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BACHELOR'S THESIS

on the topic:

"Analysis of the financial management system of agricultural enterprises (case study on farm "Malva")"

speciality 073"Management"

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Applied for a Bachelor's degree.

Bachelor's thesis contains the results of own research. The use of ideas, results and texts of other authors have references to the relevant source

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ANNOTATION

The bachelor's thesis examines the theoretical and methodological foundations of the finance management system of agricultural enterprise.

In order to ensure the stable development of agricultural enterprises, the main priorities in the system of financial performance management should be the implementation of management measures aimed at optimizing the value of financial results.

In order to obtain a detailed assessment of the financial condition of the company, it is advisable on the basis of financial statements to make diagnostic analysis of the efficiency of enterprise asset management by calculating the financial performance of assets, liquidity, financial stability and business activity of the entity.

An effective tool for improving the finance management system of farm "Malva" is to implement methods of economic and mathematical modeling in the enterprise using the system of factors that influence yield and interrelated indicators of the efficiency of production and economic activities.

STRUCTURAL ABSTRACT

The structure and length of bachelor's thesis. This bachelor thesis consists of introduction, 3 chapters, conclusion, appendix and list of references, which has 43 items. The length of the bachelor's thesis is 44 pages including 9 tables, 4 figures, 1 appendix and list of references.

The aim of the thesis. To indentify the key strategies for the improvement of the financial management system of agricultural enterprises.

According to the main aim the following *objectives* were identified:

- to analyse of theoretical and methodical approaches to the financial management system of the organisation;
- to examine the financial results of the organisation;
- to analyse the management system of the organization;
- identify potential opportunities to increase the profitability and competitiveness on the market.

Subject of research. Relationships, which are formed during the process of planning, organising and evaluation of the efficiency of financial management system.

Study object. Finance management system of agricultural enterprise.

Research methods. Descriptive method was used for the collection procedure, primary analysis and stating of general information about finance management system; synthesis – to create and describe the finance management system; comparative method – with the purpose to weigh up the financial performance of the agricultural companies that were selected for analysis.

Approbation of the results. III International Scientific and Practical Conference "International Economic Relations and Sustainable Development" (May 20, 2022 Sumy, Ukraine)

Key words: Agriculture, yield, financial result, finance management system, farm.

CONTENT

INTRODUCTION

Nowadays transformational changes of the market economy plays a huge role in lifecycle of the enterprise, the strategic development of the agricultural sector and increasing its competitiveness on the market highly depends on the management system of agricultural enterprise.

Important indicator of the effective existence of agricultural company is finance management system. Due to this it is important to take into account and undertake an effective management measures that are aimed for optimizing the financial results of agricultural company. it will help to identify opportunities to increase company's profitability and have competitive advantage in the market.

Theoretical and methodological aspects of finance management system of the agricultural enterprise have been studied by many authors, including: Schnittgrund K. P., Baker G., Pigul N., Voronina O.O., Garman E.T., Lytton R.H., Dail P. W., Govorushko T.A., Prikhodko L.O., Hira T. H., Fanslow A. M., Titus P. M.. Despite this it is significant number of scientific papers and significant achievements in this area, the problem of finance management system of agricultural enterprises taking into account the company's relevant pecularities of their functioning in the conditions of market relations, which make this research important.

The purpose of this work to indentify the key strategies for the improvement of the financial management system of agricultural enterprises on the example of farm "Malva". To achieve this goal we need to: forecast estimated yield, implement methods of economic and mathematical modeling using the system of factors of influence and interrelated indicators on the efficiency of farm, systematized external and internal factors influencing the financial result taking into account the sectoral characteristics of agricultural enterprises, identified basic elements of financial performance management, focused on management methods.

1. FEATURES OF THE FINANCIAL MANAGEMENT SYSTEM AND ECONOMIC ACTIVITIES OF AGRICULTURAL ENTERPRISES

1.1 Theoretical approaches to the formation of financial management system of the enterprises

The primary motivation behind the creation and further improvement of any business substance, no matter what its kind of action or type of possession, is to get the last financial outcome, which is a synopsis marker and mirrors the productivity of production and economic exercises. The financial consequence of a pioneering action, in the general sense, can be the benefit or misfortune got by an economic element because of its movement.

The idea of "financial outcomes" is deciphered by specialists in the fields of economics, money and bookkeeping as benefit (misfortune), results (result), increment (decline) in capital, as well as the contrast among pay and costs.

In most logical distributions, hypotheses of scholars and specialists frequently grasp the financial outcome as benefit. In any case, in the states of the unsound circumstance which is seen in the states of groundbreaking changes of public economy, it would be more catalyst to compare financial outcome both with benefit, and with misfortune. Subsequently, it is more genuine to consider it as a positive and negative financial outcome, the receipt of which is the end-product of production and economic exercises and the object of the executives of any business element [1].

Budgeting or keeping a spending plan is seen as an important financial management practice. Schnittgrund and Baker reported that the majority of their low income urban families used a budget even when it was only a mental, unwritten one and felt satisfied with their incomes but dissatisfied with their saving behavior [18].

Mullis and Schnittgrund found budgeters more satisfied with their spending than nonbudgeters [19].

Rettig and Mortenson concluded that only a minority of families have spending plans or written records [20].

Research on financial well-being and satisfaction has been increasing. Davis found respondents were more satisfied with their level of savings than with either their standard of living or emergency resources [21].

Garman, Lytton, and Dail looked at financial satisfaction and found that the financially distressed respondents reported dissatisfaction with their present standard of living and a tendency to ignore or throw out specific financial goals when faced with income shortages [22].

Titus found more satisfaction with financial status among older money managers with smaller households than among other managers. Hira, Fanslow, and Titus concluded that fewer money managers were satisfied with the amount of assets, savings, and emergencyresources, and their ability to avoid debt. However, they found that 38% of the respondents said they were better off and more satisfied now than before when asked to "compare your current financial situation to the way things were 4 years ago" [24].

The arrangement of the financial outcome in farming ventures has its own qualities regarding the particulars of creation and financial exercises of business structures of the rural area, among which the prevailing ones are:

- the impact of regular and climatic variables on the course of benefit arrangement (trademark irregularity of creation);
- multisectoral nature of horticultural ventures: creation of different yield and animals items, handling of own and cost unrefined components;
- contribution in the economic course of indispensable normal and organic elements of creation and natural resources, which decides the highlights of their assessment, appearance in the arrangement of records, as well as the particulars of representing the creation cycle (natural changes) and working out the expense of items;
- the situation with a farming maker permits the utilization of a worked on arrangement of tax collection with installment of a solitary duty and an extraordinary system of VAT tax assessment.

Finance management is a system aimed at managing a company's (an enterprise's) financial activities. Financial resources, investments in current and non-current assets, gainings, expenses, profits are the object of financial management.

As it has already been mentioned, functional management is based on the close relationship between a company's and its management's functions. The functions are here defined as a specific kind of management activities. These functions were formed in the process of management activities division.

Management functions classification was first introduced by the famous scientist Henri Fayol. He studied the following functions: foresight, organization, management, coordination, and control [25].

Today the management theory usually identifies four general functions: planning, organization, control, and motivation.

Let us consider these functions in the context of functional management. Every subsystem in functional management consists of a subject and an object of management. The subject of management includes structural subdivisions and their employees that fulfill management functions, methods that help to perform these functions, information and technical assistance. The result of their activity helps to implement executive decisions in functional management to achieve a high level of coordination in specific projects and jobs [26].

1.2 Peculiarities of financial management system of agricultural enterprises

Private capital has been grudgingly invest in agriculture in earlier times without any governmental guarantees and support, and governments have practiced varying degrees of regulation of private investors and financists in the division. These earlier experience have shaped the practice of modern finance and investment system. While we acknowledge a systematic policy project decrease the importance of the government support in agriculture sphere since 1970s, these experience last till nowadays, and we sure that it is important to understand how the state has long been a

bridge to understanding the financialization of agriculture. between finance and agriculture

The financialization of food and agriculture is expanding beyond countries with dominant agricultural exports, such as Canada, the United States (US) and the European Union (EU). International organizations more and more promote “financial inclusion” in countries that are on a stage of developing as an effective mechanism of support the development and improvement of agriculture sphere (GPFI and IFC, 2011; Taylor, 2012). As a result, financialization is spreading, albeit unevenly, to new global venues. Agri-food scholars often place this extension in the realm of capitalist relations and as an expression of a modern food regime that emphasizes the collision and logic of capital (e.g. Burch and Lawrence 2009; McMichael 2013) [27].

The financial result of agricultural enterprises, taking into account the sectoral characteristics of their operation, is influenced by two groups of factors: factors that do not depend on the activities of the enterprise (external) and factors within the competence of the enterprise (internal) (Figure. 1.1) [28].

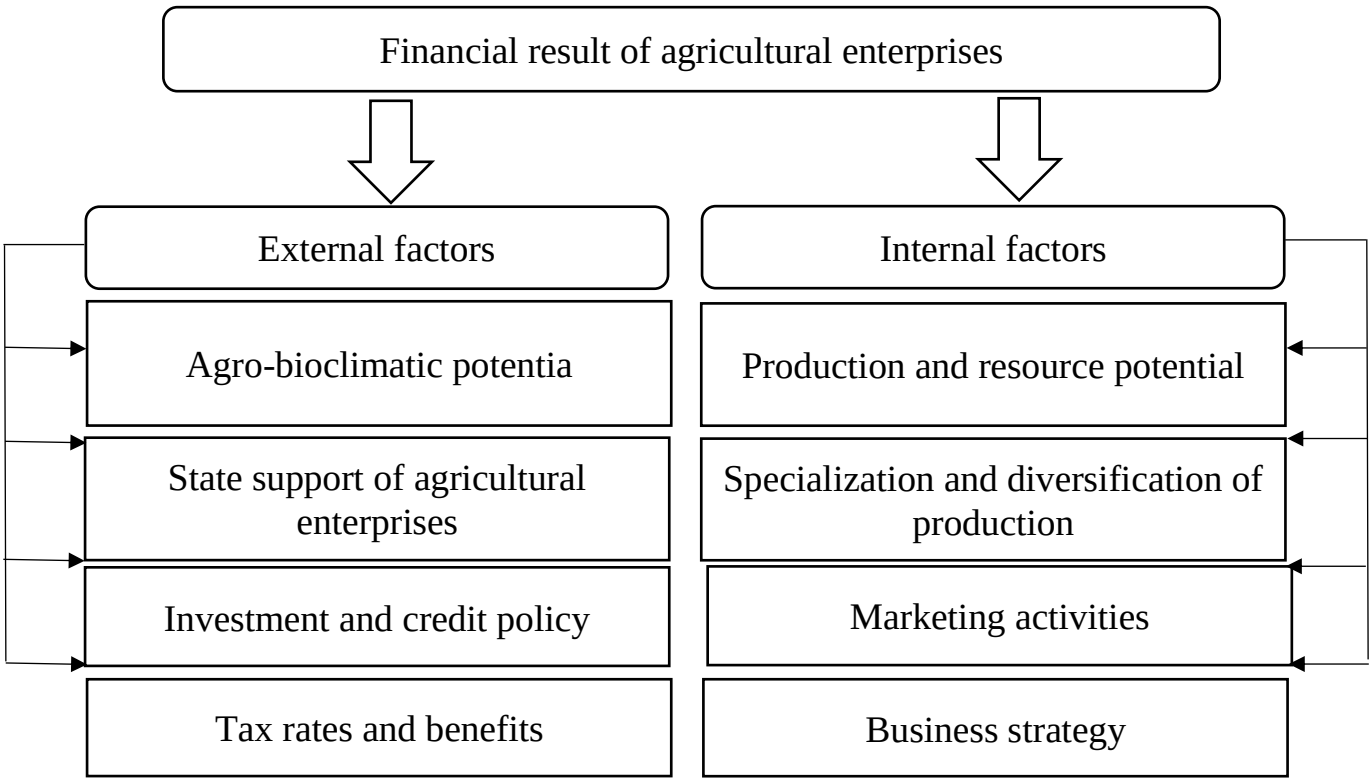

Figure 1.1 – Factors affecting the financial results of agricultural enterprises [28]

The arrangement of the financial outcome in farm company is because of the vitally working exercises, which is a horticultural action focused on the production and offer of farming items and organic resources of yield and domesticated animals. This sets explicit necessities for the association and strategies for framing the financial aftereffects of farm undertakings.

The main provisions for the formation of financial results of agricultural activities are regulated by the rules of UAS 30 "Biological Assets" [6] and Guidelines for Accounting of Biological Assets No. 1315 [7].

Characteristics of the arrangement of financial outcomes in the agrarian area of the economy follow from the actual meaning of the idea of "farm movement". As per UAS 30, farming movement is the most common way of overseeing natural changes to acquire rural items and/or extra natural resources.

The genuine measure of income (expenses) from introductory acknowledgment can be dependably resolved exclusively toward the year's end. There are two explanations behind this. The principal reason - at the hour of introductory acknowledgment, the organization can not mirror every one of the costs related with the natural change of these resources, which will be known exclusively toward the year's end [8].

Second, at the hour of introductory acknowledgment, company may not generally have the option to perceive which agrarian items will be inventories and which will be products available to be purchased. All things considered, a piece of the result is typically utilized for homegrown utilization, like grain for crops one year from now. Then, at that point, the grain that will be utilized for planting grain will be estimated at fair worth, which will twist the financial outcome, and later on - the expense of developing grain. This point is significant in the act of farms. In this way, how much income (expenses) from, still up in the air toward the year's end, won't agree with the decided income (expenses) during the year.

The overall technique for deciding the financial consequences of farming exercises doesn't exactly relate to the genuine model of market economy, as the financial outcome is resolved not after the offer of farm items, but rather following its

receipt from production. In any remaining areas of the economy, the financial not entirely settled at the phase of offer, not production (administrations, work). The size of financial aftereffects of farms undertakings is altogether impacted by the estimation of items at fair worth at starting acknowledgment. Income from starting acknowledgment should exclude the fair worth of items that are perceived as inventories and will be utilized coming down the line for production purposes. Financial outcomes are determined not on ware, but rather on all items got, in light of the fact that one of the highlights of farming is the halfway utilization of items for homegrown necessities.

1.3 Enterprise financial performance management system

Consequently, the need to guarantee the powerful economic development of agricultural company is to settle on administration choices on the arrangement of income, expenses and financial outcomes from the primary exercises connected with the production and offer of agricultural items, natural resources and extra organic resources.

In a market economy, to accomplish supportable seriousness and guarantee ideal economic impact, it is important to present a powerful means of dealing with the financial consequences of the undertaking. As indicated by Voronina O.O., financial outcome the executives is a course of finding and carrying out the best answers for the development, circulation and utilisation of financial outcomes, which depends on coordination with different subsystems of big business, in light of criticism, and is completed to accomplish supportable financial condition and compelling exercises effectively [1].

While looking at dealing with the financial consequences of the business substance, numerous scholars and specialists frequently mean the administration of a positive outcome - benefit, its conveyance and reallocation, on rare occasions - minimising losses, reducing them to zero and the strategy of resumption of profits.

Blank I.O. characterises the course of benefit the executives as a course of creating and settling on successful administration choices on all significant parts of its development and dispersion and use in the venture to boost the prosperity of entrepreneurs in the current and future periods [5].

Going with the board choices on the development of financial consequences of farms is a critical part of their exercises and includes the development of specific hierarchical and strategic measures to make an extensive arrangement of benefit the executives of undertakings. The primary components of the hierarchical and strategic arrangement of benefit the board, as indicated by Pigul N.G., are: authoritative help; data support; benefit examination frameworks and techniques; benefit arranging frameworks and techniques; internal control frameworks and techniques [9].

In the administration arrangement of the development of financial consequences of agricultural companies is critical data support, which includes the systematisation of accounting information and its disclosure in the financial statements of income, expenses and financial results from agricultural activities. Current market relations between business elements are complicated and multi-layered, and each organisation should organise an accounting system that will provide managers with reliable, timely, useful information about financial and economic activities and help make sound financial and management decisions to ensure the sustainability of enterprises [28].

2. ANALYSIS OF THE FINANCIAL MANAGEMENT SYSTEM AND ECONOMIC ACTIVITIES OF FARM "MALVA"

2.1 General characteristics of financial and economic activities of farm "Malva"

Farm "Malva" is located in Dnipropetrovsk region, Petropavlovsk district, Samara village, central street, building 54. Farm "Malva" operates on the basis of the Statute and applicable domestic legislation. Moreover on the basics of Civil and Commercial Codes of Ukraine.

Farm "Malva" carries out business activities for making profit and its next distribution among the investors and founders of the company. The subject of the company's activity is the main one - 01.11. Growing of grain and industrial crops [13].

Farm "Malva" has an independent balance sheet, banking accounts, operates on the basis of full economic settlement, self-sufficiency, works as a legal entity. Independently identify the organizational structure, bookkeeping of economic activities, is responsible for its obligations.

All the money that earned from the activity of the farm are used for the increasing of production activities and employees rewards. Taxation of the farm acts in accordance with law.

In accordance with the statute of farm "Malva" is next allocation of the money we earned from farm activity and full payments of losses of the farm. At the expense of net profit, the company can update fixed assets, replenish working capital in accordance with regulations; to form funds; increase the amount of retained earnings.

The enterprise of farm "Malva" carries out 43operative, and also accounting of results of the activity, conducts statistical reporting.

The main financial and economic indicators of farm "Malva" for the period from 2018 to 2020 are presented in Table 2.1, and their calculation is based on financial statements.

According to Table 2.1, we can conclude that in 2018 - 2020, according to all calculated indicators, there were changes in the direction of decrease by 948.7 thousand UAH. It shows that the amount of net income from selling yield decreased every year, which indicates the losses of the enterprise and its decline. The indicator of the cost of goods sold (goods, works, services) had a similar decrease, which for a certain period decreased by UAH 502.4 thousand, or 49%. This situation is associated with a reduction in production and the amount of production costs [14].

Table 2.1 - General indicators of financial and economic activity of farm "Malva" for 2018 - 2020, thousand UAH [14]

Indicator	Line code	2018	2019	2020
Net income from sales of products (goods, works, services)	2000	1 554,2	789,6	605,5
Other income	2160	310,8	157,9	121,1
Total income (2000 +2160)	2280	1865,0	947,5	726,6
Cost of goods sold (goods, works, services)	2050	1 039,1	631,5	536,7
Other expenses	2165	207,8	126,3	107,3
Total costs (2050 +2165)	2285	1 246,9	757,8	644,0
Financial result before taxes (2280 - 2285)	2290	618,1	189,7	82,6
Income tax	2300	-	-	-
Expenses (income) that reduce (increase) the financial result after tax	2310	-	-	-
Net profit (2290 - 2300 - (+) 2310)	2350	618,1	189,7	82,6

The net profit received by the company for 2018-2020 has a clear downward trend. Thus, the largest amount of positive financial result was observed in 2018 and amounted to UAH 618.1 thousand, and the smallest - in 2020 in the amount of UAH 82.6 thousand. In general, for 2018 - 2020, the company's net profit decreased by UAH 535.5 thousand. This trend is negative, as net income is an internal source of funding for the entity, and in our case, in just 2 years, it decreased by 86.6%.

According to Table 2.2, we can observe that in 2018 - 2020 the company's equity tends to decrease. Thus, in 2018 equity amounted to 1053.8 thousand UAH, and for the next period of analysis decreased to 883.6 thousand UAH. A year later, it decreased slightly and remained more or less stable 846.0 thousand UAH. Thus, the amount of reduction for the entire period is 207.8 thousand UAH. That is, equity decreased by 19.7%, which indicates a decrease in financial independence of the enterprise from credit resources.

Table 2.2 – Passive balance sheet of the farm "Malva" for 2018-2020 [14]

Indicator	Line code	Year		
Passive		2018	2019	2020
I. Equity		-	-	-
Capital	1400	638,2	638,2	638,2
Retained earnings (uncovered loss)	1420	415,6	245,4	207,8
Total for section I	1495	1053,8	883,6	846,0
II. Long-term liabilities, targeted funding and collateral	1595	12,3	9,8	11,5
III. Current liabilities		-	-	-
Short-term bank loans	1600	-	-	-
Current accounts payable for:		-	-	-
goods, works, services	1615	11,0	14,0	10,5
calculations with the budget	1620	80,9	71,4	51,4
insurance calculations	1625	228	189,4	107,0
payroll calculations	1630	42,7	74,7	52,7
Other current commitments	1690	278	427,5	388,4
Total for section III	1695	640,6	763	610
Balance	1900	1706,7	1656,4	1467,5

According to Table 2.3, we can see that for 2018-2020 non-current assets do not have a clear trend, and in general remain stable. The reason for the stable indicators is the constant size of the structural components of non-current assets, in particular the initial cost of fixed assets. Current assets, on the contrary, decreased over the analyzed period, namely by UAH 240.2 thousand, that shows decreasing of components of

current assets, including inventories. It should be noted that the value of current assets exceeds the value of non-current assets due to the specifics of the company's activities.

Table 2.3 – Active balance sheet of the farm "Malva" 2018-2020 [14]

Indicator	Line code	Year		
Active		2018	2019	2020
I. Non-current assets				
Fixed assets	1010	697,3	672,1	698,3
initial value	1011	1220,9	1234,5	1345,6
amortization	1012	523,6	562,4	647,3
Other non-current assets	1090	-	-	-
Total for section I	1095	697,3	672,1	698,3
II. Current assets				
Stocks	1100	467,8	527,3	377,4
Current receivables	1155	530,0	445,0	379,0
Money and their equivalents	1165	11,6	12,0	12,8
Other current assets	1190	-	-	-
Total for section II	1195	1009,4	984,3	769,2
Balance	1300	1706,7	1656,4	1467,5

For 2018 - 2020 there is a decrease in the amount of balance sheet currency by 239.2 thousand UAH. or 14%. This is a negative trend, as it indicates a decrease in the scale of the enterprise.

Thus, this company has constantly suffered losses during the analyzed period, which indicates inefficiency, financial and economic performance of farm "Malva" tends to deteriorate, the company does not have the potential to strengthen the material and technical base, increase production and improve his financial condition in the long run.

In order to obtain a detailed assessment of the financial condition of the company, it is advisable on the basis of financial statements to make diagnostic analysis of the efficiency of enterprise asset management by calculating the financial performance of assets, liquidity, financial stability and business activity of the entity.

2.2 Analysis of the financial condition of farm "Malva"

For clarifying assessment of the financial condition of the farm, it is needed to make diagnostic analysis of the efficiency of enterprise asset management by calculating the financial performance of assets, liquidity, financial stability and business activity of the entity. Indicators characterizing the property status of farm "Malva" are presented in Figure 2.1.

The data in Figure 1 show that the depreciation rate of fixed assets of farm "Malva" has a clear tendency to increase, but is within the normative value (less than 0.5). Thus, in 2018 fixed assets were depreciated by 42%, and in 2020 - by 48%. Accordingly, the coefficient of suitability of fixed assets has a clear tendency to decrease, which is a negative moment for the company [43].

In 2018, 57% of fixed assets were usable, and in 2020 it decreased to 52%. The ratio of the real value of fixed assets is unstable in the company's assets. During the analysis period, it changed from 0.77 in 2018 to 0.85 in 2020.

Moreover, it should be noted that the amount of fixed assets of farm "Malva" is decreased due to depreciation of fixed assets and low efficiency of using them.

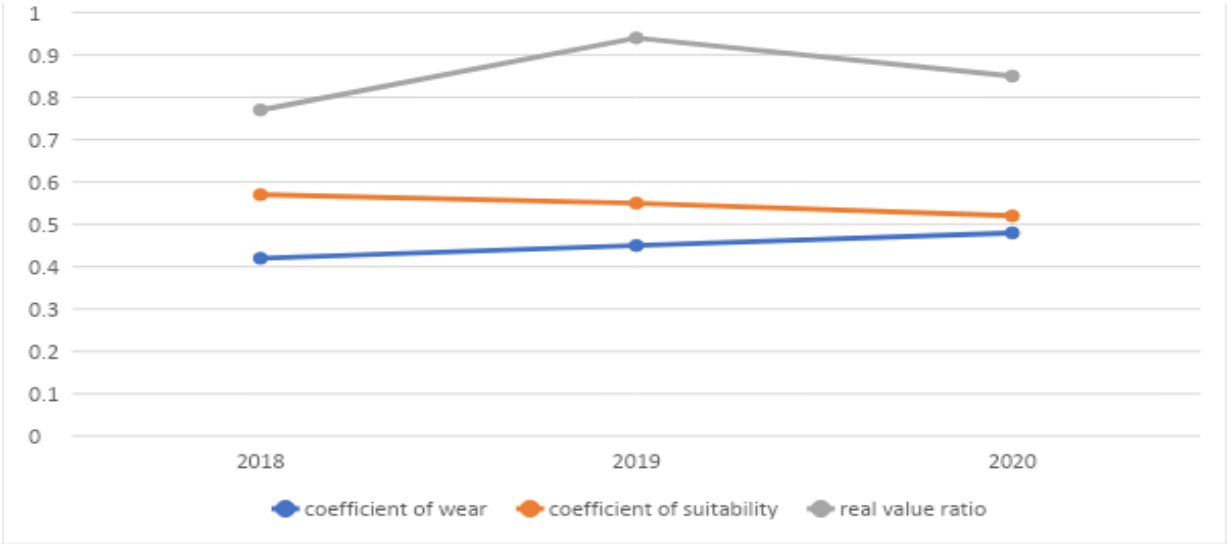

Figure 2.1 – Stability indicators of farm "Malva" for 2018− 2020

Secondary we will calculate the liquidity of the company, identifying the ability of the company to sell assets quickly and get money to pay its obligations. Liquidity indicators of farm "Malva" for the period 2018-2020 are presented in Table 2.4.

Table 2.4 - Liquidity ratios of farm "Malva" for the period 2018-2020 years.

Indicator	Year		
	2018	2019	2020
Coefficient of coverage	1,57	1,29	1,26
Rapid liquidity ratio	0,8	0,6	0,64
Absolute liquidity ratio	0,1	0,15	0,2
Net working capital, thousand UAH	368,8	221,3	159,2

The data in Table 2.4 show that the coverage ratios for 2018-2020 decreased by 0.31 percentage points. and at the end of the analysis period is equal to 1.26, which corresponds to the normative value (more than 1). Therefore, the company is able to repay current liabilities at the expense of current assets. But it should be noted that this trend indicates a decrease in the level of sufficiency of current assets of the enterprise to repay its current liabilities [43].

The quick liquidity ratio also corresponds to the normative value (0.6 - 0.8), and during the analyzed period the indicator tends to decrease. Thus, the value of the indicator decreased from 0.8 in 2018 to 0.64 in 2020, by 0.2. This situation is characterized by a decrease in the company's ability to pay current liabilities, in the case of timely settlement of debtors.

Absolute liquidity ratio do not in the frames of 0.20 - 0.25 and during this period it increased from 0.1 in 2018 to 0.2 in 2020. So, farm has the ability to partially pay for its current liabilities and in 2020 the value began to meet the standard.

The negative aspect is the reduction of net working capital in 2020 compared to 2018 by 209.6 thousand UAH. or 56.8% and this trend indicates a weak ability of the company to expand further activities and pay its current liabilities.

Thus, the values of liquidity indicators indicate a decrease in their values in 2020 compared to 2018. However, it should be noted that at the end of the analysis period, farm "Malva" had sufficient resources to settle its current liabilities, which indicates the adequacy of the company's solvency.

The next stage of the analysis is the assessment of the financial stability of farm "Malva" (table 2.5).

Table 2.5 - Indicators of financial stability of farm "Malva" for 2018 – 2020

Indicator	Year		
	2018	2019	2020
Coefficient of autonomy	0,61	0,53	0,58
Coefficient of financial dependence	0,61	0,86	0,72
Coefficient of financial stability	1,65	0,16	1,39
Equity maneuverability ratio	0,34	0,24	0,17
Equity ratio	0,35	0,21	0,2

The coefficient of autonomy identify the share of equity in total funds of the farm. This indicator isn’t stable, but in general during the analysis period it went down by 0.22 points, which is a negative trend for the company, but its value meets the standard (more than 0.5), which indicates the availability of own financial resources.

The coefficient of financial dependence for 2018 - 2020 also did not have a clear trend, but in general increased by 0.11 points and this indicates an increase in the dependence of the company on borrowed capital. During the analysis period, the funding ratio corresponded to the normative value only in 2018 and in 2020, so in this period of time there was independence of the company from borrowed resources [43].

The financial stability ratio in 2019 decreased by 1.49 points or 90%. However, in 2020 it increased sharply by 1.23 points or 88%. The value of this ratio in 2020 indicates that for every hryvnia of borrowed funds there is UAH 1.39. own funds. Given the fact that although this indicator tends to decrease, but its value is within the norm and characterizes the company's ability to pay for its obligations at the expense of its own financial resources.

The equity maneuverability ratio shows the ability of financing current farm’s activity. This indicator, in general, tends to decrease and is 0.17 points in 2020, which is 0.17 less than in 2018. The coefficient of maneuverability of equity of farm "Malva" shows result more than 0, so it follows standard.

The ratio of working capital equity characterizes the level of the company's own working capital. During 2018-2020, it decreased by 0.15 and at the end of the analysis period was equal to 0.2. This situation indicates a sufficient level of provision of the company with its own working capital.

Analysing of the financial side of farm "Malva" is evaluation of the indicators of farm's activity, that can help to evaluate the efficiency of use of the resources (table 2.6).

Table 2.6 - Indicators of company's activity of farm "Malva" for 2018-2020

Indicator	Year		
	2018	2019	2020
Asset turnover ratio	1,46	0,88	0,71
Accounts payable turnover ratio	1,62	0,83	0,9
Receivables turnover ratio	2,93	1,78	1,6
Term of turnover of accounts payable	76	243	253
Term of turnover of receivables	42	113	143
Inventory turnover ratio	E4,57	3,43	3,3
Fixed assets turnover ratio	1,27	0,64	0,45
Equity turnover ratio	0,99	0,72	0,64

The data in Table 2.6 show that almost all turnover indicators (except for the turnover ratios of fixed assets) for 2018 - 2020 tend to decrease and this indicates a decrease in the level of efficiency of existing resources of the farm "Malva". Till the past 3 years, the company has not seen a clear trend of changes in business activity, and they fluctuate over the years. Thus, the asset turnover ratio is 0.71 in 2020, which is 0.75 less than in 2018, it identify a slowdown in asset turnover.

The turnover ratio of payable accounts in 2018 - 2020 went down by 0.72, and the repayment period of accounts payable increased by 177 days. The turnover ratio of receivables go up by 1.33. At the same time, the period of repayment of receivables instended by 101 days.

The turnover ratio of inventories as a whole decreased by 1.27 points and in 2020 is equal to 2.3. The downward trend in this indicator indicates a decrease in the number

of replenishments for the year. The turnover ratio of fixed assets for the period of analysis has almost doubled and at the end of 2020 was equal to 0.45. Such changes indicate a decrease of efficiency in fixed assets. The turnover ratio of equity in 2020 was equal to 0.64, which is 0.99 points or 35.4% more than in 2018 and this indicates an increase in the level of the company's equity.

Thus, having analyzed the financial condition of farm "Malva" for 2018 - 2020, it can be noted that the company has a fairly high level of depreciation of fixed assets, and it suitability is slowly declining; liquidity ratios are in frames of standard, except for the absolute liquidity ratio, which indicates the ability of the company to repay current liabilities through current assets, identifying that liquidity ratios goes down. According to the results of the analysis of business activity of farm "Malva" it is possible to draw a conclusion that the enterprise does not use available resources efficiently enough, which negatively affects the activity of the enterprise.

The next step is to analyze the profitability of the enterprise, which characterizes the profitability and profitability of production and sales, as well as the profitability of the enterprise in general and in terms of individual financial transactions. Indicators of profitability of farm "Malva" for the period 2018 - 2020 are presented in table 2.7.

Table 2.7 – Profitability indicators of farm "Malva" for 2018-2020

Indicator	Year		
	2018	2019	2020
Return on assets ratio	0,36	0,12	0,06
Return on equity ratio	0,6	0,22	0,1
Profitability ratio	0,33	0,2	0,12
Product profitability ratio	0,79	0,5	0,36

The table shows that the return on assets decreases every year, although it remains more than 0. But based on these data, we can predict that next year the figure will be in the red, as from 2018 to 2020 it decreased by 83.3% . It can be concluded that assets are used inefficiently.

From the rate of return on equity, we see that the company is losing its efficiency. After all, in 2018 the figure was 0.6, and in 2020 it decreased by 0.5, and amounted to 0.1.

The profitability ratio also decreased from 0.33 to 0.12 in 2018-2020, which characterizes the low efficiency of economic activity of farm "Malva".

Product profitability has halved from 2018 to 2020. That is, from 0.79 to 0.36. This allows us to see that the company receives 0.36 profit per 1 UAH of costs. Therefore, we can conclude that the company is losing its profitability at a rapid pace.

2.3 Analysis of the dependence of yield on the factors of influence and calculation of the interest rate on the loan of the farm “Malva”

The economic concept of yield is associated with yield, which is defined as the amount of crop production obtained per unit area. Yields of open ground crops are calculated in kilograms per hectare (kg / ha) [15].

Expected yield (types of harvest) - the expected harvest, which is determined in certain periods of growth and development of crops by stand density and general condition of plants. Measured in c / ha or estimated: high, medium, low, last year's level, etc. The indicator of expected yield is used for planning agro-technical measures.

Wheat in Ukraine is the main grain crop, the study of factors influencing the quantity and quality of the crop, the introduction of new varieties of wheat, have always been a priority in all leading breeding institutes. Wheat yield in Ukraine is influenced by many factors, they have:

- Natural character (soil fertility, climatic conditions);
- Agrotechnological (tillage, choice of technology and timing of sowing, weed and insect protection strategy, choice of predecessor);
- Biological factors (seed genetics, preparation of seeds for sowing, fertilization with fungicides, insecticides, growth stimulants);

- Application of fertilizers, trace elements.

All these factors are of great importance, each farmer must choose the optimal combination of factors that can be changed to get the maximum effect in the conditions of their cultivation. Undoubtedly, this can be achieved empirically, taking into account all the factors combined. Let's look at some of them and their impact on crop yields in your field [15].

To increase the yield of wheat per hectare, it is necessary to take into account the presence and content of nutrients and trace elements in the soil necessary for fruitful ripening. You need to know and understand what elements are needed and in what quantity, at what time are needed for crops, taking into account your soil analysis [28].

Today, soil analysis is a necessary procedure, it will save you a lot of money on the application of mineral and organic fertilizers, make their application economically feasible and profitable.

The main agricultural technique that improves the quality and yield of wheat is the use of fertilizers; competent and correct application of mineral fertilizers allows to double the yield under certain conditions. There are a number of recommendations for the application of certain mineral fertilizers, trace elements at all stages of grain ripening, which will significantly increase your efficiency in the field and reduce the cost of sowing 1 hectare of wheat.

There is such a concept of planned yield, based on it, the required amount of nitrogen fertilizers and other trace elements is applied, taking into account your agricultural techniques and expected precipitation. The greatest effect is observed with fractional, repeated application of mineral fertilizers in autumn and spring, as well as during the earing of the crop. Moisture and soil composition play an important role.

The main tasks at the initial stage of sowing and tillage before the entry of summer crops:

- Obtaining uniform shoots.
- Root plant development.
- Formation of a tillering node.

The plant undergoes a hardening process with a minimum moisture content in the tissues and a maximum sugar content.

The soil after the predecessor must have a fine structure, have sufficient moisture and contain nutrients in digestible form, such as phosphorus, potassium, calcium, nitrogen, magnesium and many others.

Farm "Malva" additionally used Defense from Imptorgservice to harvest wheat, and the result was significant. Wheat did not react with germination to provocative rains, fast start of growth and friendly seedlings after good rain (the soil was soaked by 6 cm), providing the sprout at the start with the necessary microelements. When sowing, complex fertilizers with low nitrogen content are usually used to avoid crop overgrowth [16].

Rainfall has not only a quantitative factor, but also the growing season they had. A well-developed root system of wheat uses moisture from the autumn-winter period and is least susceptible to a lack of precipitation in the spring, but crop yields directly depend on the required amount of precipitation, including autumn.

The ability of crops to absorb fertilizers and nutrients directly depends on the presence of moisture in the soil. Plastic wheat varieties are the most resistant to extreme conditions, including drought. But intensive varieties of wheat under favorable weather and temperature conditions, in the presence of sufficient nutrients, yield significantly exceeds the yield of wheat per hectare.

Another important natural factor related to weather conditions is temperature. Prolonged warm autumn leads to the growth of crops, which will negatively affect the hot summer, lack of warm days in the spring will not allow the plant to fully develop the root system and go through the stage of tillering, which will lead to reduced yields and difficult summer plantings. When wondering what determines the yield of wheat, you need to understand that different varieties of wheat differ significantly in resistance to weather factors, and have advantages in choosing a technology in the field. It is very important to decide on the right choice of winter crops you need, taking into account all your agronomic and weather conditions. [17]

One of the important tasks of the forecasting process is to establish relationships between phenomena, their measurement and quantification.

The study of phenomena in their relationship means, first of all, the study of causal relationships between them, because one of the phenomena is usually always the cause, and the other - the consequence, ie the result of the influence of this cause. This relationship can be determined by a correlation relationship that differs in the direction of forward and reverse.

Inverse is the dependence when the value of the object under study decreases with increasing factor trait, and vice versa, when the value of the influencing factor decreases, it increases.

To determine the relationship between the object of study - the interest rate on the loan, and the factors of influence - the refinancing rate, inflation, deposits of individuals and legal entities in banks, budget revenues, use CORREL Microsoft Excel, which calculates the correlation coefficient affecting the yield of farm "Malva" 2014-2020 (table 2.8)

Table 2.8 – Indicators of factors influencing the yield of farm "Malva" 2014-2020

		Years							
		2014	2015	2016	2017	2018	2019	2020	2020(Real)
Factors	fertilizer costs (uan/ha)	220,00	269,00	298,00	325,00	394,00	463,00	489,8666667	510,00
	temperature (average in summer)	22,6	23,7	24,4	23,5	21,3	22	21,80666667	22,5
	amount of precipitation (mm/month)	448	594	432	468	401	365	355,5333333	324
	sunny days (year)	89	171	91	102	187	125	151,4	151,2
	PH of ground	5,8	5,2	6,7	6,2	6	7	6,94	7
		2014	2015	2016	2017	2018	2019	2020	2022
Economic indicator	Yield (kg/ha)	4141,00	4652,00	4316,00	4640,00	4852,00	5500,00	5674,00	5896,486
Hectare	212,5	1	2	3	4	5	6	7	9
Economic indicator	Yield (kg/field)	4141,00	4652,00	4316,00	4640,00	4852,00	5500,00	5674,00	5896,49

The correlation coefficient is used to determine the relationship between two properties. This function returns the correlation coefficient between the cell intervals of the values of the object under study and the values of the factor feature.

Notes:

- Arguments must be numbers or names, arrays or references that contain numbers.
- If an argument that is an array or reference contains text, logical values, or empty cells, such values are ignored; however, cells that contain zero values are taken into account.
- If the value arrays have a different number of data points, the CORREL function returns the # N / A error value.
- If one of the value arrays is empty or if (standard deviation) their values are zero, the CORREL function returns the # CASE!
- The formula for determining the correlation coefficient is as follows:

= CORREL (array of values of the studied object; (2.8) array of values of attributes of the factor)

Determination of the correlation coefficient for each influencing factor and the studied object in turn:

1) fertilizer costs: CORREL (fertilizer costs; yield)

= (220, 269, 298, 325, 394, 463; 4141,00; 4652,00; 4316,00; 4640,00; 4852,00; 5585,00) = 0,92;

2) temperature: CORREL (temperature; yield) = (22.6, 23.7, 24.4, 23.5, 21.3, 22; 4141.00; 4652.00; 4316.00; 4640.00; 4852.00; 5585.00) 0.53;

3) precipitation: CORREL (precipitation; yield) = (448, 594, 432, 468, 401, 365; 4141,00; 4652,00; 4316,00; 4640,4852,00; 5585,00) = - 0.4;

4) sunny days: CORREL (sunny days; yield) = (89, 171, 91, 102, 187, 125; 4141,00; 4652,00; 4316,00; 4640,00; 4852,00; 5585,00) = 0.42;

5) pH of the soil: CORREL (pH of the soil; yield) = (5.8, 5.2, 6.7, 6.2, 6, 7; 4141.00; 4652.00; 4316.00; 4640.00; 4852.00, 5585.00) = 0.45.

Based on the calculated correlation coefficients, the following conclusions can be drawn:

- fertilizer costs have the highest degree of dependence on yield (almost 92%), and this dependence is direct, ie with increasing fertilizer costs increases yields - as evidenced by a correlation coefficient of 0.92;

- temperature has an almost average dependence on yield (almost 53%), and this dependence is inverse, ie with increasing temperature - the yield decreases - as evidenced by the correlation coefficient, which is -0.53;
- the amount of precipitation has a degree of dependence on yield (≈ 40%), and this dependence is inverse, ie with increasing amount of precipitation the yield decreases - as evidenced by the correlation coefficient -0.4;
- sunny days have a degree of dependence on yield (≈ 42%), and this relationship is direct, ie with increasing number of sunny days, yields also increase - as evidenced by a correlation coefficient of 0.42;
- Soil pH has a degree of dependence on yield (≈ 45%), and this relationship is direct, ie with increasing soil pH yield also increases - as evidenced by a correlation coefficient of 0.45.

Let's make a forecast calculation of yield for a certain period using the LINEAR function of Microsoft Excel.

Using the least squares method for calculating the straight line that best approximates the available data the LINEAR function could calculate statistics. Described the resulting string the function returns an array. Because an array of values is returned, the function must be specified as an array formula.

The equation for the line looks like this:

$$y = mx + b \quad (3.1)$$

or in the case of several ranges of x values

$$y = m1x1 + m2x2 + ... + b \quad (3.2)$$

where the dependent value of y is a function of the independent value of x, the value of m is the coefficient corresponding to each independent variable x, b is a constant.

The function looks like this:

LINEAR (known_values_In; known_values_X; const; statistics) (3.3)

Known values of y are many values of B that are already known for the relationship

$$y = mx + b. \quad (3.4)$$

Known X values are an optional set of X values that are already known for the relationship

$$y = mx + b. \quad (3.5)$$

Constanta is a logical value that indicates whether the constant b should be 0.

Statistics are logical values that indicate whether additional regression statistics need to be returned.

Calculate the required values of the coefficients for the forecast equation using the LINEAR function for the object of study - the interest rate on the loan:

= LINEAR (yield; fertilizer costs, average temperature, precipitation, number of sunny days, PH of the earth; TRUTH; TRUE)

Calculating the regression statistics, we obtain the following data (Table 2.9.):

Table 2.9 – Regression statistics

	fertilizer costs (x1)	average temperature (x2)	amount of sunny days (x3)	PH of ground(x4)	amount of precipitation (x5)
r2	0,8548	0,2758	0,1759	0,2002	0,1621

r2 is the coefficient of determinism. The actual values of y and the values obtained from the equation of the line are compared; based on the results of the comparison, the coefficient of determinism is calculated, which is normalized from 0 to 1. If it is equal to 1, then there is a complete correlation with the model, ie there is no difference between actual and calculated. value of y. Otherwise, if the coefficient of determinism is equal to 0, then the regression equation can not predict the value of y.

So, the forecast equation will look like this:

Y = 4.9994xx + 3044.5 + (-215.29x2 + 9617.3) + (-2.4281x3 + 5779.4) + 4.7199x4 + 4081.7 + 329.76x5 + 2655.178, 4 + 4.9994xx - 215.29x2 - 2.4281x3 + 4.7199x4 + 329.76x5 (4.4)

The standard error values for each factor are as follows:

1) for the calculation of Linear TREND - 218.16;
2) for the Trend chart - 218.62;
3) for exponential smoothing - 241.22;
4) for multiple regression - 603.61;
5) for the use of growth - 162.03.

The coefficient of determinism is equal to 0.9668, which indicates a close relationship between the object under study - yield - and factors of influence.

To calculate the estimated value of yield for 2020 using a certain regression equation, it is necessary to determine the value of the factors of influence for 2020. To do this, use the TREND feature of Microsoft Excel.

For fertilizer costs:

= TREND (fertilizer costs; period; 2020) = 489,8666667,

That is, the level of fertilizer costs in 2020 should be UAH 489.87 / ha;

For medium temperature:

= TREND (average temperature; period; 2020) = 21.80666667,

The volume of deposits of individuals and legal entities in 2020 amounted to 21.81 degrees;

For precipitation:

= TREND (precipitation; period; 2020) = 355,5333333,

The amount of precipitation in 2020 is 355.53 mm / month;

For the number of sunny days:

= TREND (number of sunny days; period; 2020) = 151.4 days,

That is, according to the results of the TREND function, the number of sunny days in 2020 should be 151 days.

For ground PH:

= TREND (PH land; period; 2020) = 6.94

That is, according to the results of the function, the PH tendency of land in 2020 should be 6.9.

Let's calculate the forecast value of the interest rate on the loan for 2020 using the regression equation based on the values of the factors obtained by the TREND function:

Y2020 = 0.3 * (4.9994 * (46.2 * 7 + 166.47) + 3044.5) +0.25 * (- 215.29 * (- 0.3171 * 7 + 24.027) + 9617 , 3) +0.1 * (- 2.4281 * (- 27.371 * 7 + 547.13) + 5779.4) + 0.2 * (4.7199 * (6.8286 * 7 + 103.6) + 4081.7) + 0.15 * (329.76 * (0.2257 * 7 + 5.36) + 2655.5) = 5070.4

Using the capabilities of Microsoft Excel, we will build a trend line based on available profitability statistics. We choose the logarithmic trend, because in this case the approximation coefficient will be the most important, namely - 0.6296.

The mathematical formula of functional dependence will look like this:

$$y = 220.54x + 3911.6$$

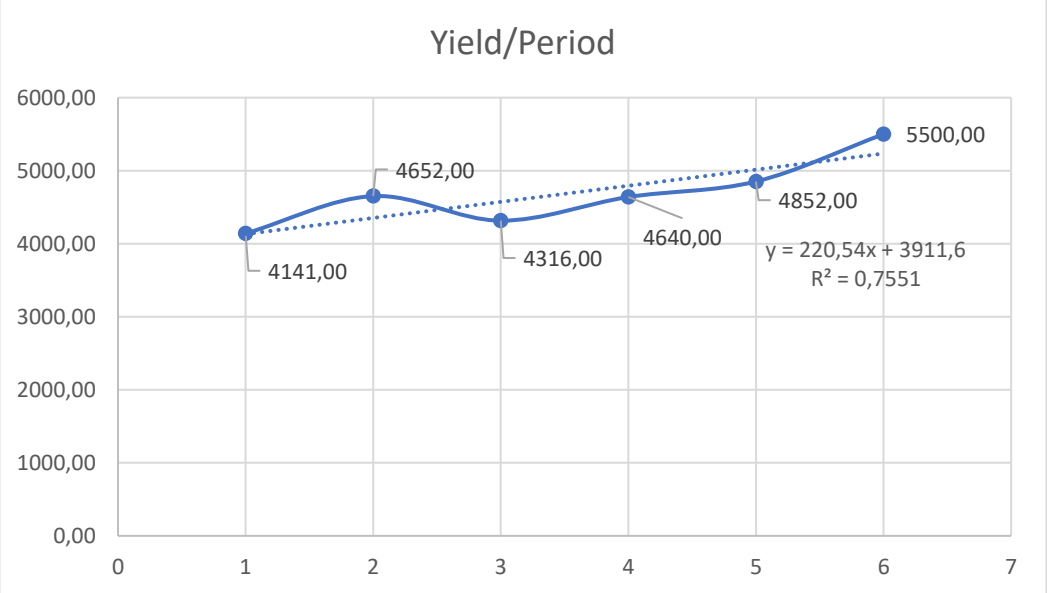

Figure 2.2 – Trend line of the dependence of profitability to the period 2014-2019

This trend line determines the dependence of profitability to the period, each of which is assigned a value of 1 and above, starting from the beginning of the analyzed period.

3. IMPROVING THE FINANCIAL MANAGEMENT SYSTEM OF FARM "MALVA"

3.1 Effective tool for improving the financial management system of farms

Agricultural creation is a particular area of the economy, portrayed by an elevated degree of hazard and vulnerability of economic action, one reason for this is that in horticulture the economic course of reproduction is firmly entwined with regular (natural) processes [28].

At the current transformative phase of marketing relationships, the exercises of agricultural enterprises occur in powerful, frequently changing circumstances. Thus, there is a requirement for a quick reaction to changes in the outside climate, which represents a steady danger to the economy's situation on the lookout. Reaction speed is related with the rational utilization of internal capabilities to create and carry out their own development methodology, as a bunch of explicit measures to choose vital bearings of development, characterizing key goals pointed toward executing the most ideal choices for ideal creation and deals of items with rational utilization of asset potential. making good internal and outer circumstances for effective activity. In like manner, the executives choices in homestead ought to be pointed essentially at amplifying the utilization of internal stores - effective utilization of creation and asset potential, development and execution of fitting key measures and exercises that would permit ranch not exclusively to make due in that frame of mind affected by ecological elements, for example, Covid19, which unequivocally impacted the organization's monetary execution, yet in addition to guarantee supportable development using its own stores to further develop creation proficiency and internal capabilities to counter dangers of changing climate.

For better understanding how we can develop financial management system we use the example of international agriculture enterprises such as US Tenerife farm. Figure 3.1 present the different financial management sources used by farm in the USA to meet their agricultural goals with earnings and expenses. As we can see farmers use

sales from their agricultural produce (fund_sale), past savings (fund_save), off-farm income (offfarminc), income from government payments and incentives (govpayinc), and external loan and credits (fund_loan).

Figure 3.1 shows the distribution of sources used to meet farm expenses by farms. We can see that 32% of sampled farmers obtained more than 75% of their funds meeting farm expenses from the fund sales of their agricultural products. Nearby 7% of sampled farms financing more than 75% by off-farm income. Other 50-75% of financial sources for farms for agricultural expenses came from loans, government payment (Figure 3.1) [42].

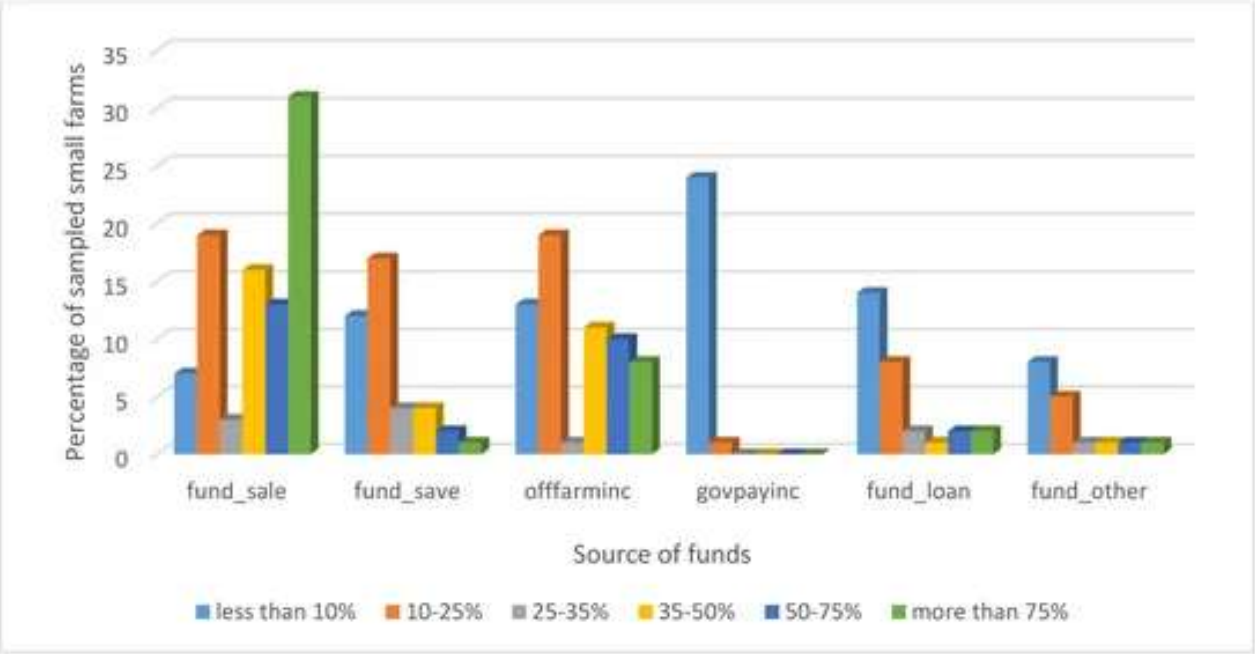

Figure 3.1 – Different sources of financing and the extent of use to meet agricultural expenses by farm [42]

The profitability of production of farm is largely ensured by the optimal structure of production, taking into account the available resource potential and the choice of production of those crops that have the lowest production costs and are in demand in the agricultural market. Determining the optimal production program is quite a complex process. This is due to the peculiarities of agricultural production planning, as well as a large number of factors that affect the production process and the relationship between industries [28].

An effective instrument for further developing the financial management system of farm is to work on the utilization of strategies for economic and mathematical modeling, considering the arrangement of elements of impact and interrelated pointers on the efficiency of creation and economic exercises, specifically:

- compulsory execution of long-term agreements with purchasers for the stockpile of specific kinds of agricultural items;
- accomplishing the greatest degree of levelheaded and proficient utilization of creation and asset capability of the endeavor, the steady development of work efficiency;
- guaranteeing the minimization of long-term and current expenses per unit of result, unit of land region or restrictive head of domesticated animals while continually expanding crop yields in crop creation;
- guaranteeing greatest benefit by fortifying the strengths of the farm in the facing of external threats, including competitors.

3.2 Developing of the financial management system of the farm “Malva”

In the economic-mathematical model, the answer for ranch "Malva" can be founded on the accompanying streamlining standards: the base expense of creation, the most extreme volume of deals, the greatest benefit.

The administration of homestead "Malva" ought to likewise not disregard the requirement for ideal substitution of hardware, agricultural apparatus, ie to guarantee the execution of the cycles of basic and broadened reproduction underway.

To forestall the decay of monetary strength, it is important to utilize an assortment of monetary instruments and systems, one of which is renting. Anyway, while searching for ways of working on the monetary state of ranch "Malva", it is important to painstakingly evaluate the expenses expected to execute these actions, as well as the conceivable expansion in benefits that can be gotten by the economy of this industry. Likewise, it ought to be noticed that one of the ways of working on the

monetary state of ranch "Malva" is to take part in different taxpayer supported initiatives for the development and backing of horticulture.

Given the monetary execution of homestead "Malva" and the examination and computations, the division into two primary ways of enhancing the monetary state of the endeavor stays important:

- improvement of execution (the organization ought to procure more benefit)
- rational administration of the aftereffects of the undertaking.

Nonetheless, these two different ways - "procure" and "discard acquired" - are not same. It ought to be recalled that the premise of a stable monetary place of the venture for quite a while is the benefit.

While improving the monetary state of homestead "Malva" it is important to endeavor, most importantly, to guarantee productivity. Chances to streamline what is going on through more rational administration of the aftereffects of exercises are viable, yet over the long run are thorough.

For instance, the money shortage in 2020 could be briefly overwhelmed by delaying installments to loan bosses until the cutoff time, getting the most extreme potential advances from purchasers, it was feasible to draw in credit, you can, at any rate, concede installment of assessments and compulsory installments and expenses. Be that as it may, this save for deferral of installments isn't limitless. The organization can purchase stocks in the base sums, have the option to rapidly reimburse the debt to debtors, yet you can not decrease stocks underneath the base required. You can drive the purchaser to take care of the bills for the items consistently, yet at the same no more. That is, the chance of decreasing the ongoing resources of homestead "Malva" will at some point or another end.

Moreover, as per the computations and anticipating the future monetary state of ranch "Malva" I offer the accompanying measures to upgrade the construction of property and wellsprings of its development:

1) opening admittance to the bank's credit assets, particularly long-term advances - this will assist with limiting how much business and duty

advances and lessen creditor liabilities to the ideal size, which will streamline the construction of liabilities;

2) the utilization of the strategy for working influence to additional increment the profit from value and smooth out the construction of liabilities by laying out the ideal proportion between how much value and debt capital.

Methodical command over the development of assets permits to guarantee the monetary security and dissolvability of ranch "Malva" both current and estimate. The primary reason for controlling receivables is to guarantee that counterparties follow the terms of agreements and forestall liquidity issues. In a market economy, it is important not exclusively to precisely dissect what is going on the market, yet in addition to routinely gauge its further development as determined above for 2015 - 2020.

CONCLUSIONS

At the current transformative phase of the public economy, the exercises of agricultural enterprises happen in unique, frequently changing circumstances, which adversely influences the general presentation of their creation and economic exercises. The essential development of agricultural enterprises ought to be centered around expanding the monetary consequences of creation and economic exercises by expanding creation and further developing item quality at ideal expenses for its creation, which thusly will guarantee an elevated degree of effectiveness.

To guarantee the steady development of agricultural enterprises, the primary needs in the arrangement of monetary execution the executives ought to be the execution of the board measures pointed toward upgrading the worth of monetary outcomes, in particular:

- arranging and estimating the organization's benefits based on the ideal proportion of fixed and variable expenses, costs and creation volumes;
- development of the ideal program of creation of the primary sorts of items as per market prerequisites and purchaser needs, considering the internal conceivable outcomes of utilizing the accessible asset potential, which will upgrade benefits per unit of land and different assets engaged with creation;
- development of own development technique considering the experience of a specific endeavor and the quirks of its exercises, the execution of which will guarantee the arrangement of a stable serious situation in the market.

Pioneering methodology for the development of agar enterprises during the time spent overseeing monetary outcomes is of critical functional significance, which determines the course of additional examination.

Markers ranch "Malva", which portrays the condition of fixed resources is breaking down because of devaluation of fixed resources, as well as lessening the degree of productivity of their utilization.

The upsides of liquidity markers demonstrate a reduction in their qualities in 2020 contrasted with 2018. In any case, it ought to be noticed that toward the finish of

the ranch "Malva" examination period, Malva had adequate assets to settle its ongoing liabilities, showing the sufficiency of the organization's dissolvability.

The following phase of the investigation is to survey the monetary strength of homestead "Malva". Markers demonstrate an adequate degree of safety of the organization's own functioning capital. Monetary steadiness pointers show that the organization can pay its liabilities to the detriment of its own monetary assets.

The examination of monetary solidness shows that the organization has adequate own monetary assets to be free of outside supporting, yet it ought to be noticed that this degree of autonomy diminishes during the investigation time frame. As indicated by the consequences of the investigation of business action of homestead "Malva" it is feasible to reach an inference that the undertaking doesn't utilize accessible assets successfully enough, which adversely impacts action of the venture.

Taking everything into account, we can say that ranch "Malva" ought to change the procedure of creation and marketing of items to stay away from liquidation and increment benefit. In any case, it ought to be noticed that the organization has an adequate number of assets to settle its ongoing liabilities, which shows the ampleness of the degree of dissolvability of the organization.

An unfavorable combination of two or more factors can nullify all the efforts of farmers, significantly reducing the profitability of the crop or lead to crop failure. The main unfavorable factor in our eastern regions is the lack of precipitation in the spring, weak and sometimes complete lack of precipitation in summer for wheat areas, increasing the average daily temperature in summer with little precipitation.

In the process of calculations, the relationship between the previous and the object – yield and the introduced factors:

1) The coefficient of determinism is equal to 0.9668, which indicates a close relationship between the object under study - yield and influencing factors.
2) The forecast equation will look like this: Y = 25 178.4 + 4.9994x1 - 215.29x2 - 2.4281x3 + 4.7199x4 + 329.76x5
3) For fertilizer costs TREND = 489.8666667 - ie the level of fertilizer costs in 2020 should be 489.87 UAH / ha;

4) For the average temperature TREND = 21.80666667 - the volume of deposits of individuals and legal entities in 2020 amounted to 21.81 degrees;
5) For the amount of precipitation TREND = 355.5333333 the amount of precipitation in 2020 is 355.53 mm / month;
6) For the number of sunny days TREND = 151.4 days - ie according to the results of the function TREND the number of sunny days in 2020 should be 151 days.
7) For soil PH TREND = 6.94 - ie according to the results of the TREND function, the PH of terrestrial days in 2020 should be 6.9.
8) For the calculation of Linear TREND - 218.16;
9) For the Trend chart - 218.62;
10) For exponential smoothing - 241.22;
11) For multiple regression - 603.61;
12) For the use of increments - 162.03.

Thus, we can say that the yield in 2020 will be 5455.4 kg / ha.

An effective tool for improving the management system of financial results of farm "Malva" is to improve the use of methods of economic and mathematical modeling, taking into account the system of factors of influence and interrelated indicators on the efficiency of production and economic activities, namely:

- compulsory execution of long-term agreements with purchasers for the stockpile of specific kinds of agricultural items;
- accomplishing the greatest degree of levelheaded and proficient utilization of creation and asset capability of the endeavor, the steady development of work efficiency;
- guaranteeing the minimization of long-term and current expenses per unit of result, unit of land region or restrictive head of domesticated animals while continually expanding crop yields in crop creation;
- guaranteeing greatest benefit by fortifying the strengths of the farm in the facing of external threats, including competitors.

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APPENDIX A

Financial statements of farm "Malva" for 2018-2020

Table A.1 - Balance Sheet (Statement of Financial Position) farm "Malva" for 2018 - 2020, thousand UAH

Indicator	Line code	Year		
Active		2018	2019	2020
I. Non-current assets				
Fixed assets	1010	697,3	672,1	698,3
initial value	1011	1220,9	1234,5	1345,6
amortization	1012	523,6	562,4	647,3
Other non-current assets	1090	-	-	-
Total for section I	1095	697,3	672,1	698,3
II. Current assets				
Stocks	1100	467,8	527,3	377,4
Current receivables	1155	530,0	445,0	379,0
Money and their equivalents	1165	11,6	12,0	12,8
Other current assets	1190	-	-	-
Total for section II	1195	1009,4	984,3	769,2
Balance	1300	1706,7	1656,4	1467,5
I. Equity		-	-	-
Capital	1400	638,2	638,2	638,2
Retained earnings (uncovered loss)	1420	415,6	245,4	207,8
Total for section I	1495	1053,8	883,6	846,0
II. Long-term liabilities, targeted funding and collateral	1595	12,3	9,8	11,5
III. Current liabilities		-	-	-
Short-term bank loans	1600	-	-	-
Current accounts payable for:		-	-	-
goods, works, services	1615	11,0	14,0	10,5
calculations with the budget	1620	80,9	71,4	51,4
insurance calculations	1625	228	189,4	107,0
payroll calculations	1630	42,7	74,7	52,7
Other current commitments	1690	278	427,5	388,4
Total for section III	1695	640,6	763	610
Balance	1900	1706,7	1656,4	1467,5

Table A.2 - Statement of financial results (Statement of comprehensive income) farm "Malva" for 2018 - 2020, thousand UAH

Indicator	Line code	2018	2019	2020
Net income from sales of products (goods, works, services)	2000	1 554,2	789,6	605,5
Other income	2160	310,8	157,9	121,1
Total income (2000 +2160)	2280	1865,0	947,5	726,6
Cost of goods sold (goods, works, services)	2050	1 039,1	631,5	536,7
Other expenses	2165	207,8	126,3	107,3
Total costs (2050 +2165)	2285	1 246,9	757,8	644,0
Financial result before taxes (2280 - 2285)	2290	618,1	189,7	82,6
Income tax	2300	-	-	-
Expenses (income) that reduce (increase) the financial result after tax	2310	-	-	-
Net profit (2290 - 2300 - (+) 2310)	2350	618,1	189,7	82,6