Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 24, Issue 2, 2024
PRINT ISSN 2284-7995, E-ISSN 2285-3952

FINANCIAL PROFITABILITY OF AGRICULTURE IN BULGARIA

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Abstract

Efficiency in agricultural business activity is directly related to the high financial results. The main approaches to business evaluation are related to the investment in production capital and the return on the investments made. The object of research in this article is the profitability of equity capital in the Agriculture sector in Bulgaria. Known in economic literature as Financial profitability, it is an important indicator for both owners and future investors, as it shows the profitability of capital invested in production. The main goal of this article is to make a comparative analysis and assessment of the direct factors that have an impact on the profitability of equity capital in agriculture. Based on the collected statistical information, the method of the financial profitability calculation was selected, through the influence of changes in the equity load factor and revenue profitability. The conclusion is related to finding a causal relationship between the components of financial profitability, which is the basis for specific recommendations and opportunities to increase its level.

Key words**:** *profitability, equity capital, factor analysis, Bulgaria*

INTRODUCTION

The industrial sector is of great importance for the development of a country. Countries with stable industries have seen accelerated economic growth, improved national income, and increased living standards of citizens.
Due to its low economic indicators compared to the countries of the European Union, the industry in Bulgaria is a top priority.
The agro-industry is one of the most important branches of the economy, as it includes the cultivation of plants and animals, which are the basis for the production of food products necessary for feeding the population,
The production of biofuels, fibers, medicines and others are necessary for the normal course of human life. This industry also makes it possible to increase the population density in individual areas.
During this century, a huge number of scientists and inventors contributed to the development of human civilization [5][3]. Agriculture is dependent on climatic conditions. With the development of this industry, the use of artificial fertilizers, pesticides, plant selection becomes necessary. The genetic modification of some crops leads both to an increase in the yields of the cultivated plants and to a number of ecological problems related to the health of people and the environment.
Agriculture is a branch of strategic importance, as the production provides food for the population, supports biodiversity, creates raw materials for many other branches and sectors of the national economy. Regional integration applies under certain conditions imposed by the object to the subject [4][10].
The production of agricultural products is used for different purposes. Production of cereals, vegetables, fruits and meat serve as food for the population. Other products like cotton, wool, hemp, silk are used for clothing. A third group of products is related to the cultivation of plant species from which biofuels are produced, such as methane, ethanol, biodiesel. There are also some of the products produced in agriculture that are used for decorative purposes such as flowers, exotic fish and pet birds.
Everything said so far leads to the conclusion that the technical progress of the agro-industry plays a key role and is a decisive factor in the development of humanity and social changes in the world.
According to National Statistical Institute, NSI, data, the gross added value created by

the branches of the national economy in 2022 amounts to 76,266 million euro at current prices and marks a real growth of 5.3% compared to the previous year. In the Agricultural sector, it amounts to 4.3% of the total in the country and marks a decrease of 0.7% compared to the previous year [12].

In 2022, the agrarian trade of Bulgaria will show a growth of 42.8% on an annual basis, which in terms of value amounts to 14938.8 million euros. This is largely due to the unusually high inflation on a global scale, which also affected the agricultural sector. The export of agricultural goods during the year amounted to 8,269.9 million euro, which is 36.9% above the level of 2021. Even more serious is the increase in imports by 50.9% compared to the previous year. The traditionally positive balance in Bulgaria's agricultural trade shrank by 1.3% on an annual basis, to 1,601 million euro [7].

The aim of the Agricultural Policy introduced by the European Union is to help farmers cope with new challenges and to respond to the changing attitudes and expectations of people, this way they will increase food quality and biodiversity and rural development. In the end, the main goal is to have high-quality products delivered to the market and also profit for the producers in rural areas [8].

According to the "Classification of economic activities" in the branch Agriculture with its two main directions "Crop growing" and "Livestock breeding" is located in sector A "Agriculture, forestry and fisheries and economy" [11].

Capital is most often associated with the monetary expression of the value of invested assets. It is a set of resources owned by the entrepreneur, through which the relevant products or services will be produced.

At the start of the activity of any production, initial capital is needed, through which assets necessary for the normal functioning of the respective company are purchased. A large part of this capital is occupied by equity capital. This is money that can grow or have so-called added value. Equity is one of the most important economic indicators, as it helps investors assess the financial stability of a company.

The equity capital is that invested by the founders and partners in the creation of the business organization. It can be increased later. Equity represents the value of a company's assets after all debts and liabilities have been paid. However, high equity may indicate that the company is not using debt effectively to maximize its profit [2].

The accounting reporting of equity capital is organized through the system of accounting accounts, which are provided for in the Model National Chart of Accounts, which each enterprise individualizes for its accounting needs. The purpose of their use is to provide the most accurate and reliable accounting reporting of the economic operations of the equity capital as a whole [6].

In relation to the National Accounting Standard, equity capital together with (provisions), long-term, short-term liabilities and financing are the main items in the accounting balance sheet and are found in the Liabilities section of the balance sheet. In turn, the company's own capital is formed by three elements: fixed capital, reserves and financial result [9].

The goal of every single entrepreneur is to produce goods and services that, through their realization on the market, satisfy the needs of consumers and thereby make a profit.

The profitability of the business must first of all be profitable, i.e. shows the rate of return on capital invested in the enterprise. It is determined by indicators characterizing the company's ability to generate profit. Profitability indicators are the relationship between the achieved financial result and the working capital [1]. The human capital is very important as a resource for agriculture especially in the rural areas.

For the purposes of this paper, we will use return on equity, also known as Financial profitability. The indicator calculated on the basis of the equity capital shows how many BGN revenues were obtained from one or one hundred BGN equity capital. It characterizes the effectiveness of the management from the point of view of the shareholders of the enterprise and expresses in a pure form the interests of the owners. Therefore, it is often seen as a key investment indicator. It

characterizes the profitability of the enterprise from all types of activities in the enterprise.

MATERIALS AND METHODS

The calculation of the return on equity is based on aggregated statistical information from the financial and accounting reports of agricultural companies. This sample represents 7% stratified information of the companies employed in the agricultural sector in Bulgaria. For greater detail, an individual comparative analysis of the two main directions in the agrarian sector, namely "Crop breeding" and "Livestock breeding", was made. The data used are for a period of 5 years from 2017 to 2021 respectively.

When calculating Return on equity or Financial profitability, we could use the ratio of net profit (after tax due) over the value of equity.

Return on equity is calculated using the formula [14]:

$$\text{Roe} = \frac{\text{NP}}{\text{E}} . 100 , \quad \text{.....(1)}$$

where:

Roe – Return On Equity;

NP – Net Profit;

E – Equity.

For a greater depth of analysis, it is necessary to calculate the Equity Load Coefficient, the profitability of the income as well as its change [13]. The equity load factor C_{EL} is calculated according to the formula:

$$C_{EL} = \frac{\text{TR}}{\text{E}} . 100 , \quad \text{.....(2)}$$

where:

C_{EL} – Coefficient of equity load;

TR - Total Revenue;

E – Equity.

Return on a revenue basis (Ror) is calculated according to the formula:

$$\text{Ror} = \frac{\text{NP}}{\text{TR}} . 100 , \quad \text{.....(3)}$$

where:

Ror - Return on Revenue;

NP – Net Profit;

TR - Total Revenue.

Return on Equity is influenced by 2 factors:

(a)The influence of changes in the Equity Load Coefficient

I_{CEL} is calculated by the formula:

$$I_{CEL} = \Delta C_{EL} . \text{Ror}_{(0)} \quad \text{.....(4)}$$

where:

ΔC_{EL} – The change in the Equity Load Coefficient;

$\text{Ror}_{(0)}$ – Return of previous year's revenue

(b)The influence on the changes in Return based on revenue (Ror) is calculated according to the formula:

$$I_{ROR} = \Delta\text{Ror} . C_{EL_{(1)}} \quad \text{.....(5)}$$

where:

ΔRor– changes in Return based on revenue;

$C_{EL_{(1)}}$ – Coefficient of equity load for current year.

In the analysis of the financial profitability of the enterprises in the agricultural industry, it is necessary to make a structural (vertical) analysis of the liabilities of the balance sheet. The ratios between the main elements of the capital will make it possible to reveal what share each indicator occupies in the total liability, which is a prerequisite for a full assessment and analysis of the financial condition of the industry.

RESULTS AND DISCUSSIONS

We can see from the data in Table 1, that there are values of a wide range for the Return on Equity in the Plant Breeding sector. They are in the range of 10.13% to 22.83% for the period 2017 – 2021. Also, it could be mentioned that in the first two periods we can see negative values in the Return on Equity, which is totally different if we compare the results with the end of the analysed period, where the values are positive and reach their highest levels of 11.54 percentage points, which means that for every BGN 100 of equity, the balance sheet profit increased by BGN 11.54.

This increase is due to the influence of two factors:

- as a result of the increase in the Equity Load Coefficient, the Return on Equity increased by 0.66 points.
- as a result of the increase in the Return of revenues, the Return of Equity increased by 10.88 points. The change in the Return on equity in the Plant production industry at the end of the examined period (2021) compared to the beginning (2017) marked an increase of 9.24%. This increase was driven by both a decrease in influence to the Equity Load by 0.76 points and an increase in influence of the Return on Revenues by 10.00%.

Table 1. Return on equity in the Plant production sector for the period 2017 – 2021

Plant production	**Value (thousands BGN)**					
	2017	2018	2019	2020	2021	2021/ 2017
Net (Balance) Profit	124,176	118,331	104,209	122,766	295,415	
Equity	913,985	973,461	1,028,474	1,087,079	1,293,951	
Return on Equity	13.59	12.16	10.13	11.29	22.83	
Absolute change compared to previous year		-1.43	-2.02	1.16	11.54	9.24
Total Revenue	895,666	901,036	919,771	949,983	1,196,802	
Return of revenues	13.86	13.13	11.33	12.92	24.68	
Absolute change compared to previous year		-0.73	-1.80	1.59	11.76	10.82
Equity Load Coefficient	0.98	0.93	0.89	0.87	0.92	
Absolute change compared to previous year		-0.05	-0.03	-0.02	0.05	-0.06
Influence of Equity Load Coefficient		-0.75	-0.41	-0.23	0.66	-0.76
Influence of Return based on revenue		-0.68	-1.61	1.39	10.88	10.00

Source: [12].

Regarding the Return on equity in the Livestock sector, we can see according to Table 2 that there are higher values at the beginning of the period. In the year 2021, there is a decrease of 7% compared to the start of the period.

Table 2. Return on equity in the Livestock sector for the period 2017-2021

Animal production	**Value (thousands BGN)**					
	2017	2018	2019	2020	2021	2021/ 2017
Net (Balance) Profit	40,629	29,558	34,399	31,156	29,230	
Equity	232,241	247,052	250,221	271,368	275,002	
Return on Equity	17.49	11.96	13.75	11.48	10.63	
Absolute change compared to previous year		-5.53	1.78	-2.27	-0.85	-6.87
Total Revenue	349,395	361,018	365,255	363,456	391,201	
Return of revenues	11.63	8.19	9.42	8.57	7.47	
Absolute change compared to previous year		-3.44	1.23	-0.85	-1.10	-4.16
Equity Load Coefficient	1.50	1.46	1.46	1.34	1.42	
Absolute change compared to previous year		-0.04	0.00	-0.12	0.08	-0.08
Influence of Equity Load Coefficient		-0.50	-0.02	-1.14	0.71	-0.95
Influence of Return based on revenue		-5.03	1.80	-1.13	-1.56	-5.92

Source: [12].

The change in Return on equity only in 2019 has a positive value and is 1.78%. In the remaining years, it is a negative value and decreases at the end of the period, reaching its lowest value -0.85% in 2021, which means that for every BGN 100 of equity, the balance sheet profit has decreased by BGN 0.85.
This increase is due to the influence of 2 factors,
- as a result of the increase in the Equity Load Coefficient, the Return on Equity increased by 0.71%.
- as a result of the decrease in the Return of revenues, the Return of Equity decreased by 1.56%.
The change in the Return on equity in the

Livestock sector at the end of the research period (2021) compared to the beginning (2017) marked a decrease of 6.87%. This decrease was due to both a decrease in changes in the load factor of 0.95% and a decrease in changes in Return of Revenues of 5.92%.

Vertical analysis occupies an important place in the financial strategy of enterprises engaged in the agro-industry. It is used in determining the state, structure and capital changes in enterprises. The structural analysis is carried out on the basis of the main elements included in the liabilities of the balance sheet and allows to reveal the share of each indicator in the total result for a certain period.

Due to the fact that the results obtained from the analysis of the Capital structure in the crop and livestock sectors showed similar values, it was necessary to generalize them for the agriculture sector.

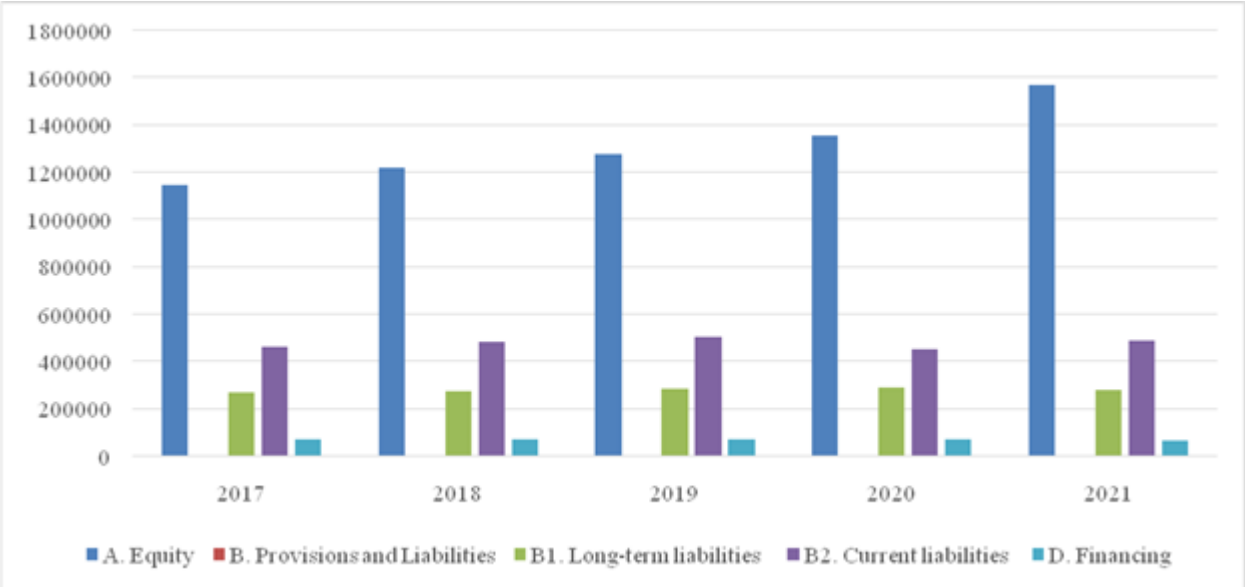

Fig. 1. Return on equity in the Livestock sector
Source: Own design based on the data.

From the data shown in Figure 1, it is clear that the largest relative share in Liabilities on the balance sheet is occupied by equity capital. In the study period, an increase was observed and varied from 58% in 2017 and reached 65% in 2021.

In the next place are the short-term and long-term liabilities, which are relatively constant for the research period and, as a relative, are approximately 23% and 13%, respectively.

Financing and provisions have the lowest value, corresponding to approximately 3% and 0.1%.

Analyzing the above data, one can see the dominance of own capital, which leads to financial independence (autonomy) of enterprises in the agro-industry. This enables enterprises to pay off their long-term debts with their own funds, to attract additional capital without the risk of losing their financial sustainability and to preserve their independence from creditors.

The structural analysis is of great importance because it shows what part of the Equity capital and loan capital are included in the liabilities of the balance sheet and are available to the enterprise. The ratios between the main elements of the capital enable a more complete assessment and analysis of the financial condition of the industry.

CONCLUSIONS

The introduction of digitization in this sphere is a basis for increasing productivity, added value and improving the quality of life. The agricultural sector is increasingly important and relevant due to the increased demand for healthy and biologically pure quality products

that are produced through the application of good agricultural practices.

From the scientific research we can withdraw the next main results and conclusions:

-the financial profitability in the Plant production sector increased over the years and reached positive values at the end of the study Higher positive results in the end of the reviewed period were due to a decrease in load factor variances and an increase in revenue profitability variances.

The negative values in the change in Financial profitability in the Livestock sector are due to both the changes in the load factor and the changes in the profitability of income.

-from a structural point of view, it is evident that the own capital occupies the largest relative share in the total capital resource, which leads to financial independence (autonomy) of the enterprises in the agro-industry. Therefore, the higher amount of equity capital, respectively higher capital adequacy, would mean a reduction in the degree of taking on higher risks.

Financial profitability is an important and basic indicator for calculation in any enterprise or industry, as it gives an opportunity to assess the enterprise's ability to bring income from the capital invested in it, and hence how profitable the enterprise's activity is.

ACKNOWLEDGEMENTS

This research was supported by the Trakia University, Project 1E/2022 „Sustainable agriculture - challenges, means, solutions”.

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