

University of Sopron

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**A COMPARATIVE ANALYSIS OF THE
PERFORMANCE OF HUNGARIAN
AGRICULTURAL ENTERPRISES AFTER EU
ACCESSION AND THE IDENTIFICATION OF THE
FINANCIAL QUESTIONS AFFECTING THE
PERFORMANCE OF ENTERPRISES**

Doctoral (PhD) dissertation theses

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Supporting signatures of supervisors

1. BACKGROUND TO THE SCIENTIFIC WORK

I started my scientific work in 2003, when I applied to the Doctoral School of Szent István University as an MSc agricultural engineer. My studies were delayed by a 1-year foreign scholarship and a ministerial position, but I finally obtained my absolatory degree in 2009. From 2010, I started professional work abroad in the areas of agricultural and rural development, so I stopped my studies. I became an employee of the European Commission, the European Parliament, and then the Brussels office of the United States Department of Agriculture, spending more than 12 years abroad. However, I did not stop my publication and research work in addition to my work, I contributed to numerous professional articles and books. After returning home, I decided to do my research and complete my studies at the Sándor Lámfalussy Doctoral School of Economics at the University of Sopron.

1.1. RELEVANCE OF THE TOPIC

Following the historic EU accession in 2004, a significant amount of financial data has been collected over the past two decades, which affects the performance and sustainability of agricultural enterprises. The viability and performance of enterprises primarily result from the ability of the activities they carry out to generate sales revenue. However, sustainability aspects are also increasingly important in the case of agricultural enterprises. Global crises, such as climate change, further highlight the vulnerability of these enterprises, as the climatic factors, seasonal changes and market demand have effects on these enterprises.

The chosen interval encompasses several challenges, such as a global financial crisis, the COVID pandemic, the exceptionally dry year of 2022 and the start of the new Common Agricultural Policy. Analyzing the effectiveness of agricultural enterprises is essential to understanding the effectiveness of different agricultural strategies and operating models, especially in such a multi-faceted period.

1.2. JUSTIFICATION OF THE CHOICE OF THE TOPIC, THE OBJECTIVES

The doctoral dissertation deals with the financial, income, and sustainability performance of Hungarian and Polish agricultural cooperatives between 2016-2023. My research contributes to the scientific foundation and development of the topic by providing a comprehensive analysis of the development, performance, and related factors of the selected period.

1.3. HIPOTHESES

The doctoral dissertation seeks answers to the following questions and hypotheses, which target the performance of Hungarian agricultural cooperatives and the relevant factors during a key period of European Union membership.

Question 1: How did the performance of Hungarian and Polish agricultural cooperatives develop in the years 2016-2023?

Hypothesis 1/A: The value of the indicators measuring the wealth position of domestic agricultural enterprises was

lagging behind that of Polish agricultural enterprises in the examined period.

Hypothesis 1/B: The value of the indicators measuring the financial situation of domestic agricultural enterprises was lagging behind that of Polish agricultural enterprises in the examined period.

Hypothesis 1/C: The value of the indicators measuring the profitability of agricultural enterprises was lagging behind that of Polish agricultural enterprises in the examined period.

Question: Can Hungarian and Polish agricultural enterprises be significantly distinguished based on their financial, financial and profitability position?

Hypothesis 2: The financial type phenomena of Hungarian and Polish agricultural enterprises are determined by different factors, thus forming different groups.

Question 3: Does the value of the ESG indicator affect the financial indicators of the examined Hungarian agricultural enterprises?

Hypothesis 3: The ESG indicator of Hungarian agricultural cooperatives has a positive effect on the asset, financial and profitability situation.

2. CONTENT ISSUES OF THE RESEARCH, METHOD AND JUSTIFICATION

The structure of my research is logically divided into three main parts and five main chapters. The secondary research covers the first large part, in which, after the topicality and significance of the topic, I process the domestic and international literature. Chapter 2. presents the situation of agriculture, the agricultural data that can be examined, the sources coming to agriculture and the possibilities of agricultural financing and their measurement. Chapter 3 of the dissertation describes the databases used for the doctoral dissertation, the selected indicators of the asset, financial, profitability and sustainability situation, the methods used and the limitations of the analysis. The basis of my research is the company data of Hungarian and Polish agricultural joint-stock companies selected from the Crefoport Company Information Database in the years 2016-2023. I supplemented these data with data from

Opten Informatikai Kft, the Hungarian Central Statistical Office and Eurostat. During the analysis of the data, several financial indicators and other performance measurement aspects are considered, through which we can obtain a comprehensive picture of the operation and effectiveness of agricultural joint ventures. I also examined the effectiveness and sustainability based on the ESG (Environmental, Social, Governance) index, using the Opten Informatikai Kft database. My research also compares the ESG index of the agricultural enterprises and the hospitality sector. Chapter 4 provides the methodological part of the research and the results. I present and illustrate the development of the asset and liability structure of the examined agricultural enterprises with a descriptive analysis, the change in the relationship between capital structure, profitability and liquidity. This is followed by variance and correlation analysis, which provides additional partial results. These partial results are confirmed by the results of the factor and cluster analysis. Finally, I analyze the sustainability indicators using descriptive statistics and distribution analysis. Chapter 5 summarizes the results of the hypothesis verifications, and

new scientific results and conclusions-suggestions are formulated.

3. RESULTS, THESES

Through its objectives and results, my research can contribute to the development of the agricultural sector, to the more efficient operation of agricultural enterprises, and can also help to establish future professional and political decisions.

3.1. NEW SCIENTIFIC RESULTS

In contrast to previous research analyzing Hungarian agricultural enterprises from the perspective of assets, finances and profitability, this research compares Hungarian and Polish data in a period that is burdened by multiple external influences. Another novelty is that the examination of the financial indicators of agricultural companies also takes into account sustainability (ESG) indicators. The integration of ESG aspects opens a new dimension in the examination of the relationship between sustainability and economic performance.

Based on the results obtained, the following research theses can be formulated:

T1: The relationship between the ratio of fixed assets and liquidity cannot be generalized: in the case of Hungarian agricultural enterprises, a negative correlation is observed, while in the case of Polish agricultural enterprises, a positive correlation is observed, which reflects a different financing structure, a different willingness to take risks, and a difference in the market environment. This result indicates that a decrease in the ratio of fixed assets can be observed in Hungarian companies, which indicates a shift towards current assets. This may serve to increase flexibility, but may also result in a decrease in competitiveness in the long term. Through the promotion of technological development and sustainable investments, the proportion of fixed assets can be increased. In the case of Polish firms, the share of fixed assets is consistently higher, indicating a long-term investment strategy and a more stable economic policy environment. In order to preserve financing flexibility, the proportion of current assets can be further optimized.

T2: The internal correlation of profitability indicators is stronger in the Hungarian sample, while in the case of

Polish agricultural enterprises it is more diversified, which indicates different business models.

My results have shown that the ROE and ROA indicators of Hungarian companies are more stable, which indicates more efficient asset use and more successful operation.

The profitability indicators of agricultural enterprises in Poland show greater volatility, with negative values in several years. It is necessary to explore the reasons for loss-making years and apply more conservative financial management. The profit margin of Hungarian companies is higher, which indicates more efficient operational operations. In Poland, the higher level of operating costs may reduce competitiveness.

T3: The close co-movement of liquidity indicators in both countries justifies the integrated management of short-term solvency.

The obtained results show that the liquidity indicators of Hungarian companies are stable, which indicates balanced financial management. Based on the values of the quick ratio and immediate liquidity, companies are able to meet their short-term obligations.

The solvency of enterprises operating in Poland shows greater volatility, which indicates sensitivity to external economic impacts. The accumulation of financial reserves and the structured management of short-term liabilities are of paramount importance for the sustainable financial management of enterprises.

T4: Hungarian enterprises follow a conservative financing strategy, while Polish companies rely more on external sources, which carries growth potential but also risks.

My results support that Hungarian enterprises follow a conservative financing policy, are characterized by lower debt and indebtedness. This reduces financial risks, but may also indicate restraint in investment activity. In the case of enterprises operating in Poland, external financing is more intensive, which carries growth potential, but may also result in financial vulnerability. Maintaining an appropriate proportion of equity and optimizing interest burdens contribute to the financial stability and long-term profitability of enterprises, while mitigating financing risks.

T5: The application of the ESG indicator can be examined together with three economic indicators and can be used, for example, for credit ratings.

4. CONCLUSIONS, RECOMMENDATIONS

During the COVID19 pandemic, agricultural enterprises became more cautious in borrowing, especially in Hungary. This resulted in, for example, a postponement of investments, which led to a decrease in external financing in Hungary. In addition, many companies built financial reserves, the role of financial reserves increased, especially in the agricultural sector, which improved the liquidity ratio. The identification of regional disparities can yield particularly valuable insights within a given analysis; therefore, only a development policy that supports the increase of domestic value added, productivity, and sectoral competitiveness can be considered effective. In the years during and after the pandemic, due to the fluctuations in demand, many companies optimized their inventory management and increased their liquid assets, which improved the quick ratio. In these years, demand decreased and uncertainty

increased, which affected profitability. From the 2020s, changed consumer habits, increased operating costs and supply chain problems affected sales and costs.

The next major impact comes from the new regulations of the Common Agricultural Policy (CAP). In the second half of the period under review, but especially in 2020–2021, previous financial resources were exhausted, which is why many agricultural enterprises postponed long-term investments, especially in 2020–2021. The new framework and uncertainties that came into effect from 2023 influenced financing decisions, restrained investment appetite and inventory accumulation, and increased the ratio of liquid assets. The new regulations prioritized environmental sustainability, which also brought about a transformation of the inventory strategies of agricultural enterprises. Some groups of the sector had different other public obligations, such as cost increases due to the ban on active substances, technology changes or pesticide use. Most of the new regulations that came into effect from 2023, especially due to the fulfillment of sustainability expectations, caused temporary cost

increases, which affected, among other things, ROS values and liquidity indicators.

Based on the analysis, it can be concluded that the financial performance of agricultural enterprises has not improved in the past 10 years and it seems that the operation of agricultural enterprises without CAP subsidies is not sustainable in the long term, the willingness to cooperate has not increased and they are not capable of sustainable income generation. Based on the Hungarian and Polish results, it is recommended to treat certain groups of the agricultural sector separately, not at the sector level, but at the group level. Risk exposure has increased, this needs to be reduced. CAP support is a source that appears as a permanent income when repaying loans, but it is important to emphasize that its existence is not automatic either.

If we want to maintain agricultural farming, differentiated support is necessary, because if there is no source, there is no growth. Input prices are increasing to a greater extent than the output side, the increase in food prices is not fully

realized by producing agricultural enterprises, so they cannot finance investments from income alone.

Climatic factors continue to pose significant risks in the sector, e.g. the 2022 drought also restrained Hungarian investments, which reduced the need for borrowing and could result in a decrease in liquidity. There was a more stable production environment in Poland. In our country, the drought caused a decline in production, which resulted in a faster use of stocks, as well as a decrease in stocks and an improvement in the quick ratio. The 2022 drought increased the importance of financial reserves in Hungary. Overall, the drought itself had a significant impact on all actors in the agricultural sector, which reduced production efficiency and increased costs. In Poland, investment incentive programs and economic policy guidelines may have contributed to higher indebtedness, had a greater impact on the creation of short-term liabilities and the increase in external financing. A more stable economic policy also allows for the longer-term maintenance of stocks. In Poland, economic policy stability may have helped increase ROA, while in Hungary, changes in

inflation and the subsidy system affected profitability. Polish investment incentive programs and more stable economic policy may have contributed to the higher ratio. Here, economic policy interventions and subsidies may have stabilized operations, but did not necessarily improve efficiency.

The findings of my thesis are also important for mitigating and utilizing these processes. Based on the results of the research, it is recommended that Hungarian companies encourage technological investments, maintain liquidity and improve cost efficiency. In the case of Polish companies, it is advisable to maintain flexibility, reduce financing risks and optimize inventory management.

In both countries, it is justified to integrate ESG aspects into financial decisions, as well as to strengthen digitalization and sustainability innovations.

In order to assist in legislation, I also make specific proposals in my thesis.

My research results may be important for other researchers besides legislators to continue their research. The period under study is significant in several respects, and the

examination of the period of the pandemic, CAP modification, economic and climatic crises still holds outstanding potential. With the expansion and more detailed examination of the analysis, this analysis may be the beginning of a new agricultural evaluation.

5. PUBLICATION

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