Development of Financial Performance Indicators of Agricultural Enterprises in Slovakia in the Context of Legal Form of Business

Ivana Kravčáková Vozárová¹, Roman Vavrek², Rastislav Kotulič³
University of Presov¹,³, VŠB - Technical University of Ostrava²
Faculty of Management and Business¹,³, Faculty of Economics²
Konštantínova 16¹,³, Sokolská třída 33²
Prešov, Slovak Republic¹,³, Ostrava, Czech Republic²
e-mail: ivana.kravcakova.vozarova@unipo.sk¹; roman.vavrek@vsb.cz²; rastislav.kotulic@unipo.sk³

DOI: https://doi.org/10.15414/isd2022.s1.08

Abstract
Persistent difference in management results between agricultural cooperatives and business companies Slovakia is long-discussed problem. The efficiency of management in agricultural companies is gradually improving, but it still varies considerably according to organizational forms of management. Business companies were more efficiently and achieved better results over the long-term than agricultural cooperatives. The study was focused on closer examination of the time period of alleviation of these disparities, respectively, the possibilities of their further deepening. The aim of this paper was to evaluate the trend of development of indicators of financial performance of agricultural enterprises according to the legal form, in the context of increasing the differences in their management in the period after the accession of the Slovak Republic to the European Union. The paper expands the knowledge for the given area of research and thus builds on previous studies that dealt with the issue before Slovakia's accession to the European Union.

Keywords: agricultural cooperatives, business companies, disparities, financial analysis, ratio indicators, Slovak Republic

JEL Classification: Q12, O13, R12

1. Introduction
Agriculture, an important sector of the economy, is often monitored by the government and is often the subject of international disputes. In Slovakia, the structure of farms is different from that of almost any other member state of the European Union. The majority of agricultural land is farmed by big farms, with high acreage, usually under two main legal forms. On the one hand are cooperatives, which existed also before 1989. On the other hand, at the time of the transformation process, some of them were replaced by business companies (Tóth, Lančarič & Savov, 2014). By entering the new market environment after 1990, the firms embarked on a journey of complex structural, economic and social changes that were reflected in measurable improvements in only some aspects of technical performance and competitiveness. There were created new forms of business, the number of subjects increased and their average concentration decreased.

The evaluation of new forms was also studied by Hanousek, Kočenda and Mašíka (2012), who analysed the corporate effectiveness and the impact of the ownership structure after the transformation process, which was characterized by restructuring, privatization and support of the institutional reforms. Subsequently, the entry of the Slovak Republic to the European Union opened a large European agricultural market for Slovak agricultural producers, but also removed all protective barriers of the domestic market. These led to new challenges in the field of competitiveness and financial performance of the domestic agriculture (Spička, Hlavsa,
Performance measurement system is an integral part of the control and management system in the company. The results obtained help to assess the current position of the companies and the opportunities for further development by improving the economic position of agriculture (Andric and Vukovic, 2013). Company leaders are under enormous pressure to increase their company's performance. Performance assessment or benchmarking is a widely used method for corporate development and profitability enhancement. The comparison of company performances, i.e., benchmarking, is becoming more and more critical. Presently, companies mostly still use traditional financial ratios to evaluate their financial performance (Fenyves et al., 2018).

The aim of this paper was to evaluate the trend of development of indicators of financial performance of agricultural enterprises according to the legal form, in the context of increasing the differences in their management. We analysed and compared two groups of agricultural entities: agricultural cooperatives (AC) and business companies (BC). This study expanded new original research and supplemented the main paper previously published by Kravčákova Vozárová, Kotulič & Vavrek (2019).

2. Data and Methods

This analysis is based on the measuring the financial performance of agricultural companies using financial indicators, which are the first benchmarks of the financial performance of enterprises. The data for the analysis were drawn from data of agricultural companies (balance sheets, profit and loss statements) provided by the Ministry of Agriculture of the Slovak Republic in the form of information sheets on anonymized agricultural subjects. The total file included 2509 subjects of legal and natural persons with up to 19 and more than 20 employees. These information sheets captured the economic data of the agricultural entities that cultivate 81.3% of the agricultural land in Slovakia (1,930,570 ha).

For the quantification of disparities of the financial performance of the selected entities, the following ratio indicators were selected:

- Profitability indicators: return on total assets (ROA = EBIT/Total assets), return on sales (ROS = EBIT/Total sales);
- Activity indicator: days payable outstanding (DPO = Current liabilities/Total sales/number of days);
- Liquidity indicator: quick ratio (QR = (Current assets—inventory)/Current liabilities);
- Stability indicators: self-financing ratio (SFR = Equity/Total assets), interest coverage ratio (ICR = EBIT/Interest expense).

3. Results and Discussion

The results of this study are interesting especially in the context of the size of the research sample. Due to the scope of the research sample and the timeframe for the analysis, we did not record any further studies on this issue to be carried out in the Slovak Republic.

In the previous research (Kravčákova Vozárová et al., 2019) we have identified differences between subjects working in the soil in the Slovak Republic depending on their legal form. In
2015, the indebtedness of assets was higher for business companies (54.3%) than agricultural cooperatives (34.4%), which is evidence of higher economic creditworthiness of business companies in the view of commercial banks in terms of cash flow and thus repayment of long-term loans that are not covered by support from the EU. Also, according to the study of Adamišin, Kotulič and Kravčáková Vozárová (2017), the legal form can be the key factor of differences, because in the case of business companies, it allows efficient management (also by concentration of ownership of the company) a higher level of motivation, and a concentration of ownership and responsibility.

![Figure 1: Differences in selected financial indicators based on the legal form of the entity](image)

*Source: author’s calculations*

From the graphical illustration of the monitored parameters (Figure 1) we can observe several differences in their moment characteristics, which is also shown in Table 1. For all monitored parameters, there was a statistically significant difference in mean value (median, average). We note a better evaluation of business companies in the case of indicators ROA, ROS, DPO, ICR, which we attribute to some important aspects. Business companies showed better economic results, higher share of profitable enterprises and higher production. Sales of goods, whose share in revenues was twice that of agricultural cooperatives, also contributed positively to the total revenues in commercial companies (Chrastinová, 2018). The difference in the case of the DPO indicator could also be due to the fact that the values of liabilities in the BCs significantly exceeded the values of liabilities in the AC. The most significant differences between legal forms were in the structure of capital. Although foreign capital had an increasing tendency in both legal forms, its dominant position was in the BC. The more positive economic results of the business companies were also reflected in the overall creditworthiness of lending, as confirmed by the ICR indicator. However, in the case of the QR and SFR indicators, agricultural cooperatives were dominant. In the case of business companies, the lower SFR value also represented an increase in the credit risk value.
Table 1: Identification of differences through selected torque characteristics

<table>
<thead>
<tr>
<th></th>
<th>Median</th>
<th>Mean</th>
<th>DF</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>no</td>
</tr>
<tr>
<td>ROS</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>no</td>
</tr>
<tr>
<td>DPO</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>no</td>
</tr>
<tr>
<td>QR</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>no</td>
</tr>
<tr>
<td>SRF</td>
<td>yes**</td>
<td>yes**</td>
<td>yes**</td>
<td>yes*</td>
</tr>
<tr>
<td>ICR</td>
<td>yes**</td>
<td>yes*</td>
<td>no</td>
<td>yes*</td>
</tr>
</tbody>
</table>

Note:
* – statistically significant at the significance level $\alpha < 0.05$
** – statistically significant at the significance level $\alpha < 0.01$

Source: author’s calculations

Differences with the exception of the last indicator (ICR) are also observed in the distribution function of the measured values, however these disparities together with the homogeneous scattering, cannot be attributed to the development over time. An explanation could be provided by Figure 2, which shows the percentage changes of individual indicators in year-on-year terms. In all cases we observe a high variability across the whole monitored period, which is documented by e. g. the lowest coefficient of variation at 185% level (SRF indicator in the group of agricultural cooperatives).

\[\text{Figure 2: Percentage change of monitored indicators}
\]

Note: The purpose of the graph is not to point to a specific indicator, but to different developments over time as a whole group of indicators

Source: author’s calculations

An interesting finding is a significant high negative correlation of the DPO indicator with QR and SRF indicators in the case of agricultural cooperatives, while the almost perfect correlation of ROS and ROA could be assumed due to nature of their calculation (similarly for both indicators of profitability and ICR indicator). In the group of other subjects (BC) it is not possible to identify similar associations when the only strong one is the linear relationship of ICR and ROA.

On the basis of the above, we decided to identify the timeframe in which it would be expected to minimize the differences identified above. Based on the results of this analysis, it is possible
to divide the monitored indicators into two groups. The first group includes ROA and SRF, in which it is possible to assume, based on the available data, a reduction in the differences between these groups of subjects (Figure 3).

![Figure 3: Comparison of regression models for ROA and SRF](image)

In the case of ROA, it would be possible to expect the same, respectively similar results up to about 10 years with a probability of 62%, under unchanged conditions. In the case of the second indicator (also even from the graphical comparison of regression models), it is necessary to count on longer period of settlement of differences (more than 40 years). The second assumption is also supported by the high value of the coefficient of determination ($R^2 = 99.25\%$).
In the case of other 4 monitored indicators, it is not realistic to expect a narrowing of the differences between agricultural cooperatives and business companies, exactly on the contrary (Figure 4). We expect the differences between these two legal forms to increase in the future, especially at the level of the QR and ROS indicators. In the long term, business companies have been achieving higher efficiency and added value creation. Sales of goods, which were several times higher than in agricultural cooperatives, were also an important aspect of revenues in business companies. The persisting differences are also contributed to by the higher volume of investment aid that has been allocated to business companies, which supports the long-term restructuring of production and thus the sustainability of agricultural production. On the other hand, agricultural cooperatives were granted more non-investment aid. Differences in liquidity may also be due to the fact that investment aid requires self-financing by business companies and liquidity management can be even more complicated.

Persistent differences in economic results were caused by the impact of the formation of business companies, which mainly originated from the creditworthy parts of the property of the former...
agricultural co-operatives without adequately taking over liabilities to banks and other business partners, and without compensation of shares, which determined the lower production-cost ratio (MPRV SR, 2012). However, the agriculture co-operative as a legal form of business is still attractive to farmers. Despite the transformation of agricultural co-operatives into business companies, such co-operatives exist in Slovakia that fulfill their role in the agrosector and are even in profit. These results are also consistent with the findings of Adamišin et al. (2017), whose conclusions are related to economic theory and the phenomenon known as the principal–agent problem. The analysis results show that in addition to the factors of production (labor, capital, and natural resources), agricultural enterprises also need subjective assumptions such as imagination, ambition, willingness to bear risk, better organizational and management skills, patience, and a sense of innovation.

The need for innovation as well as innovative approaches to management is becoming a necessity for all entities, and agriculture is no exception. Innovation is now seen as a source of cross-sectoral competitiveness linked to rapid technological development to which companies must respond flexibly. The basis is to create conditions for establishment of an innovative environment in agricultural enterprises through support of employee innovative behavior in an environment of information saturation (Jankelová and Joniaková, 2021). In such an era when innovation is paid great attention, intellectual capital plays an increasingly important role in the development of enterprises. First, agricultural companies should establish the concept of intellectual capital, and strengthen its management. Second, they should increase the investment in intellectual capital and take full advantage of the unique resources in the process of value generation (Xu and Zhang, 2021).

4. Conclusion

In this study, we examined trend of development of indicators of financial performance of agricultural enterprises according to the legal form, in the context of increasing the differences in their management. We found that in the case of ROA, it would be possible to expect the same, respectively similar results up to about 10 years with a probability of 62%, under unchanged conditions. In the case of the SFR indicator, it is necessary to count on longer period of settlement of differences (more than 40 years). In the case of other 4 monitored indicators, it is not realistic to expect a narrowing of the differences between agricultural cooperatives and business companies, exactly on the contrary. If data will be available for the following years, panel (data) analysis can deliver more accurate results that allow to analyze the trend in these indicators and their dynamic changes in the context of estimating the development disparities in the financial performance of companies both legal forms.

However, it can be still debated whether is the legal form, which to such a significant extent determines the difference in the financial performance of agricultural enterprises even after Slovakia's accession to the European Union. Better indicators of financial performance in business companies can be determined not only by different approaches to corporate governance, but also by the consequence of a better starting situation in the past (compared to agricultural cooperatives). Therefore, further analyzes will also focus on measuring the differentiated economic performance of entities according to other criteria in order to more objectify the obtained results.

Acknowledgements
This research was funded by the Scientific Grant Agency of the Ministry of Education, Science, Research, and Sport of the Slovak Republic and the Slovak Academy of Sciences, grant number VEGA 1/0648/21; and by the Cultural and Educational Grant Agency of the Ministry of
References


