Modern methodology and methods of capital structure analysis of agricultural enterprises

Oksana Butkova¹ and Vladimir Kravchenko²

¹Azov-Black Sea Engineering Institute, Don State Agrarian University, Lenina str, 21, Zernograd, 347740, Russia
²Don State Technical University, Gagarin sq., 1, Rostov-on-Don, 344003, Russia

E-mail: butkova_ov@inbox.ru

Abstract. The widespread emergence of crisis phenomena both in the economic and political spheres creates the need for agrarian formations to study modern methodologies and methods of their capital structure analysis. The economic literature is characteristic of the divergence of views among scientists on the directions, goals and objectives of the capital structure analysis of an enterprise. And the quality of analytical work is negatively affected by the presence of a large number of analytical indicators and coefficients. The article examines the modern methodology and methods of capital structure analysis of agricultural enterprises, as any economic entity rotating in the modern economic space must have a certain capital and use it as efficiently as possible for successful activities in economic crisis conditions. Through research, we have used the following methods: analysis, synthesis, concretization and abstraction, classification, grouping and others. As a result of the carried study, there have been identified the main problems faced by enterprises when it comes to capital structure analysis, studied the relationship between the types of capital being subject to analytical research, clarified methodological approaches to the capital structure analysis of agricultural enterprises, generalized the system of methods of capital structure analysis, developed a model of methods of capital structure analysis of agricultural enterprises.

1. Introduction

In modern economic conditions, characterized by a high level of instability as a result of the introduction of temporary restrictions related to the preventive measures to stop the spread of coronavirus infection, most agro-industrial enterprises find it rather acute to look for funding sources for the implementation of their statutory activities.

The economic uncertainty of modern economic conditions requires agricultural enterprises should increase the efficiency of their activities, while managers at all levels should ensure greater ownership of the results of economic activities of enterprises for which they are responsible for. It is the adoption of effective management decisions today requires the management of agricultural enterprises should be aware of sources an economic entity intends to use to carry out its statutory activities [1]. At the same time, the management of enterprises must remember that the financial condition of a business entity depends on the transformation of capital into non-current and circulating assets, as well as on the capital structure [2].
Ill-considered and extremely unsuccessful economic reforms in the agricultural sector, an increase in the tax burden on taxpayers, the lockdown of 2020 aggravated the situation of agricultural enterprises, that’s why the agro-industrial complex practically lost the financial ability to effectively carry out its statutory activities. In such conditions, most agricultural enterprises are forced to solve current problems in order to survive instead of growing and developing, therefore, the management staff of enterprises should pay special attention to activating the internal reserves of agricultural enterprises to increase the efficiency of their activities in order to neutralize negative factors that affect their financial stability and solvency [3].

2. Research methodology (methods)

Through research, we have used the following methods of scientific knowledge: statistical, dynamic, comparative, logical, functional, inductive and deductive, as well as specific research methods: analysis and synthesis, modeling, concretization and abstraction, classification, grouping, and others.

An analysis of the works of prominent scientists who made a significant contribution to solving the problem of capital structure analysis of an enterprise allowed us to conclude that the method of capital structure analysis in the context of an effective management system for agricultural enterprises, increasing their financial stability and solvency requires further scientific developments based on a systematic approach, taking into account the specifics of agricultural production [4].

3. Research results

A critical analysis of the existing methods of capital structure analysis of an enterprise made it possible to draw the following conclusions:

1. capital structure analysis of an enterprise is usually considered as a component of the analysis of financial condition for its further adjustments;
2. there are many scientific opinions on the purpose and objectives of the capital of the enterprise in general as well as its components;
3. a large number of a wide variety of techniques, methods and analytical indicators of capital structure analysis, proposed by scientists over the years of research, has a negative impact on the quality of analytical work and consequently on the development of management decisions aimed at improving the efficiency of an economic entity;
4. the study of analytical techniques is carried out without taking into account the characteristics of the practical activities of agricultural enterprises in economic crisis conditions.

To increase the efficiency of the implementation of the statutory activities of agro-industrial enterprises, one should develop a modern methodology and methods of their capital structure analysis with clearly defined goals and objectives of analysis, procedures, directions and system.

The quality of the management of financial resources determines the performance of an agricultural enterprise, and is based on the systematic solution of economic problems of various levels of complexity, including optimization of the capital structure of an enterprise, since the latter has a direct impact on the financial stability and solvency of an agricultural enterprise. In that regard, the study of the methodology and the method of capital structure formation and functioning of agro-industrial enterprises is of particular relevance.

Capital is an economic resource that is used for a long time, and is a single system consisting of several different types of capital. (Fig. 1).
We propose to give a brief description of the capital components presented in Figure 1.

Fixed capital is a certain total value being at an owner’s disposal and directed by him to obtain economic benefits and to satisfy his economic interests [5].

Circulating capital presents the difference between current assets and short-term liabilities of an enterprise, that is, it means the amount of funds owned by the enterprise in current assets.

Equity capital is the total value of the assets of the enterprise net of liabilities, formed as a result of using both fixed and working capital [6].

Loan capital is part of the financial resources of an enterprise invested in its assets.

Human capital is a characteristic of the enterprise staff: the general stock of health, knowledge, skills, abilities, motivations being used in the production process to increase its efficiency [7,8].

Natural capital is the total number of plant and animal species, products of their vital activity, minerals and other natural resources that affect the performance of economic entities [9,10,11].

Information capital is a range of information expressed in databases, information systems and technologies [12] and is of a certain value for an agricultural enterprise.

Fictitious capital is considered to be the transformation of debt obligations into an object of contractual relations, depending on the amount of the expected revenue, the rate of inflation and the rate of interest.

On the whole, all types of capital being at the disposal of an agricultural enterprise and able to bring it profit are necessary for the fulfillment of its statutory activities.

Capital structure analysis, being the most important component of its accounting and analytical system, is the process of studying the sources of capital formation at agricultural enterprises, generating a system of analytical indicators, and developing, based on the results of the calculations, management decisions aimed at improving the efficiency of the enterprise [13].

Capital structure analysis of agricultural enterprises allows us to determine:

- endowment of all types of capital for an agricultural enterprise to perform its statutory activities;
- appeal of each specific agricultural enterprise for potential investors;
- efficiency of using different types of capital;
- substantiation of the optimal ratio of all capital components;
- directions of movement of different types of capital in the economic activity of the agricultural enterprise;
- amount of creditors’ funds as buffer and coverage of liabilities for them.

To this end, the analysis of capital is one of the most important directions in the system of comprehensive economic analysis, since the composition and structure of capital have a decisive influence on the financial stability of an agricultural enterprise and the ability to assess its activities as a whole.

Through research, fundamental scientific works and methods of complex economic analysis were studied and analyzed in terms of the analysis of various types of capital of an economic entity. The study resulted in a generalization of methodological approaches to the capital structure analysis of agricultural enterprises (Fig. 2).

The methodological approaches presented in Figure 2 provide for the implementation of a set of procedures that provide analytical information about the formation and use of capital of agricultural enterprises.

The first procedure involves the definition of the goal and objectives of the capital structure analysis of agricultural enterprises. Through research, there has been revealed that the main purpose of the capital structure analysis of an agro-industrial complex is a systematic study of formation and use of the enterprise’s capital as a whole and by its components for making balanced anti-crisis management decisions aimed at improving the efficiency of agricultural enterprises in modern economic conditions characterized by a long-term economic crisis. And the main task of capital structure analysis is to find reserves for increasing the efficiency of capital use to ensure the financial security of agricultural enterprises.

Depending on goals, when analyzing the capital one should form a system of analytical indicators, including those ones characterizing the process of forming and using the capital of agricultural enterprises in terms of achieving their tactical and strategic goals.

The second procedure of the methodological approach provides for the definition of techniques and methods of capital structure analysis of agricultural enterprises as a whole and by its individual components. The system of methods used in the capital structure analysis of agricultural enterprises is presented in Table 1.
Fig. 2. Methodological approaches towards the capital structure analysis of agricultural enterprises

The determination of the technique and method of capital structure analysis is as a rule carried out based on the accessibility and availability of information of an enterprise required for each type of analysis. After choosing the techniques and methods of capital structure analysis, one can proceed to form a system of analytical indicators [14].

The next procedure of the methodological approach consists in the formation of a system of analytical indicators [15] of each capital component of agricultural enterprises subject to analytical research, as the object of analysis can be considered both the entire capital of an agricultural enterprise as a whole and its individual components. Therefore, there arises a need to use the fourth procedure of the methodological approach – the generalization of the systems of analytical indicators of each capital component into a single system for analyzing the capital structure of agricultural enterprises as a whole.

Table 1. System of methods of capital structure analysis of agricultural enterprises

| Research methods                     | Methods of analysis                                      |
|--------------------------------------|----------------------------------------------------------|
| General scientific methods           | Induction, deduction, synthesis, analogy, detailing,    |
|                                      | concretization, systematization                           |
| Elementary methods of                | Balance method; method of chain substitutions,          |
| microeconomic analysis               | method of relative and absolute differences; differential |
|                                      | method; integral method; logarithmic                     |
When performing the third and fourth procedures of the methodological approach towards the capital structure analysis, it should take into account that the formation of any system of analytical indicators should meet the goals and objectives of the capital structure analysis of the enterprise. Each specific situation may require an individual system of analytical indicators.

The fifth procedure of the methodological approach provides for the selection of the information base necessary for the capital structure analysis or its components in accordance with the selected techniques and methods of analysis. The main sources of information for analyzing the capital structure of an agricultural enterprise are accounting and statistical records, as well as primary, analytical and consolidated accounting data (Tabl. 2).

After collecting the information necessary for the analysis, one should proceed to the following procedure of the methodological approach towards the capital structure analysis of agricultural enterprises – the calculation of analytical indicators in accordance with the formed analytical systems for analyzing the capital structure of agricultural enterprises. Having considered a set of analytical indicators within the framework of their developed systems for each type of capital of agricultural formation, it is necessary to consider all possible options for interpreting their values.

The last stage of the capital structure analysis of the enterprise or its components critically reconsiders its results and carries out adequate management decisions aimed at improving the financial stability of agricultural enterprises by increasing the efficiency of using their capital structure as a whole and its individual components [16].

| Type of information | Sources of information |
|---------------------|-----------------------|
| internal            | external              |
| legal               | federal and regional laws, Presidential decrees, Government resolutions, orders of the Ministry of Finance and local authorities |
| accounting          | Counterparty reporting |
| other               | financial and economic information about the domestic and foreign economic policy of |

Table 2. Information base for the analysis of the capital of an agricultural enterprise
implemented business plans, and so on

| implemented business plans, and so on | the state, foreign exchange rates, the amount of the refinancing rate of the Central Bank of the Russian Federation, the investment climate, expert assessments, and so on |

The evaluation of the results obtained during the analysis is usually carried out using ratings or ranking on scales. To get this type of information, you need to develop a data collection plan and tools, and then display them on graphs or diagrams. In order for such information to make sense, you should set criteria or intervals of performance criteria.

The only real drawback of the systems of analytical indicators of the components of capital is their initial complexity and difficulty for interpretation.

According to the developed methods of capital structure analysis of agricultural enterprises, we are going to form a conceptual model of the methodology for analyzing the capital structure of an agricultural enterprise. The main constituent elements of the model are the object, goal, objectives, research methods and techniques and the system of indicators (Fig. 3).

![A model of the method of capital structure analysis of an agricultural enterprise](image)

- Object
  - The capital and its components of the agricultural enterprise
  - Search for reserves to increase the efficiency of using capital and its components for the development of management decisions aimed at ensuring the financial security of agricultural enterprises

- Goal
  - analysis of the capital flow and its components;
  - assessment of the capital flow and intensive capital re-equipment and its components;
  - assessment of the efficiency of using capital and its components;
  - assessment of the influence of factors on the efficient capital use and its components;
  - calculation of reserves for increasing the efficiency of capital use and its components.

- Objectives
  - Absolute and relative values, mean values, vertical, horizontal, comparative, trend analysis, methods of financial ratios, factor analysis and so on.

- Methods
  - The capital value and its components, their structure, indicators of capital flow, the ratio of the capital components, equity ratios, financial dependence, capital inflows, capital retirement, turnover, profitability, and so on.

Fig. 3. Model of the method of capital structure analysis of agricultural enterprises

Thus, the conducted research allowed us to form a model of the methodology for analyzing the capital of agricultural organizations, which includes the following procedures: determining the object
of analysis, goals, tasks and methods of analyzing capital as a whole and each of its components, and forming a system of analytical indicators.

4. Conclusions

The refined methodology and model of the method of capital structure analysis of an agricultural enterprise allow:

1. effectively organize the analytical process of the efficient capital use and its components at agricultural enterprises;
2. to ensure the optimal formation and further use of capital and its components, stabilization of the agricultural output.
3. make substantiated management decisions based on factor models of various indicators of the efficient capital use and its components to improve the financial stability of agricultural enterprises.

At the same time, the study of the specific characteristics of agricultural enterprises, the identification of external, internal and specific factors, when analysing capital structure and its components of the agricultural enterprises, will allow their management staff to form a reliable information base for making effective management decisions aimed at promptly eliminating threats to financial stability.

The development of science, information technologies and the ongoing integration processes in the accounting and analytical systems of agricultural enterprises do not allow to put an end to the research of the methodology and method of capital structure analysis and its components. Further developments are being carried out in the direction of the methodological foundations for analysing the capital components that are new for Russian science: social, intellectual, information and natural capital, as well as developing anti-crisis programs that take into account various scenarios of the development of economic and political conditions of management. Further research will allow agrarian formations to successfully carry out their activities even in crisis conditions of management.

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