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Analysis of Economic Performance and Sustainability on a Farm in the North-East Region of Romania

Ioan Prigoreanu[1], Gabriela Radu[2], Gabriela Ignat[3]

Abstract: The paper provides a detailed analysis of the financial and economic performance of I.C. Agrotehnica S.R.L. farm, focusing on the period 2021-2023, examining the farm's ability to generate profits and remain competitive in a dynamic economic environment, emphasizing the dimension of economic sustainability. The study uses a set of key indicators, such as gross and net profit margins, return on assets, return on equity and return on invested capital, to assess the farm's economic efficiency and resilience. The results show a significant increase in key performance indicators, reflecting efficient management of financial resources and an increased ability to adapt to market challenges. Thus strategic investments, implementation of modern technologies and optimization of operational processes were decisive factors in strengthening the economic position of the farm. The paper emphasizes the importance of constant monitoring of economic performance and the need to adopt sustainable strategies to support long-term development, while the conclusions of the analysis provide valuable insights for improving competitiveness in the regional agricultural sector and represent a useful resource for strategic decision-making in agriculture.

Keywords: economic performance; sustainability; profitability; financial indicators; regional agriculture

JEL Classification: O35; O36; O32; Q5; Q56

1. Introduction

In recent decades, the concept of sustainability has become central to European agricultural policy, reflecting the need to reconcile economic, social, and environmental objectives. The Common Agricultural Policy is the European Union's main instrument for supporting the agricultural sector, aiming to strengthen farmers' incomes, stimulate rural development, and promote a sustainable food system. However, the impact of the CAP on the economic performance of farms is uneven, varying considerably depending on the size, structure, and location of farms. The concept of economic sustainability in agriculture has become a strategic priority in European Union policies and is closely linked to sustainable development objectives. Modern policies aim not only to increase economic competitiveness, but also to reduce social disparities and ensure territorial cohesion, especially in rural

[1] PhD student, "Faculty of Agriculture, "Ion Ionescu de la Brad" Iasi University of Life Sciences (IULS), Iaşi, Romania, Corresponding author: ioan.prigoreanu@iuls.ro.
[2] PhD student, Faculty of Agriculture, "Ion Ionescu de la Brad" Iasi University of Life Sciences (IULS), Iaşi, Romania, E-mail: gabriela.radu@iuls.ro.
[3] PhD Prof., Faculty of Agriculture, "Ion Ionescu de la Brad" Iasi University of Life Sciences (IULS), Iaşi, Romania, E-mail: gabriela.ignat@iuls.ro.

areas. In this context, the Common Agricultural Policy plays an essential role, with the main objective of ensuring a fair standard of living for farmers by stabilizing incomes and supporting the sustainable development of rural communities. For the new Member States, including Romania, small farms, often characterized by low productivity, have benefited to a limited extent from support. In particular, farms in the north-eastern region of the country are particularly vulnerable economically, with a high degree of dependence on subsidies, and the gap between agricultural and non-agricultural incomes remains significant even after payments are made. At the same time, these farms play an important role in maintaining biodiversity, the rural landscape, and social cohesion, without these contributions being reflected proportionally in the financial support provided.

In the current context of European agriculture, analyzing the economic performance and sustainability of farms is strategically important, especially in less developed regions such as northeastern Romania. Numerous recent studies have highlighted the essential role of the Common Agricultural Policy in maintaining the viability of farms, but also the limitations of this support in relation to the structural characteristics of agricultural holdings in the new Member States. Thus, research by Poczta-Wajda et al. (2021) shows that although the CAP has contributed decisively to reducing income gaps between agriculture and other economic sectors, over 80% of payments have been concentrated on a small percentage of large farms, while small farms, such as those predominant in Romania, have benefited insufficiently. This inequality is also reflected in the study by Georgescu et al. (2025), which analyzes the economic performance and sustainability of farms using four synthetic indicators: ISPAS, IREA, ISAC, and IESA. These assess economic efficiency, emissions reduction, combined sustainability, and land use efficiency. The results show that Romania ranks below the EU average in terms of sustainable performance due to poor agricultural infrastructure, land fragmentation, and low absorption of European funds. The study proposes targeted policies and investments in modern agricultural technologies to improve regional sustainability.

An integrated approach to sustainability is proposed by Stępień et al. (2020), who argue that economic performance should be assessed together with social and environmental dimensions, using indicators such as net income, capitalization, and quality of life in rural areas. In the same vein, Sadowski et al. (2023) propose a synthesized assessment of economic sustainability, highlighting the differences between farms in Central and Eastern Europe and those in the West in terms of economic efficiency, farm size, and reinvestment capacity.

In this context, the paper provides a detailed analysis of the economic and financial performance of the I.C. Agrotehnica S.R.L. farm, located in the north-eastern region of Romania, with a focus on the period 2021–2023. The study examines the farm's ability to generate profits and maintain its competitiveness in a constantly changing economic environment, with a particular focus on economic sustainability. Using a set of key indicators such as gross and net profit margins, return on assets, return on equity, and return on invested capital, the research assesses the economic efficiency and organizational resilience of the farm.

2. Literature Review

The literature devoted to the analysis of economic performance and sustainability of farms highlights a methodological and geographical diversity, reflecting the complexity of current challenges in the agricultural sector. Recent approaches combine economic, ecological, and institutional perspectives, proposing integrated models for farm assessment in both developed and emerging contexts. A notable example of integrating economic and environmental dimensions is the study by Liang et al. (2024),

which proposes the ESRIDM (Environmentally Sustainable Residual Income Decomposition Modelling) model for assessing farm sustainability at the crop level. Applying this model to nitrogen management in cotton cultivation, the authors demonstrate that, in the absence of regulatory intervention, the scenarios analyzed generate negative ecological income, signaling an unsustainable agricultural practice in the long term. This approach highlights the need to include external environmental costs in economic performance analysis. At the institutional level, the work of Nuryanah et al. (2021) addresses the sustainability of agriculture from a corporate governance perspective, emphasizing the role of management structures and foreign capital in maintaining financial viability. The study shows that, despite efficient cost management, most of the agricultural companies analyzed are at risk of bankruptcy, highlighting the need for effective regulation and increased financial literacy in the sector.

In the European context, the European Commission's report (2022) on the economic performance of farms provides an overview of the structural and functional diversity of agriculture in the EU. Using data from the FADN network, the analysis highlights marked differences between small and large farms, as well as between Member States in terms of income, productivity, and ability to adapt to external shocks. The report emphasizes the essential role of the CAP in supporting incomes, but draws attention to future challenges related to market volatility and climate change, recommending more flexible policies geared towards innovation and resilience. Complementing this, the study by Mahdavi et al. (2024) provides a multi-criteria approach to farm-level sustainability, applying the PROMETHEE method to rank farms according to their economic, social, and environmental performance. The results show that factors such as net income and resource efficiency are decisive for sustainability, and that targeted support for small farms is essential to ensure a balance between competitiveness and environmental protection.

From a resilience perspective, Morel et al. (2024) propose a theoretical framework for understanding the sustainability of European farms, based on their ability to respond and adapt to external shocks and disruptions. The study, conducted in six EU Member States, highlights the existence of farm types with distinct adaptive strategies, depending on available resources and the institutional context. The authors argue that public policies need to be flexible enough to support the transition to resilient and sustainable agriculture, adapted to local realities. Rezaei-Moghaddam and Karami (2020) propose a farmer-centered perspective, investigating the psychological factors that influence the intention to adopt sustainable agricultural practices. Using Structural Equation Modeling (SEM), the authors highlight the role of personal values, perceived behavioral control, and social norms in shaping behavior toward sustainability. The study shows that a favorable attitude toward sustainable development, supported by adequate institutional support, increases the likelihood of adopting environmentally friendly practices. These findings support the idea that effective public policies should include education and psychosocial counseling components in addition to economic incentives.

From a more applied perspective, Wrzaszcz and Zegar (2014) analyze the economic sustainability of farms in Poland using data from the 2010 Agricultural Census and four key indicators: land productivity, labor productivity, market orientation, and income structure. The authors highlight a parabolic relationship between farm size and economic performance, confirming that medium-sized farms tend to be the most sustainable. Furthermore, a positive correlation emerges between economic and environmental sustainability, in the sense that farms with better economic performance are also those that more frequently adopt environmentally friendly agricultural practices.

Within an integrated methodological framework, Neumeister (2019) proposes a multidimensional assessment of the sustainability of Austrian farms, combining economic, social, and ecological

indicators. The study shows that sustainability is influenced by market orientation, diversification of agricultural activities, and participation in agri-environmental schemes. The conclusions support the need for coherent policies that support the transition to sustainability through monitoring tools and by encouraging the adoption of resilient agricultural business models. In turn, Nurmet and Omel (2020) highlight the issue of economic viability depending on the economic size of the farm, analyzing FADN data from Estonia. The study shows that large farms are significantly more economically viable than small ones, and the proportion of viable farms has declined over time, from 59% in 2006 to only 37% in 2015. This trend raises questions about the long-term sustainability of fragmented agricultural structures and justifies the need for differentiated policies that provide real support to small farmers. Gadanakis et al. (2015) provide a comparative perspective on the sustainability of farms in four European countries by applying the Data Envelopment Analysis (DEA) method. The study reveals that economic efficiency does not always correlate with environmental performance, suggesting that there are significant trade-offs between competitiveness and environmental protection objectives. The authors argue for agricultural policies that encourage not only the maximization of efficiency but also the internalization of environmental externalities in agricultural decision-making.

Another important direction in the literature focuses on analyzing economic performance and sustainability in diverse institutional and structural contexts, highlighting significant differences between regions and farm types. For example, Nuryanah et al. (2021) analyze the sustainability of agricultural companies in terms of financial performance and corporate governance. Using long-term data (2003-2018), the authors show that most firms are at risk of bankruptcy, despite efficient cost management. A positive determining factor is identified in foreign ownership, highlighting the importance of external capital and financial regulation for increasing the resilience of the agricultural sector. In terms of adaptive diversity, the study by Zasada et al. (2019) proposes a multi-case approach in 11 European regions, highlighting regional variations in economic, ecological, and social adaptation strategies in agriculture. According to the authors, structural flexibility of farms and differentiated policy support are critical factors for ensuring sustainability. The results call for decentralized agricultural policies tailored to local specificities and capable of supporting farm resilience to external shocks.

The analysis of economic performance according to geographical location is addressed by Hornungová (2022), who, through a factor analysis applied to a sample of large agricultural firms in four European regions, identifies a "profitability factor" that correlates ROE and ROCE indicators with regional location. The conclusion is that firms in Western and Northern Europe perform significantly better economically than those in the south of the continent, highlighting structural and competitiveness imbalances between regions. The issue of income distribution and economic inequalities is addressed in the paper by O'Donoghue et al. (2016), which, using the EU-FARMIS econometric model and FADN data, analyzes performance differences between farms, both by country and by economic size. The authors highlight the ambivalent effect of CAP direct payments: they reduce inequalities but do not always stimulate economic efficiency, suggesting the need to recalibrate the common agricultural policy in favor of equity and long-term viability.

A significant contribution to the dynamics of aggregate performance is made by Sipiläinen and Kumbhakar (2022), who propose a five-part decomposition of profitability at the aggregate level. Their analysis of farms in ten EU countries shows that total factor productivity was the main driver of growth, but this was offset by input prices and structural changes. The results suggest that overall efficiency can only be improved if these negative influences are properly managed. And in an uncertainty and risk-oriented perspective, Ongaro and Arfini (2019) develop a positive mathematical programming (PMP) model for evaluating resource allocation decisions on farms in the Emilia-Romagna region of Italy. The

study highlights the impact of price variability and CAP reforms on farm income, concluding that, under conditions of high volatility, farmers prefer cautious strategies. The proposed model provides a useful framework for analyzing economic sustainability under risk, supporting the need for policies that provide predictability and stability to the agricultural environment.

Studies in the literature highlight the complexity and diversity of approaches to analyzing the economic performance and sustainability of farms, highlighting the interdependence between economic, ecological, institutional, and psychological factors. Integrating these into advanced evaluation models allows for the identification of structural vulnerabilities and regional differences, as well as the formulation of more flexible, equitable, and resilience-oriented agricultural policies.

3. Materials and Methods

The study aims to assess the economic performance and financial sustainability of the commercial company I.C. Agrotehnica S.R.L. during the period 2021-2023. The analysis is based on the interpretation of a set of relevant quantitative indicators that reflect both the efficiency of resource use and the level of profitability and capital structure used in current operations. This approach allows for the formulation of a comprehensive financial diagnosis, with the aim of identifying the economic strengths and weaknesses of the farm in the current context of Romanian agriculture and the economic sustainability requirements promoted at European level.

The data sources used in the analysis are the annual financial statements of S.C. I.C. Agrotehnica S.R.L. for the three financial years analyzed. These were processed and interpreted in order to calculate key performance indicators, which provide a comprehensive picture of the profitability, financial structure, and self-financing capacity of S.C. I.C. Agrotehnica S.R.L.

The methodology applied is based on established financial and accounting analysis tools, adapted to the specific nature of the agricultural sector, in order to assess the economic performance and financial sustainability of S.C. I.C. Agrotehnica S.R.L. The main purpose of this methodological approach is to quantify the level of profitability, identify trends in the company's financial structure, and determine the efficiency of the use of available resources.

As part of the analysis, a set of relevant economic and financial indicators were selected and interpreted, allowing for a comprehensive assessment of the economic performance and financial sustainability of S.C. I.C. Agrotehnica S.R.L.:

1. The net profit margin summarises the net profit earned for each monetary unit of operating income and is an essential indicator in assessing the effectiveness of the commercial policy and the ability of S.C. I.C. Agrotehnica S.R.L. to convert gross income into financial results.

2. Return on assets (ROA), defined as the ratio between net profit and total assets, provides information on the efficiency with which all the economic resources of S.C. I.C. Agrotehnica S.R.L. are used to generate profit, so a high value of this indicator signals good use of the capital employed.

3. Return on equity (ROE) is the ratio between net profit and equity, being a benchmark for investors, as it expresses the level of remuneration of the financial resources made available to S.C. I.C. Agrotehnica S.R.L. by its shareholders.

4. Return on invested capital (Rec) is calculated as the ratio between operating profit adjusted for taxes (EBIT - tax) and total invested capital (comprising equity, long-term liabilities, and provisions). This

indicator allows the efficiency with which S.C. I.C. Agrotehnica S.R.L. uses the entire capital invested in the business, regardless of its source.

5. EBIT and EBITDA, as indicators of operating profitability, provide a clear picture of the performance of S.C. I.C. Agrotehnica S.R.L. before the influence of decisions regarding capital structure, taxation level, and depreciation policy. These indicators are frequently used for inter-sectoral comparisons and in short-term performance analyses.

6. Capital structure ratios reflect the ratio between total assets and the various components of invested capital (equity and total capital). They are used to assess the internal financial balance and degree of financial autonomy of S.C. I.C. Agrotehnica S.R.L.

7. The financial leverage effect, calculated as the difference between ROE and Rec, allows the impact of debt financing on the return on equity to be assessed. A positive leverage effect indicates an efficient use of loans to increase the return on own resources, while a negative effect may signal an increased risk of financial vulnerability for S.C. I.C. Agrotehnica S.R.L.

The analysis was structured to allow direct correlation between the resources employed (equity, assets, invested capital) and the results obtained (net profit, EBIT, EBITDA). This relationship forms the basis for assessing economic sustainability, understood as the company's ability to generate sustainable performance under a balanced financial structure and in an agricultural environment that is often exposed to volatility and uncertainty. At the same time, the methodology aims to assess the farm's ability to withstand economic risks and make effective use of internal and external sources of financing. To this end, key indicators of profitability (ROA, ROE, net profit margin), operational profitability (EBIT, EBITDA), as well as indicators of capital structure and financial leverage have been calculated and interpreted, providing an integrated view of financial balance and strategic sustainability.

By using these quantitative methods, the research aims to highlight the extent to which the strategic management of resources and the investment decisions taken by the company's management have contributed to improving the economic performance and strengthening the financial position of the farm in the medium term. The conclusions drawn from this analysis can serve as a basis for formulating managerial and financial recommendations relevant to the sustainable development of the analyzed company and other agricultural holdings in a similar economic context.

4. Results and Discussions

The analysis of the economic and financial results obtained by I.C. Agrotehnica S.R.L. during the period 2021–2023 provides a clear picture of the farm's ability to manage its resources efficiently and maintain its viability in a constantly changing agricultural environment. The profitability of I.C. Agrotehnica S.R.L. represents its ability to generate profit through the use of production factors and capital. In other words, profitability is a prerequisite for achieving the economic and financial balance of I.C. Agrotehnica S.R.L., becoming a tool for making decisions regarding asset management and maintaining the company in the competitive environment of the market economy (Figure 1).

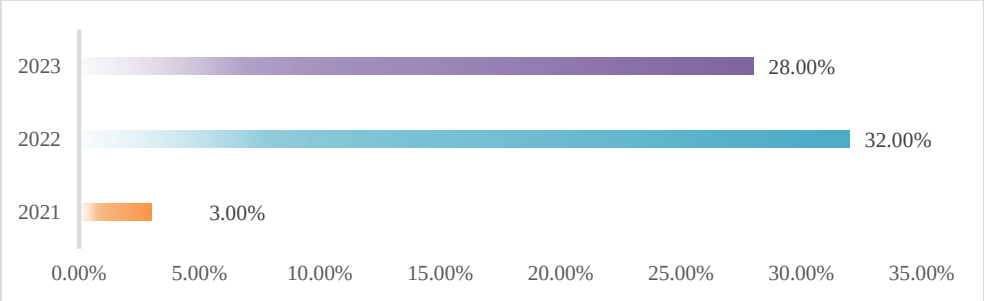

Figure 1. Net profitability dynamics at I.C. Agrotehnica S.R.L. during the analyzed period

An analysis of the net profit margin for S.C. I.C. Agrotehnica S.R.L. between 2021 and 2023 shows significant dynamics in this key financial performance indicator. In 2021, the net profit margin stood at only 3%, suggesting low efficiency in converting operating income into net profit. This value reflects high production costs and an income structure that did not allow for satisfactory profitability. In the following year, 2022, the indicator increased to 32%, equivalent to an increase of approximately 967% compared to the previous year, suggesting a profound transformation in the financial management of S.C. I.C. Agrotehnica S.R.L. In 2023, the net profit margin remained high at 28%, recording a slight decrease of four percentage points compared to the previous year. However, the value of the indicator remains well above the 2021 level, reflecting a consolidation of S.C. I.C. Agrotehnica S.R.L.'s ability to generate profit in a potentially volatile agricultural economic environment. The analysis of the net profit margin indicates a favorable performance of I.C. Agrotehnica S.R.L. in terms of profitability, with rapid growth and relative stabilization in the last two years, which highlights the company's strategic adaptability and operational efficiency, but also suggests the need to consolidate results in order to reduce the risk of future fluctuations and ensure the farm's financial sustainability.

The evolution of the EBIT and EBITDA rates in the period 2021-2023 shows a considerable improvement in the operating profitability of S.C. I.C. Agrotehnica S.R.L., reflecting significant changes in the way the economic activity is managed (Figure 2).

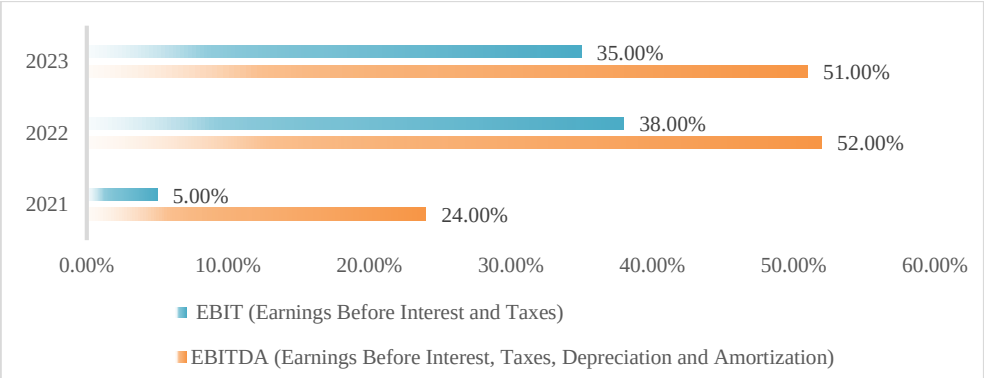

Figure 2. Operating profitability indicators (EBIT and EBITDA) at I.C. Agrotehnica S.R.L.

In 2021, the EBIT margin was only 5%, while the EBITDA margin stood at 24%. This significant gap between the two indicators signals a significant share of depreciation expenses in the total cost structure, which can be explained by recent investments in fixed assets or technological equipment. The year 2022 marks an increase for both indicators: the EBIT ratio reaches 38%, and the EBITDA ratio rises to 52%, indicating a clear optimization of operations through reduced operating expenses and more efficient utilization of production capacities. At the same time, this performance suggests an improvement in

management control over operating cash flows. In 2023, the indicators remain at a high level but show a slight decline: the EBIT ratio falls to 35% and the EBITDA ratio to 51%. Although the values are slightly lower than in the previous year, they remain well above 2021 levels, indicating that economic efficiency has stabilized at a competitive level. Thus, the constant and balanced ratio between EBITDA and EBIT in 2022 and 2023 (a difference of approximately 16-17 percentage points) shows consistent management of the depreciation policy and consistency in the structure of fixed costs, which contributes to the predictability of economic results. The dynamics of the two indicators during the period under review reflect a positive and sustainable evolution of the company's operating profitability, while the increase in 2022 and the maintenance of a high level in 2023 indicate a maturing business model and an increased ability to adapt to market conditions and capitalize on available resources.

Figure 3 highlights the dynamics of ROE and ROA, two essential indicators for assessing the financial efficiency and utilization of the company's own and total resources, which, from different perspectives, reflect the ability of S.C. I.C. Agrotehnica S.R.L. to generate profit from invested capital and total economic assets, respectively.

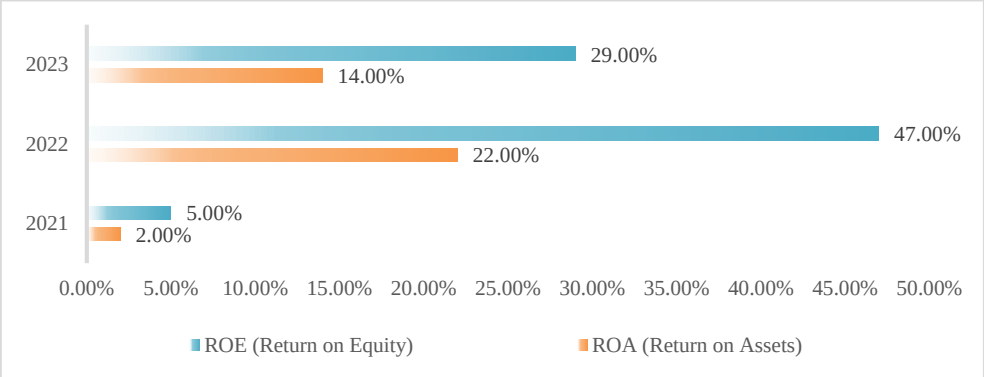

Figure 3. Return on equity and return on assets at I.C. Agrotehnica S.R.L.

In 2021, ROE stood at 5% and ROA at only 2%, indicating the beginning of a period of low profitability, in which both equity and total assets were inefficiently utilized in relation to the net result achieved. The causes can be attributed to an unbalanced cost structure, insufficient income, and reduced production and economic capacity. The situation changed significantly in 2022, when ROE increased to 47% and ROA rose to 22%, signaling remarkable efficiency in the use of equity and much better utilization of total assets. The sharp increase in ROE also indicates a significant positive leverage effect, meaning that the company has used its loans efficiently, amplifying the return on equity. In 2023, both indicators declined: ROE reached 29% and ROA 14%. Although the values are lower than in the previous year, they remain considerably higher than in 2021, indicating a consolidation of profitability.

The constant ratio between ROE and ROA in the period 2022-2023 confirms the existence of a healthy level of indebtedness, which has contributed favorably to improving economic performance without affecting the company's financial balance, highlighting a positive transformation in the farm's overall profitability, marked by increased efficiency in the use of both equity and total assets, confirming the ability of S.C. I.C. Agrotehnica S.R.L. to generate value for investors and sustain financial sustainability in the medium term.

Figure 4 reflects the efficiency with which S.C. I.C. Agrotehnica S.R.L. uses the total financial resources committed to its activities, regardless of their origin (equity, long-term debt, or provisions). The evolution of this indicator is therefore relevant for understanding how the company manages its investments and contributes to the creation of economic added value.

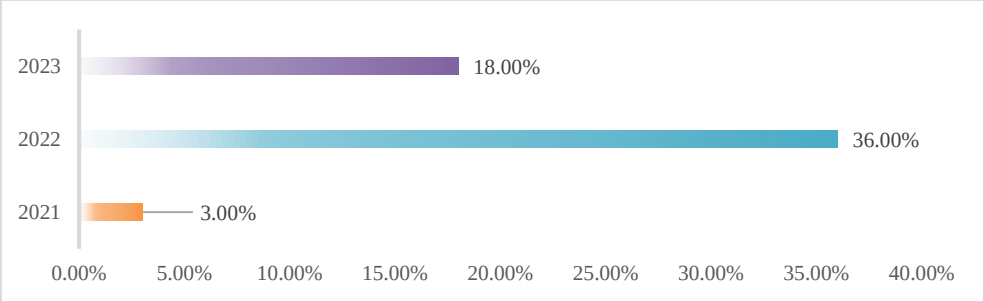

Figure 4. Economic performance through ROIC at I.C. Agrotehnica S.R.L.

In 2021, return on invested capital was very low, at 3%, signaling the start of a period marked by modest economic performance, indicating underutilization of available capital and an imbalance between operating profit and the financing structure of the business. In 2022, the indicator increased to 36%, representing an improvement of 33 percentage points compared to the previous year, indicating an efficient and profitable use of all capital employed in the farm's activity. This positive trend reflects both the increase in operating profit (EBIT - tax) and the consistent use of financing sources. In 2023, the return on invested capital decreased to 18.00%, marking a significant decline compared to the previous year. However, the value remains six times higher than in 2021, indicating that investment efficiency has been maintained at an acceptable level, albeit with a slight decline.

The overall evolution of the indicator highlights an accelerated process of financial maturation of S.C. I.C. Agrotehnica S.R.L. in 2022, followed by an adjustment in 2023, while maintaining positive performance. Return on invested capital is thus a key indicator for assessing the sustainability of strategic decisions and for estimating the company's ability to attract, engage, and efficiently utilize available resources in the regional agricultural context.

Capital structure indicators provide valuable information on the degree of financial autonomy and the balance between the resources employed and the assets held by S.C. I.C. Agrotehnica S.R.L. The analysis of the structure ratios for equity and invested capital highlights how the farm sustains its activity in terms of stable resources and long-term financing capacity (Figure 5).

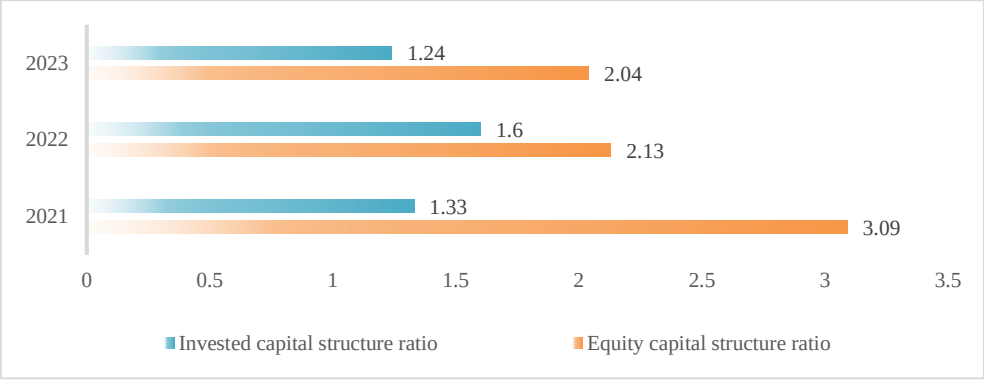

Figure 5. Composition and evolution of funding sources at I.C. Agrotehnica S.R.L.

In 2021, the equity ratio was high at 3.09, indicating that for each monetary unit of equity, I.C. Agrotehnica S.R.L. held more than three times as many assets, reflecting a low degree of capitalization from own resources and a considerable dependence on external resources to sustain its activity. In the same year, the structure ratio for invested capital was 1.33, indicating relatively balanced financing of total assets through stable sources (equity + long-term debt + provisions). In 2022, both ratios show a

favorable evolution, with the structure ratio for equity falling to 2.13, signaling an increase in the contribution of equity to the financial structure, which can be interpreted as a step towards strengthening financial autonomy. At the same time, the ratio of invested capital rises to 1.60, suggesting an expansion of the stable capital base by attracting long-term financing necessary to support productive assets. In 2023, the downward trend in the equity ratio continues, reaching 2.04, and the ratio for invested capital will fall to 1.24, indicating an overall reduction in pressure on equity and total invested capital, as assets grow at a more moderate pace than stable sources of financing.

The evolution of the two structure ratios highlights a progressive process of financial rebalancing within I.C. Agrotehnica S.R.L., with the significant reduction in values from 2021 to 2023 suggesting a gradual strengthening of the farm's financial position, marked by an increase in equity and a more rational use of invested capital in relation to the volume of assets under management.

The financial leverage effect reflects the difference between the return on equity and the return on invested capital, providing essential information on how indebtedness influences the profitability of own resources. The greater this difference (positive), the more efficiently loans are used to generate additional profit for shareholders. In the case of a negative difference, the leverage effect becomes destructive, generating risks to the financial stability of I.C. Agrotehnica S.R.L (Figure 6).

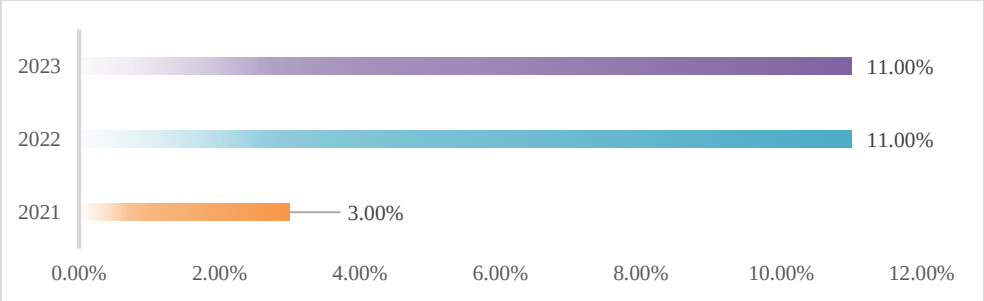

Figure 6. The impact of debt financing on profitability at I.C. Agrotehnica S.R.L.

In 2021, the leverage effect was only 3%, indicating a limited impact of debt on return on equity. In this context, it can be concluded that the financing structure was prudent and the degree of net profit multiplication through borrowed capital was low. The year 2022 brings a significant increase in leverage, reaching 11%, which reflects the efficient use of long-term debt, with direct positive results on return on equity. In practice, I.C. Agrotehnica S.R.L. managed to turn the cost of external financing into a strategic advantage, amplifying the return on shareholders' investments through efficient management of invested capital. In 2023, the leverage effect remains constant at 11%, confirming the stability of the financial strategy adopted. Maintaining this level indicates a sustainable balance between equity and borrowed capital, and the consistency of the value highlights a high degree of financial maturity. Thus, I.C. Agrotehnica S.R.L. demonstrates that it is able to use loans without compromising its economic performance or decision-making autonomy.

The analysis of the evolution of the financial leverage effect between 2021 and 2023 shows an upward and then consolidated trend, reflecting a financing strategy based on maximizing the return on equity through a controlled level of indebtedness. Thus, this indicator, together with those analyzed above, supports the idea of balanced financial management focused on sustainable performance within S.C. I.C. Agrotehnica S.R.L.

5. Conclusion

The study aimed to establish and apply an economic and financial analysis framework for S.C. I.C. Agrotehnica S.R.L., with the purpose of evaluating the economic performance and financial sustainability of a representative farm in the north-eastern region of Romania. Given the specific nature of the Romanian agricultural sector and the need for efficient management in a volatile economic environment, the study closely monitored the relationship between the resources employed and the results obtained, with a focus on the evolution of yields, capital structure, and financial resilience.

The research results highlight a positive and consolidated trajectory of the farm's economic performance, with a significant increase in all key indicators between 2021 and 2022, followed by relative stabilization in 2023. The net profit margin increased from 3% in 2021 to 32% in 2022, subsequently remaining at a competitive level of 28%, which indicates superior commercial efficiency and effective cost management. Return on equity (ROE) and return on assets (ROA) followed the same upward trend, reaching highs of 47% and 22% in 2022, followed by sustainable adjustments in 2023. Return on invested capital (Rec) jumped from 3% in 2021 to 36% in 2022, reflecting excellent utilization of stable funding resources. Although this indicator declined to 18% in 2023, the level achieved remains well above the initial average, confirming the solidity of the business model. Positive developments in EBIT and EBITDA also support the operational efficiency and robustness of the company's core economic flows. Financial structure indicators reveal a continuous improvement in financial autonomy, through a reduction in the ratio of total assets to equity or invested capital. The decrease in the equity ratio from 3.09 in 2021 to 2.04 in 2023 suggests a strengthening of capitalization and a reduced dependence on external financing, while the financial leverage ratio, which has remained constant at 11% over the last two years, indicates the efficient use of borrowed capital to increase the return on own resources.

Overall, the research confirms that the farm analyzed has undergone a clear process of economic maturation, characterized by increased efficiency, financial balance, and the ability to adapt to market demands. Thus, the consistent utilization of capital and the maintenance of a balanced financial structure have enabled I.C. Agrotehnica S.R.L. achieve a high level of profitability and consolidate its position in a dynamic and competitive agricultural sector. Therefore, the results obtained support the idea that the application of rigorous financial analysis, focused on relevant indicators adapted to the agricultural sector, provides a solid foundation for strategic decisions aimed at sustainability and economic growth in the Romanian rural environment.

References

Czubak, W., & Piotr Pawłowski, K. (2020). Sustainable Economic Development of Farms in Central and Eastern European Countries Driven by Pro-investment Mechanisms of the Common Agricultural Policy. *Agriculture*, 10(4), 93.

European Commission. (2022). *Economic performance and sustainability of EU farms*. European Commission, Directorate-General for Agriculture and Rural Development. Retrieved from https://agriculture.ec.europa.eu/system/files/2022-04/fadn-report-economic-performance-sustainability_en_0.pdf.

Gadanakis, Y., Bennett, R., Park, J., & Areal, F. (2015). Evaluating the sustainability of agriculture using data envelopment analysis: An application to farms in England and Wales. *Journal of Environmental Management*, 147, 172-180.

Georgescu, P.-L., Barbuta-Misu, N., Zlati, M. L., Fortea, C., & Antohi, V. M. (2025). Quantifying the Performance of European Agriculture Through the New European Sustainability Model. *Agriculture*, 15(2), 210.

Gołaś, M., Sulewski, P., Wąs, A., Kłoczko-Gajewska, A., & Pogodzińska, K. (2020). On the Way to Sustainable Agriculture—Eco-Efficiency of Polish Commercial Farms. *Agriculture*, 10(10), 438.

Guth, M., Smędzik-Ambroży, K., Czyżewski, B., & Stępień, S. (2020). The Economic Sustainability of Farms under Common Agricultural Policy in the European Union Countries. *Agriculture*, 10(2), 34.

Hornungová, J. (2022). Economic performance of European agriculture companies using factor analysis. *Custos e @gronegócio on line*, 18(4), 338-348. Retrieved from https://www.custoseagronegocioonline.com.br/.

Liang, Y., Brown, P. J., Bajada, C., & Pham, H. (2024). Towards better understanding the economic and environmental sustainability of alternative agricultural cropping production systems through integrated modelling. *Journal of Cleaner Production*, 479.

Mahdavi, A., Ghanbari, H., Haji Rahimi, H., & Nabavi-Pelesaraei, A. (2024). Integrated assessment of sustainability in farming systems using multi-criteria decision analysis: A case study in Khuzestan province, Iran. *Global Journal of Environmental Science and Management*, 10(3), 1433-1456.

Morel, K., Dockès, A. C., Darnhofer, I., Prost, L., Schleyer, C., Solagro, L., & Magrini, M. B. (2024). Farming system sustainability through a resilience lens: A framework and empirical insights from six European countries. *Agricultural Systems*, 213.

Neumeister, D. (2019). Farm-level sustainability assessment: Austrian agriculture in the light of multidimensional indicators. *Agronomy*, 9(6), 263-278.

Nurmet, M., & Omel, R. (2020). Economic viability of family farms in Estonia by farm size. *Agricultural and Food Science*, 29(3), 241-256.

Nuryanah, S., Sari, D., & Hermawan, A. (2021). Sustainability of Agriculture: An Analysis Based on Financial Performance and Good Governance. *IOP Conference Series: Earth and Environmental Science*, 940.

O'Donoghue, C., Devisme, S., Ryan, M., Conneely, R., Gillespie, P., & Vrolijk, H. (2016). Farm economic sustainability in the European Union: A comparative analysis using farm level microdata. *Studies in Agricultural Economics*, 118(3), 163-171.

Ongaro, E., & Arfini, F. (2019). Farm economic performance under risk and uncertainty: A PMP model application to the Emilia-Romagna region. *Italian Review of Agricultural Economics*, 74(3), 41-62.

Prigoreanu, I., Radu, G., Grigore-Sava, A., Costuleanu, C. L., Ungureanu, G., & Ignat, G. (2025). Assessing the Economic Sustainability of the EU and Romanian Farming Sectors. *Sustainability*, 17(10).

Rezaei-Moghaddam, K., & Karami, E. (2020). A multi-level and multi-dimensional approach for evaluating agricultural sustainability: A case study and tool development. *Sustainability*, 12(7).

Serebrennikov, D., Thorne, F., Kallas, Z., & McCarthy, S. N. (2020). Factors Influencing Adoption of Sustainable Farming Practices in Europe: A Systemic Review of Empirical Literature. *Sustainability*, 12(22).

Sipiläinen, T., & Kumbhakar, S. C. (2022). Dynamics in the economic performance of farms: A quintipartite decomposition of the profitability change at the aggregate level. *European Review of Agricultural Economics*, 49(1), 38-65.

Tzouramani, I., Mantziaris, S., & Karanikolas, P. (2020). Assessing Sustainability Performance at the Farm Level: Examples from Greek Agricultural Systems. *Sustainability*, 12(7).

Wrzaszcz, W., & Zegar, J. S. (2014). Economic sustainability of farms in Poland. *European Journal of Sustainable Development*, 3(3), 165-176.

Zasada, I., Rega, C., Paracchini, M. L., Salvatore, M., & Piorr, A. (2019). Addressing sustainability in research on rural development and land use: The role of farm-level adaptation strategies. *Sustainability*, 11(3), 744.