendly food, and to develop an effective plan for its development.

Analysis of research and publications on the topic of the problem. The study of the competitive environment of the production of organic products in Ukraine is quite relevant. Thus, the trends and current state of organic production are highlighted in the works of S. Ya. Bersutska. [2], Kulisha L.P. [3]. The world practice of supporting the organic sector and their application in domestic farms is considered by E. Milovanov [4], and the place of organic production in the system of agri-food production was determined by O.S. Senyshyn [5]. Despite the significant contribution of these scientists to the study of the current state of organic production and market competition in Ukraine, some issues require more detailed study, systematization and clarification of data.

Purpose. The aim of the work is to study the main trends in the organic market in Ukraine and the prospects for the development of its competitive environment.

Research methods. In the process of research, general scientific and special methods were used, such as abstract-logical in determining the basic principles of research and generalizations, statistical and economic in the study of the current state of development of organic production.

The results of the study. The current stage of formation of the agrarian sector of the Ukrainian economy is marked by certain features, in particular, there is an impact of the experience of agriculture of farmers of the European Union

countries in which the priority is a careful attitude to the environment and care for future generations. To enter the European competitive environment, it is necessary to follow global trends in agriculture and adhere to the principles of sustainable development of territories. For the Ukrainian producer, organic production is a rather promising direction of the industry, as it has a number of competitive advantages for both the producer and the consumer. Gradually, the consumption of ecologically clean food products is becoming more and more popular among Ukrainians, and the European vector of development is becoming a driving force for entrepreneurs in the transition to organic production.

The production of organic products in the world is concentrated in 172 countries of the world and totals 112 million producers, the largest share of which is in Asia (1.8 million), Africa (8.3 million) and Europe (418 thousand). In the world, the production of organic products employs 72.3 million hectares of land, and the top three among the countries is occupied by Australia and 35.7 million hectares, Argentina and 4.5 million hectares and India and its 2.6 million hectares. (Table 1.).

According to the Research Institute of Organic Farming (FiBL) [6], Europe is one of the three leaders among the number of organic producers and their number is 418 thousand. operators, and the total area of land used in organic production is 17.1 million hectares.In Ukraine, as in most European countries, organic production is developing at a fairly rapid pace. This is evidenced by an increase in the number of certified organic land, the number of organic market operators, an increase in the share of exports and consumption of organic products per capita.

Table 1. Top 10 countries in the world with the largest amount of organic area, million hectare

Country	Area, million hactare
Australia	35,7
Argentina	4,5
Spain	2,4
USA	2,3
India	2,6
France	2,5
China	2,4
Uruguay	2,7
Italy	2,1
Germany	1,7

Source [6]

For example, in 2002 there were 31 registered producers of organic products, and the share of certified agricultural land occupied by organic farming was 0.4% of the total area of agricultural land. In 2021, the number of operators increased to 563, and the share of land amounted to 1.7% of the total area occupied by

agriculture. The dynamics of land growth and the number of operators are analyzed in Table 2.

Analyzing the data given in the Table 2.,it can be argued that, albeit gradually, the market for the production of organic products is developing. The export of products of the Ukrainian manufacturer is increasing to the market of the European Union countries and, in many respects, it is quite competitive. in 2019, Ukraine entered the top three countries exporting organic products to the European market. In general, the organic export of Ukraine is 178.6 million euros for 2020, which is almost 5 times more than in 2013 [6].

Table 2 Dynamics of land growth and the number of organic market operators (2011-2021)

Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Organic area (agricultural land),thousand ha	270	272	393	400	410	381	289	309	467	462	482
Organic producers	155	164	175	182	210	294	304	501	470	419	563
The share of organic area from the total amount of agricultural land, %	0,65	0,66	0,95	0,97	0,99	0,92	0,7	0,75	1,13	1,12	1,7

Source [6]

The main types of exported products are: wheat, organic soybeans, corn, spelled, rapeseed, sunflower, oilcake, blueberries and sunflower oil. The main obstacles to further promotion on the European market for the Ukrainian manufacturer are primarily market saturation and high standards of finished products. But one of the advantages of Ukrainian organic products is their cheap price compared to prices in European countries, so it is quite popular. But some issues of certification and product quality need to be refined and borrowed from the experience of European countries.

The domestic organic market consists of 563 organic market operators and is quite competitive. The main regions where organic production is concentrated are Kyiv, Mykolaiv, Vinnytsia, Zhytomyr and Kharkiv regions. Details on the number of operators and the specifics of their activities (processing, export, crop production and animal husbandry) are given in Table 3.

The consumption of organic products by Ukrainians is also increasing because a healthy lifestyle is becoming popular among young people and the so-called «smart consumption», which includes caring for nature and caring for future generations.

Table 3

Organic market operators by regions

Regions	Kinds of activities									
	In total	Plant growing	Animal husbandry	Production fertilizers	Processing	Export/Import	Wild rose	Apiculture	Aquaculture	Trade
Vinnytsia	51	35	1	2	4	7	2	6	0	3
Volyn	27	17	1	1	2	6	4	1	0	0
Dnipropetrovsk	25	9	0	3	1	2	1	3	0	2
Donetsk	2	1	0	1	0	0	0	0	0	0
Zhytomyr	27	17	5	0	6	16	3	1	0	5
Transcarpathian	18	8	0	1	4	9	5	1	0	1
Zaporizhia	10	4	0	3	4	6	1	0	0	2
Ivano-Frankivsk	19	6	0	6	6	9	8	3	0	3
Kiev	87	31	1	12	19	26	6	2	0	14
Kirovohrad	7	2	0	4	0	0	0	0	1	0
Luhansk	6	0	0	0	0	0	0	4	0	2
Lviv	30	15	0	2	5	12	7	0	0	4
Mykolaiv	31	4	0	1	3	2	0	20	0	1
Odessa	38	10	1	1	8	15	2	8	0	9
Poltava	31	25	0	1	12	16	0	0	0	11
Rivne	21	13	0	1	4	9	3	1	0	4
Sumy	21	12	0	1	1	6	1	4	0	3
Ternopil	14	6	1	0	5	6	2	0	0	1
Kharkiv	29	17	0	3	3	10	0	3	0	4
Kherson	10	1	0	3	1	2	0	0	0	1
Khmelnytskyi	19	5	0	1	4	5	1	8	1	2
Cherkaska	24	11	1	1	5	5	2	4	0	2
Chernivtsi	4	1	0	0	2	0	0	0	0	1
Chernihiv	12	8	1	1	1	4	0	0	0	0
Crimea	no data available									
TogetherinUkraine	563	258	12	49	100	173	48	70	2	76

Source [7]

The consumption of organic products was only 0.01€ per person in 2006, while this figure has increased to 0.9€ in 2020 [6]. But rather high price and the

low purchasing power of the population is the main obstacle to the consumption of organic products in Ukraine. In our opinion, to combat this, it is necessary to implement a number of measures of state support for organic producers. Such support can be: partial repayment of the payment for the certification; provision of interest-free loans for entrepreneurs seeking to switch to organic production; creation of a base of suppliers and sales channels for finished products; execution of a state order for organic agro-food products; provision of certain subsidies and grants.

But the institutional environment is insufficiently developed, and it is a certain obstacle to the entry of Ukrainian manufacturers into the European market. Although the Law of Ukraine «On Basic Principles and Requirements for Organic Production, Circulation and Labeling of Organic Products» [1] was put into effect back in 2019, a number of Regulations and by-laws require revision and further implementation.

Another problem on the way to the development of a competitive internal market of organic food products is the low awareness of Ukrainians regarding the benefits of ecologically clean products and the lack of information about the places of sale of such products on the way to the development of a competitive internal market of organic food products. To solve this issue, it is necessary to introduce organic education, distribute brochures about the benefits of organic products among family doctors and medical staff of kindergartens, who will be able to prove the usefulness of using such products for the human body, especially children. Large supermarkets should necessary mark with separate shelves the place where the products of domestic organic producers are offered, and there should also be information on what exactly they are useful for and how to distinguish them from traditional products.

If Ukraine receives the status of a candidate for joining the European Union, it will be a certain impetus for raising the standards of organic production and bringing them closer to the EU standards, however, with the beginning of the full-scale invasion of the Russian Federation into Ukraine, and the conduct of active hostilities, armed aggression pushed Ukrainian organic producers back several years. The main problem today is access to land resources, because on a large area used for organic production, either there are hostilities, or the territory is occupied, or after the occupation it is dangerous because there is a problem of demining the territories. Thus, continuous shelling of Kharkiv, Odesa, Mykolaiv and other regions makes it impossible to carry out agricultural work. The temporary occupation of the Kherson region, where are officially registered 10 organic market operators, also does not provide an opportunity for the development of organic agriculture. Therefore, it will be important to support European partners in rebuilding the market of organic products in Ukraine after the end of hostilities on the territory of Ukraine.

Conclusions and Suggestions. Organic production is a promising direction of the agricultural sector of Ukraine.It has such advantages as geographical location, favorable climatic features, European vector of development, consumer

interest in ecologically clean food products - all this is a certain incentive for the transition of Ukrainian agricultural producers from traditional farming methods to organic ones. Smart marketing and government support for producers can increase the demand for organic products. In our opinion, the main directions of further development of the competitive environment are: borrowing the experience of implementing organic agriculture in the countries of the European Union, search for methods of ensuring the competitiveness of Ukrainian organic products on the world market, state support for producers and support from European partners. Only a complex of all these actions will be able to ensure the development of organic production in Ukraine and strengthen its competitiveness.

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