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Original article

## THE IMPACT OF TOTAL CAPITAL ON THE FINANCIAL STABILITY AND SOLVENCY OF AGRICULTURAL ENTERPRISES

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### *Abstract*

**Background.** The study provides definitions of “capital”, “total capital”, “financial stability”, “solvency”, and analyzes the influence of the composition and structure of total capital on the financial stability and solvency of agricultural formations. The study was based on general scientific methods of cognition. The study examined the history of the development of the definition of “capital” and its components, systematized the risks that have a negative impact on the solvency and financial stability of agricultural enterprises. The article defines the components of the total capital of agricultural enterprises, examines their relationship, as well as the relationship between financial stability and solvency, selects indicators that most fully characterize the level of financial stability and solvency of economic entities, analyzes the impact of total capital on the financial stability and solvency of agricultural enterprises. The study formulates the main problems that have a negative impact on the composition and structure of total capital and, as a consequence, on the financial stability and solvency of agricultural enterprises, and suggests directions for optimizing the composition and structure of total capital that can have a positive impact on the level of financial stability and solvency of agricultural businesses.

**Purpose.** The purpose of this study is to examine the impact of total capital on the financial stability and solvency of agricultural enterprises.

**Materials and methods.** The study was based on the following methods of knowledge: static, dialectical, logical, comparative, and also used the methods of modeling, formalization, synthesis, induction, deduction, analysis, grouping, observation, absolute, relative, average values.

The empirical basis of the study was the main forms of accounting statements of agricultural businesses operating in the southern regions of the Rostov region, as well as official statistics.

The scientific and methodological basis of the study was the legislatively enshrined principles of drawing up accounting and statistical reports, methods of analyzing financial stability and solvency, articles of domestic and foreign accounting in scientific publications, materials of scientific and practical conferences, monographs.

**Results.** Optimal interaction of the components of the total capital ensures effective management of an agricultural enterprise in modern business conditions and has a direct impact on its financial stability and solvency.

The study showed that all enterprises where equity capital occupies a predominant share in the financial capital are more financially stable than those that carry out statutory activities at the expense of borrowed sources of financing.

The share of debt coverage of agricultural enterprises depends to a greater extent on the amount of financial capital in the structure of total capital, that is, the larger the share of equity capital in the total capital, the greater the likelihood of timely coverage of debt obligations to counterparties. The probability of repaying current debt is higher for those enterprises that have a large share of borrowed capital in the total.

The lowest level of total solvency is observed at an enterprise with a large share of borrowed capital.

Thus, the ratio of financial capital components in the total capital affects the level of financial stability and solvency of agricultural enterprises. Physical capital as part of total capital has an indirect impact on the financial stability and solvency of agricultural enterprises.

**Conclusion.** Different forms of ownership and sizes of the enterprises under study do not have a significant impact on the composition and structure of their total capital. This fact has a negative impact on the level of their financial stability and solvency, which suggests the need to develop measures to optimize the composition and structure of the capital of enterprises, taking into account the conditions for implementing their statutory activities.

**Keywords:** total capital; financial stability; solvency; physical capital; financial capital; agricultural enterprises

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Научная статья

## ВЛИЯНИЕ СОВОКУПНОГО КАПИТАЛА НА ФИНАНСОВУЮ УСТОЙЧИВОСТЬ И ПЛАТЕЖЕСПОСОБНОСТЬ СЕЛЬСКОХОЗЯЙСТВЕННЫХ ПРЕДПРИЯТИЙ

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### *Аннотация*

**Обоснование.** В исследовании даны определения дефиниций «капитал», «совокупный капитал», «финансовая устойчивость», «платежеспособность», проанализировано влияние состава и структуры совокупного капитала на финансовую устойчивость и платежеспособность сельскохозяйственных формирований. Проведенное исследование базировалось на общенаучных методах познания. В ходе исследования была рассмотрена история развития дефиниции «капитал» и его составляющих, систематизированы риски, оказывающие негативное влияние на платежеспособность и финансовую устойчивость предприятий аграрного бизнеса. В статье определены составляющие совокупного капитала предприятий АПК, исследована их взаимосвязь, а также взаимосвязь финансовой устойчивости и платежеспособности, проведен отбор показателей, наиболее полно характеризующих уровень финансовой устойчивости и платежеспособности экономических субъектов, проведен анализ влияния совокупного капитала на финансовую устойчивость и платежеспособность предприятий аграрного бизнеса. В исследовании сформулированы основные проблемы, оказывающие негативное влияние на состав и структуру совокупного капитала и, как следствие, на финансовую устойчивость и платежеспособность сельскохозяйственных предприятий, предложены направления оптимизации состава и структуры совокупного капитала, которые могут оказать положительное воздействие на уровень финансовой устойчивости и платежеспособности предприятий аграрного бизнеса.

**Цель.** Целью данного исследования является изучение влияния совокупного капитала на финансовую устойчивость и платежеспособность сельскохозяйственных предприятий.

**Материалы и методы.** Исследование базировалось на следующих методах познаний: статическом, диалектическом, логическом, сравнительном, а также использовались методы моделирования, формализации, синтеза, ин-

дукции, дедукции, анализа, группировки, наблюдения, абсолютных, относительных, средних величин.

Эмпирической базой проведенного исследования послужили основные формы бухгалтерской отчетности предприятий аграрного бизнеса, функционирующих в южных районах Ростовской области, а также официальные статистические данные.

Научно-методологической основой исследования послужили законодательно закрепленные принципы составления бухгалтерской и статистической отчетности, методики анализа финансовой устойчивости и платежеспособности, статьи отечественных и зарубежных учетных в научных изданиях, материалы научно-практических конференций, монографии.

**Результаты.** Оптимальное взаимодействие составляющих совокупного капитала обеспечивает эффективное управление аграрным предприятием в современных условиях хозяйствования и оказывает непосредственное влияние на его финансовую устойчивость и платежеспособность.

Проведенное исследование показало, что все предприятия, где преобладающую долю в финансовом капитале занимает собственный капитал, более финансово устойчивы, чем те, которые осуществляют уставную деятельность за счет заемных источников финансирования. Доля покрытия долгов сельскохозяйственных предприятий в большей степени зависит от величины финансового капитала в структуре совокупного капитала, то есть чем большую долю занимает собственный капитал в совокупном капитале, тем больше вероятности своевременного покрытия долговых обязательств перед контрагентами. Вероятность погашения текущей задолженности выше у тех предприятий, у которых велика доля заемного капитала в составе совокупного. Самый низкий уровень общей платежеспособности наблюдается на предприятиях, где имеет место большая доля заемного капитала.

Таким образом, на уровень финансовой устойчивости и платежеспособности аграрных предприятий оказывает соотношение составляющих финансового капитала в составе совокупного капитала. Физический капитал в составе совокупного капитала оказывает опосредованное влияние на финансовую устойчивость и платежеспособность аграрных предприятий.

**Заключение.** Различные формы собственности и размеры исследуемых предприятий не оказывают существенного влияния на состав и структуру их совокупного капитала. Данный факт оказывает негативное влияние на уровень их финансовой устойчивости и платежеспособности, что предполагает необходимость разработки мероприятий по оптимизации состава и структуры капитала предприятий с учетом условий осуществления их уставной деятельности.

**Ключевые слова:** совокупный капитал; финансовая устойчивость; платежеспособность; физический капитал; финансовый капитал; сельскохозяйственные предприятия

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## Introduction

Modern economic conditions, caused by economic and political reasons, force enterprises of all forms of ownership to solve the problem of ensuring uninterrupted financing of statutory activities.

In the current economic conditions, characterized by a high level of instability [1] and uncertainty [2], these are agrarian formations that are in a special position, on whose activities the food security of the state depends. The emerging changes, taking into account modern target settings for the positive evolution of agribusiness [3], leads to an urgent need for constant monitoring of the financial condition of agricultural formations, since it reflects the level of efficiency of the use of the property at their disposal.

The most important indicators characterizing the effectiveness of the statutory activities of agricultural business enterprises are indicators of financial stability and solvency.

The financial stability of an enterprise is its ability to effectively manage its own financial resources.

Solvency characterizes the ability of an enterprise to pay off its obligations at any given moment in time. A good level of solvency gives an economic entity an advantage in attracting and further using investments and borrowed funds to expand production.

Recently, the problem of increasing the level of financial stability and solvency has become quite acute for most agricultural formations, since the adoption of effective management decisions requires the management of the latter to clearly understand the degree of influence of the main factors on their value [4].

Economic science considers financial stability as a starting point for the growth of the well-being of any economic entity, indicating the degree of its competitiveness.

The financial stability of an agricultural business formation depends both on the degree of efficiency of its economic resources and on the ratio of the components of the enterprise's total capital that form its level of solvency, with the ratio of the components of financial capital being of primary importance.

With optimal synchronization of cash flows and outflows, the enterprise will be able to repay its obligations in a timely manner, its profit will grow, which will lead to an improvement in the level of its financial condition. However, such synchronization is possible for an enterprise only under conditions of sufficient financial resources for the implementation of the statutory activities of the economic entity.

Consequently, both the solvency and financial stability of a business entity depend on the optimal provision of resources and their effective use in the implementation of its statutory activities.

In order to effectively conduct statutory activities, agricultural enterprises need timely identification of problems with financial stability and solvency in order to mitigate their negative impact on the activities of the enterprise and promptly eliminate all possible risks that have a negative impact on its solvency and financial stability. (Table 1).

**Table 1.**

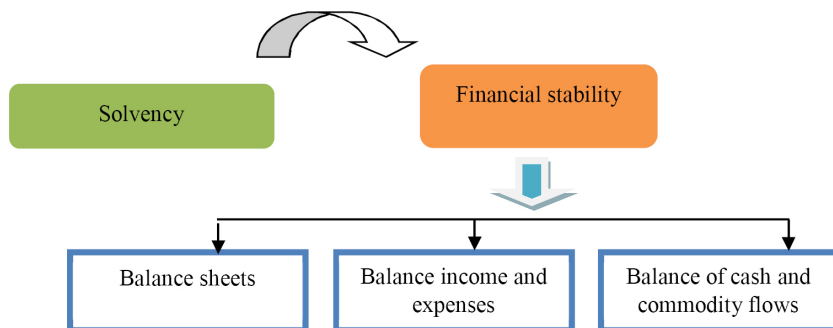
**Risks that have a negative impact on the financial stability and solvency of agricultural businesses\***

Probability of the effect	Degree of influence on financial stability		
	Low	Average	High
Low	Reduced profitability means loss of reputation	Reduction in sales volumes is a breach of contract	Reduction of qualified personnel, production, profits – high competition
Average	Reduction of profits – inflationary processes	Additional costs – changes in legislation, competitors, inflation	Loss of purchasing power of counterparties – decrease in demand for products
High	Financial losses – new technologies, force majeure circumstances	Reduction of production – use of outdated equipment	Exchange rate fluctuations, rising accounts receivable, loss of liquidity

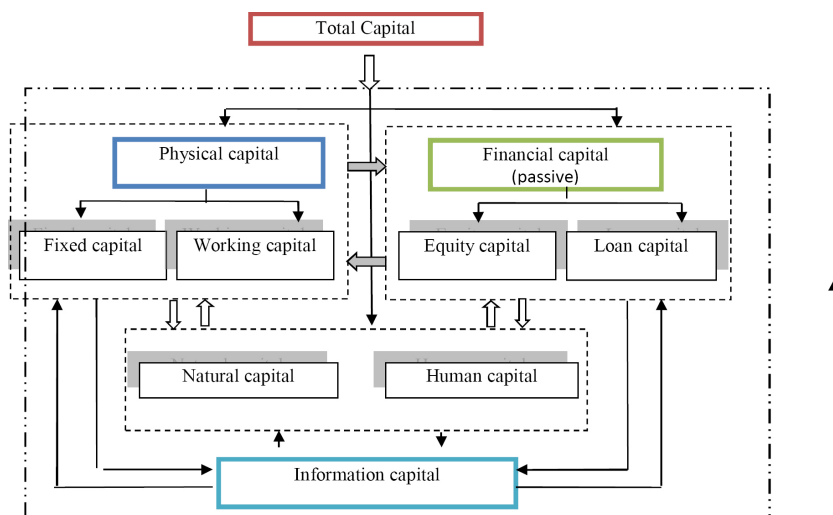
\*compiled by the authors

As a result of many years of research, scientists have proven that there is a close relationship between the definitions of “financial stability” and “solvency” (Fig. 1).

Any economic entity that separately carries out its statutory activities has a total capital, which is a combination of physical, financial, human, informational and natural capital in their interrelationship and interdependence (Fig. 2).



**Fig. 1.** The relationship between financial stability and solvency



**Fig. 2.** The relationship of the components of the total capital.

At the same time, the ratio of physical and financial capital in the structure of total capital is of primary importance for studying financial stability and solvency; therefore, agricultural enterprises need to clearly understand how to manage this ratio to obtain the maximum economic effect [5].

When implementing the statutory activities of agricultural business enterprises, each component of their total capital performs a specific function and influences the level of their solvency and financial stability [6] and their relationship, which certainly requires further scientific research.

### Purpose

The purpose of this study is to examine the impact of total capital on the financial stability and solvency of agricultural enterprises.

### Materials and methods

The study was based on the following methods of knowledge: static, dialectical, logical, comparative, and also used the methods of modeling, formalization, synthesis, induction, deduction, analysis, grouping, observation, absolute, relative, average values.

The empirical basis of the study was the main forms of accounting statements of agricultural businesses operating in the southern regions of the Rostov region, as well as official statistics.

The scientific and methodological basis of the study was the legislatively enshrined principles of drawing up accounting and statistical reports, methods of analyzing financial stability and solvency, articles of domestic and foreign accounting in scientific publications, materials of scientific and practical conferences, monographs.

*Table 2.*

**The system of indicators of financial stability and solvency of agricultural enterprises used in the study\***

Indicators	Components	
	numerator	denominator
Indicators of financial stability		
Financial autonomy	Equity capital	Balance sheet total
Covering debts with equity capital		Loan capital
Financial dependency	Loan capital	Balance currency
Current debt ratio	Short-term financial liabilities	
Financial leverage	Loan capital	Equity capital
Indicators of solvency		
Overall solvency	Assets	Loan capital
Solvency for current liabilities	Liabilities	Average monthly revenue

\*compiled by authors

The methodology for calculating financial stability and solvency in domestic practice does not differ from foreign analogues. At the same time, a large number of various analytical indicators used to analyze the efficiency

of economic entities [7] have a negative impact on the quality of their analytical work and consequently on the development of management decisions aimed at improving the efficiency of the economic entity [8]. Therefore, a sample of optimal indicators of solvency and financial stability was conducted (Table 2).

Increasing financial stability and solvency means strengthening the financial position of an agricultural enterprise.

## Results

Optimal interaction of the components of the total capital ensures effective management of an agricultural enterprise in modern business conditions and has a direct impact on its financial stability and solvency.

The study of the definition of “capital” and its components has been going on for more than six centuries, but it is so complex and multifaceted that today there is an ongoing discussion about its conceptual apparatus and the degree of its influence on the efficiency of enterprises [9; 10]. It should be noted that even today the correlation of the enterprise capital with its financial component is not appreciated at its true value. Despite certain differences in the interpretation of total capital and its components, all researchers associate them with some resources capable of generating income.

The composition and structure of the total capital of agribusiness enterprises, as well as the relationship of its constituent components, affect the financial stability and solvency of economic entities [12; 13].

*Table 3.*

**Criteria for selecting enterprises for the study [14]**

Criterion	Agrarian formations of the Rostov region				
	1	2	3	4	5
Administrative unit of the Rostov region	Zernograd	Salsk	Kagalnik	Egorlyk	Kagalnik
Organizational and legal form	Joint-stock company	Limited Liability Company	Limited Liability Company	Limited Liability Company	Agricultural production cooperative
Size of an enterprise	Large	Medium	Large	Medium	Large
Size of production	Growing	Decreasing	Growing	Growing	Decreasing
Specialization	Crop production	Crop production	Crop production	Crop production	Crop production

The analysis of the impact of total capital on solvency and financial stability was carried out on the basis of data from the accounting statements of agricultural business enterprises located in the southern regions of the Rostov region. The criteria for selecting enterprises selected for the research work are presented in Table 3.

Processing of statistical and accounting (financial) reporting data within the framework of existing accounting and analytical systems of each enterprise under study made it possible to create a database for further analysis of financial stability and solvency (Table 4).

Table 4.

**Database for analyzing the impact of total capital on the financial stability and solvency of agricultural enterprises\***

Indicator	Year	Agrarian enterprises of the Rostov region				
		1	2	3	4	5
Total capital, thousand rubles.	2021	510233	271630	1504709	2204790	1996949
	2022	630760	348486	1839612	2077315	2270383
	2023	690126	884981	1966062	2529470	2341551
Fixed capital, thousand rubles.	2021	248784	132410	596147	1204190	751089
	2022	268669	122388	893896	1263650	897723
	2023	280389	639492	1011600	1419500	904681
Working capital, thousand rubles.	2021	261449	139220	908562	1000600	1245860
	2022	362091	226098	945716	813665	1372660
	2023	409737	245489	954462	1109970	1436870
Own capital, thousand rubles.	2021	374089	43535	968522	1641380	1917720
	2022	531534	86128	1123280	1970530	2200130
	2023	577415	65605	1364520	2370720	2259440
Loan capital, thousand rubles.	2021	75631	228095	536188	563411	79226
	2022	59035	262358	716330	106780	70253
	2023	83745	828376	601540	109651	82113
Share of fixed capital / working capital in the structure of total capital, %	2021	48.8/51.2	48.7/51.3	39.6/60.4	54.6/45.4	37.6/62.4
	2022	42.6/57.4	35.1/64.9	48.6/51.4	60.8/39.2	39.5/60.5
	2023	40.6/59.4	72.3/27.7	51.5/48.5	56.1/43.9	38.6/61.4
The share of own / loan capital in the structure of total capital, %	2021	73.3/26.7	16.0/87.0	64.4/35.6	74.4/25.6	96.0/4.0
	2022	84.3/15.7	24.7/75.3	61.1/38.9	94.9/5.1	96.9/3.1
	2023	83.7/16.3	7.4/92.6	69.4/30.6	93.7/6.3	96.5/3.5
Profit, thousand rubles.	2021	78903	-19071	391635	151792	180767
	2022	175890	122593	363153	330370	165580
	2023	90873	-7105	614657	402150	68966

\* compiled by the authors based on the accounting and financial statements of the enterprises selected for the study

The analysis of the data presented in Table 4 showed some changes occurred in the structure of the total capital during the study period.

So, the current assets occupied a larger share in the structure of physical capital in 2021 and 2022 at all enterprises except 4 of them. In 2023, several enterprises – 2 and 3 – radically changed the structure of physical capital in the composition of total capital in favor of the predominance of non-current assets in it.

In the structure of financial capital, its own sources of financing occupy the largest share at enterprises 1, 3, 4, 5 during the study period, while enterprise 2 carrying out its activities at the expense of loan sources. Moreover, it was Company 2 in 2021 and 2023 according to the results of the activity that received a loss.

Further analysis was carried out by analytical methods using determined factor models of financial stability and solvency indicators (Table 2). The results of the analysis are presented in Table 5.

Analysis of Table 5 allows us to draw a number of the following conclusions:

1. All enterprises (1, 3, 4, 5), where the main share in financial capital belongs to equity capital, are more financially stable than those that carry out statutory activities at the expense of borrowed sources of financing
2. The share of debt coverage of the enterprises under study depends to a greater extent on the size of its financial capital in the structure of total capital. Thus, the greater share occupies its own capital in the total capital, the greater the likelihood of timely covering of debt obligations to counterparties.
3. The probability of repaying current debt is higher for those enterprises in which borrowed capital accounts for the largest share of total capital.
4. The lowest level of general solvency is observed at Enterprise 2 that owns a large share of loan capital.

Summarizing the results of the conducted study, we note that the level of solvency and financial stability of agricultural business enterprises is influenced mainly by the ratio of the components of financial capital in the composition of total capital, while the composition and structure of their physical capital has an indirect effect on the studied indicators.

Therefore, in order to maximize the indicators of solvency and financial stability, enterprises carrying out statutory activities in the sphere of agricultural business need to find reserves for the growth of financial capital and optimize its structure.

Table 5.

**Financial stability and solvency of agricultural enterprises with the existing composition and structure of their total capital\***

Indicator	Year	Agrarian enterprises of the Rostov region				
		1	2	3	4	5
Indicators of financial stability						
Financial autonomy	2021	0.75	0.16	0.64	0.74	0.96
	2022	0.84	0.25	0.61	0.95	0.97
	2023	0.84	0.07	0.69	0.94	0.96
Financial dependency	2021	0.15	0.84	0.36	0.26	0.04
	2022	0.16	0.75	0.39	0.05	0.03
	2023	0.16	0.934	0.31	0.06	0.04
Current debt ratio	2021	0.12	0.30	0.13	0.26	0.04
	2022	0.13	1.60	0.07	0.05	0.03
	2023	0.19	0.73	0.13	0.04	0.04
Covering debts with equity capital	2021	4.95	0.19	1.81	2.91	24.21
	2022	9.00	0.33	1.57	18.45	31.32
	2023	6.89	0.08	2.27	21.62	27.52
Financial leverage	2021	0.20	5.24	0.55	0.34	0.04
	2022	0.11	3.05	0.64	0.05	0.03
	2023	0.15	12.63	0.44	0.05	0.04
Indicators of solvency						
Overall solvency	2021	6.75	1.19	2.81	3.91	25.21
	2022	10.68	1.33	2.57	19.45	32.32
	2023	8.24	1.07	3.27	23.07	28.52
Solvency for current liabilities	2021	0.15	0.67	0.72	2.12	0.09
	2022	0.12	0.87	0.68	0.18	0.07
	2023	0.15	2.02	0.55	0.11	0.09

\*compiled by authors on the basis of accounting financial reporting of enterprises selected for research

The results of the conducted study showed that the most important reserve for the growth of financial capital as part of the total capital for agricultural enterprises is the growth of their profits, mainly due to compliance with the timing of agrotechnical measures in accordance with technological maps, seeding rates of agricultural crops, the use of scientifically based crop rotations and the latest methods of land cultivation [15].

In the course of the study, there have been calculated the reserves of growth in the amount of profit of agrarian enterprises presented in Table 6.

Table 6.

**Profit growth reserves for pilot enterprises in 2023, thousand rubles [14]**

Reserve for increasing in the amount of profit	Agrarian formations of the Rostov region				
	1	2	3	4	5
By increasing in the volume of product sales	+21547.1	+24773.4	+19812.5	+8622.0	+29894.2
By reducing the cost of production	+645.2	+22.5	+542.1	+48.6	+896.9
Total	+22192.3	+24795.9	+20354.6	+8670.6	+30791.1

According to Table 6, all enterprises under study have a reserve of increase in the amount of profit. Therefore, they can increase their financial stability and solvency (Table 7).

Table 7.

**Reserves for increasing the Financial stability and solvency of agricultural enterprises under study, % \***

Factor	Value	Agrarian formations of the Rostov region				
		1	2	3	4	5
Indicators of financial stability						
Financial autonomy	actual	0.84	0.07	0.69	0.94	0.96
	including reserves	0.84	0.10	0.70	0.94	0.97
Financial depen- dency	actual	0.16	0.93	0.31	0.06	0.04
	including reserves	0.16	0.90	0.30	0.06	0.03
Current debt ratio	actual	0.19	0.73	0.13	0.04	0.04
	including reserves	0.18	0.71	0.13	0.04	0.03
Covering debts with equity capital	actual	6.89	0.08	2.27	21.62	27.52
	including reserves	7.16	0.11	2.30	21.70	27.89
Financial leverage	actual	0.15	12.63	0.44	0.05	0.03
	including reserves	0.14	9.16	0.43	0.05	0.04
Indicators of solvency						
Overall solvency	actual	8.24	1.07	3.27	23.07	28.52
	including reserves	8.51	1.10	3.30	23.15	28.89

\* compiled by the authors based on the conducted research

The conducted research allowed us to identify the main problems that have a negative impact on the composition of the total capital of agricultural formations and their structure, which in turn affected the level of their financial stability and solvency.

### **Conclusion**

Different forms of ownership and sizes of the enterprises under study do not have a significant impact on the composition and structure of their total capital. This fact has a negative impact on the level of their financial stability and solvency, which suggests the need to develop measures to optimize the composition and structure of the capital of enterprises, taking into account the conditions for implementing their statutory activities [16].

To optimize the composition and structure of the total capital of agrarian enterprises, one should:

1. Form a planning system in stages: to draw up the enterprise's budget, to develop a system of indicators of the efficiency of the enterprise, depending on the goals of the latter, to carry out financial planning, to develop a marketing strategy aimed at increasing the competitiveness of enterprises operating in the field of agribusiness [17], to organize the financial management service, to carry out various situations and conduct a scenario analysis.
2. Optimize the composition and structure of total capital, paying special attention to financial capital, namely the ratio of own and borrowed sources of financing.
3. Achieve an increase in crop yields: use alternative methods of soil cultivation, develop and use optimal crop rotations, draw up technological maps of agrotechnical measures and strictly adhere to them, which will subsequently allow agricultural businesses to increase profits.
4. Develop and use a profit distribution mechanism that will allow agricultural formations to optimize the ratio of their own and foreign sources of financing, thereby improving the structure of financial capital, as well as improve the structure of physical capital by acquiring both current and non-current assets.

The proposed enterprises will allow agricultural enterprises to receive additional profits, adjust the composition and structure of total capital, improve solvency and financial stability.

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