

Article

Complex Financial Analysis of Agricultural Enterprises in the Southern Plain Region

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Abstract: In order for an agricultural enterprise to be successful in the long run, it is very important to know and continuously monitor the farming processes, to see the connections and their impact on each other. In a strong economic competition, only a company can survive which responds appropriately to change and takes into account the external and internal environment, analyzes their operation and adapts its decisions accordingly. Accession to the European Union has also created new opportunities for agricultural SMEs, which will greatly affect the success of the business. In my study, I explore the main changes that have taken place since accession through the analysis of the balance sheet data and indicators of these agricultural enterprises.

Keywords: SMEs; subsidies; agricultural enterprises; balance sheet;

Classification-JEL: Q19, R00

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INTRODUCTION

Small and medium-sized enterprises (SMEs) play a significant role in the European economy. With more than 20 million SMEs employing around 87 million people, they constitute a substantial portion of the workforce in the competitive sphere. In Hungary, the number of SMEs is higher than the European Union average. Although the average Hungarian SME typically operates with fewer employees, their employment impact is significant due to their large numbers (Strategy of Small and Medium-sized Enterprises 2014-2020, 2013). Thus, the economic role of SMEs is significant in the Hungarian economy as well, especially considering their participation in the labor market. While SMEs provide job opportunities for nearly two-thirds of those employed in the entrepreneurial sector, they contribute 46% of the added value, 42% of the net revenue, and 30% of the national economic investments to the overall performance of operating businesses (Hungarian Central Statistical Office, 2018).

To develop a reliable understanding of businesses, it is essential to assess their financial status, for which balance sheet analysis serves as a suitable guide. According to Bíró et al. (2001), the task of balance sheet analysis is to uncover the financial conditions of businesses and the changes that occur within them. They emphasize two main methods of balance sheet analysis: comprehensive balance sheet analysis and detailed analysis of individual balance sheet items. The main objective of the study is to identify correlations between changes in the situation of businesses and the support they receive since Hungary's accession to the European Union.

MATERIAL AND METHOD

The first step of the study involved compiling and analyzing the balance sheets of businesses in the Southern Great Plain Region. The database was constructed from two sources: firstly, the database of the Ministry of Justice, Company Information and the Service Assisting Electronic Company Procedures, and secondly, the list of support for corporations disclosed by the Hungarian State Treasury.

Based on data from 207 businesses in the Southern Great Plain Region, I calculated indicators. Drawing on previous research, businesses were delineated

based on those that received support every year between 2005 and 2022 (excluding 2004 due to partial-year data and considering 2022 as the closing year, as data for businesses were available until that year). Only businesses established before 2003 were considered to compare their pre-EU accession situation with the post-accession situation. Only those still operating in 2022, not undergoing liquidation or bankruptcy proceedings, were included, and their data were accessible in the public company database.

The obtained database was categorized into micro, small, and medium-sized enterprises. Large enterprises were excluded from the sample as the focus was on the SME sector. For micro-enterprises, it was required to have at least one employee on average. Finally, businesses that received an average of at least 60 million HUF in support between 2005 and 2022 were considered.

Comprehensive balance sheet analysis method was employed, with the first step being the examination of the internal ratios of asset and liability groups for each year. Total assets and liabilities served as reference points for determining internal ratios.

Following balance sheet analysis, the examination of the financial position of agricultural enterprises was conducted. Vertical (calculated from data appearing on the liability side) and horizontal (expressing the relationship between certain items on the asset and liability side) capital structure indicators were used for the analysis of the financial position. Among vertical indicators, capital adequacy, the proportion of liabilities, and changes in capital tension were examined for selected years, while horizontal indicators illustrated the evolution of two versions of asset coverage. To uncover the financial position of enterprises, the debt-to-equity ratio, equity ratio, and debt coverage of the debt portfolio were calculated, while liquidity ratios such as liquidity ratio and quick ratio were computed.

ANALYSIS OF THE COMPOSITION OF BALANCE SHEETS OF EXAMINED ENTERPRISES

The proportion of fixed assets remained around 50% for all examined years, with the highest proportion observed before EU accession, followed by a slight decrease, but no significant change was noted for the year 2022. Within fixed assets, there is a decrease in intangible assets at the regional level. According to BÍRÓ et al. (2001), it is positively evaluated if the internal composition of intangible assets shifts towards marketable intellectual products.

In the case of tangible assets, the percentage ratio remained relatively stable. The combined proportion of categories within tangible assets, namely real estate and related intangible assets, technical equipment, machinery, vehicles, other equipment, machinery, vehicles, breeding animals, and investments, remained around 50%, both before and after EU accession.

The proportion of invested financial assets includes financial assets that the enterprise invests in with the aim of generating sustainable income or achieving influencing, control, or monitoring opportunities, as formulated by accounting law. In this interpretation, deteriorating values can be observed at the regional level in the examined years, with no improvement observed after EU accession and only a slight increase by 2011, with noticeable improvement seen from 2014 onwards, reaching 3.4% by 2022.

The evolution of current assets can also be considered balanced over the examined years, averaging around 45%. Within current assets, there is a slight decrease in inventories. The increase in receivables can be observed regionally, reaching approximately 15% by 2011 and 2012, followed by a decrease in the next two examined years.

The proportion of securities decreased by nearly half in the year following EU accession, then nearly tripled by 2022 compared to the 2007 value. The proportion of cash and cash equivalents nearly doubled from 2003 to 2022, which can be related to the decrease in inventories.

Examination of the liability side of the balance sheet reveals a continuous increase in the proportion of equity and a simultaneous decrease in the proportion of liabilities in the region over the examined years, which is favorable as it indicates a decrease in the indebtedness of businesses and their ability to finance themselves from equity (Table 3).

Within equity, the retained earnings increased from an initial negative value to an average of 7% by 2011 and 2012, then reached an average of 5% by 2014 (there is no data for 2022 as it was phased out in 2016). The growth is more pronounced in retained earnings, exceeding 45% by 2022. These values indicate that businesses in the region are becoming increasingly profitable, leading to an increase in the proportion of equity, despite the decrease in subscribed capital.

Regarding long-term liabilities, the long-term indebtedness of businesses continuously decreased, which is positively evaluated. There is an increase in short-term liabilities, which was around 21% before EU accession, reaching just under 27% by 2007 and almost reaching pre-accession levels only in 2012.

In terms of reserves created for covering unexpected expenses, the proportion of this resource line increased for agricultural enterprises in the region and reached approximately 0.3% by 2012, then decreased to around 0.03% by 2022.

ANALYSIS OF THE FINANCIAL AND ASSET SITUATION OF AGRICULTURAL ENTERPRISES

The solvency ratio (also known as equity ratio), which represents the proportion of equity to total resources, was favorable in the region in the examined years, with continuous growth observed until 2014. However, by 2022, the aggregated value of the indicator decreased to 35%, which is unfavorable, as a ratio lower than 30% can lead to a critical situation for the respective agricultural enterprise.

Regarding the proportion of liabilities, I examined the ratio of three items (deferred, long-term, and short-term liabilities) to the balance sheet total. The situation was favorable in the region until 2014, with a continuous decrease observed. However, Siklósi and Veress (2011) highlight that the stabilization or increase of this ratio is not necessarily a negative phenomenon, as it can result from expanding activities financed by credit. This opinion might be reflected in the average data for 2022, as the proportion of liabilities increased to 63% compared to previous years, attributable to most SMEs initiating and executing investment projects using bank pre-financing.

The debt-to-equity ratio, which shows the relationship between liabilities and equity, remained somewhat stable in the region, averaging around 200% until 2012, then decreasing to 67% in 2014, indicating an improved situation for enterprises. Subsequently, a significant increase was observed again by 2022, reaching 103%.

Two types of coverage for invested assets were calculated as horizontal indicators. In the first case, the change in the ratio of equity to invested assets was examined, while in the second case, equity was supplemented by the value of long-term liabilities. Favorable values are observed in both indicators in the region, with average results of around 200% until 2014. In 2022, the values of these indicators increased significantly, reaching over 500%, which may not necessarily be negative if enterprises are undertaking investments.

To present the financial stability of agricultural enterprises, I calculated indicators related to their debt and liquidity (Table 5).

For the debt-related indicators, equity and long-term liabilities formed the basis of comparison. It should be noted that in scenarios where a company did not have long-term liabilities, resulting in zero values or undefined results due to division by zero, such cases were excluded from the calculation of debt-related indicators. In the region, 38 enterprises did not have long-term liabilities in 2003, increasing to 57 by 2022, with some fluctuations.

Regarding the debt ratio, long-term liabilities were compared to the sum of equity and long-term liabilities. After accession, there was a decrease in debt in 2007, followed by a significant increase in 2011 compared to 2007 in the region, attributed to the drought of 2010, as many enterprises financed their activities for the next year from credit due to crop losses.

Regarding the equity ratio, which is the ratio of equity to the sum of equity and long-term liabilities, it increased in the region by 2007, closely related to the decrease in the debt ratio and the increase in debt coverage, i.e., the ratio of equity to long-term liabilities. However, by 2011, the situation reversed, with a significant decrease in the equity ratio and a corresponding increase in the debt ratio, although debt coverage continued to increase. This necessitated an individual examination of enterprises and the exclusion of outliers, resulting in a debt coverage ratio of 1333%, almost halving, and a decrease from 2007 to 2011. A similar cyclical pattern can be observed from 2014 to 2022 as seen between 2007 and 2011.

In calculating liquidity indicators, I examined the ratio of liquid assets (current assets, inventories) to short-term liabilities. In the case of the liquidity ratio, the ratio of current assets and short-term liabilities, and in the case of the quick ratio, the ratio of liquid assets with inventories deducted to short-term liabilities were examined. The same trend is observed in both indicators in the region. The liquidity of agricultural enterprises in the region has been continuously increasing over the examined years, although less pronounced changes are observed in the years following EU accession and in comparison to 2003. The most outstanding regional result is observed in 2022, with the highest value for the indicator across the examined years.

CONCLUSIONS

From the balance sheet data of agricultural enterprises in the Southern Great Plain Region receiving agricultural and rural development support, it can be observed that the proportions of the enterprises' balance sheet components remained relatively stable compared to the pre-European Union accession years. There are no outstanding values among the items. Analysis of the data shows that the indebtedness of the enterprises has decreased, and the enterprises in the region are becoming increasingly profitable. As a result, the proportion of equity is increasing, despite a decrease in subscribed capital. It is also a positive trend that the long-term indebtedness of the enterprises is continuously decreasing, and their liquidity is increasing.

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Table 1
Scope of indicators used for the analysis of financial and asset position

Vertical indicators of financial position		
$\text{Capital adequacy ratio} = \frac{\text{Equity}}{\text{Total capital}}$	$\text{Debt - to - equity ratio} = \frac{\text{Liabilities}}{\text{Total capital}}$	$\text{Debt leverage} = \frac{\text{Liabilities}}{\text{Equity}}$
Horizontal indicators of financial position		
$\text{Coverage of invested assets (A)} = \frac{\text{equity}}{\text{invested assets}}$	$\text{Coverage of invested assets (B)} = \frac{\text{equity} + \text{long - term liabilities}}{\text{invested assets}}$	
Financial indicators		
$\text{Debt ratio} = \frac{\text{long - term liabilities}}{\text{long - term liabilities} + \text{equity}}$	$\text{Equity ratio} = \frac{\text{equity}}{\text{equity} + \text{long - term liabilities}}$	$\text{Debt coverage} = \frac{\text{equity}}{\text{long - term liabilities}}$
$\text{Liquidity ratio} = \frac{\text{current assets}}{\text{short - term liabilities}}$	$\text{Quick liquidity ratio} = \frac{\text{current assets} - \text{inventory}}{\text{short - term liabilities}}$	

Source: compiled by the author based on BÍRÓ et al. (2001)

Table 2
Changes in Asset Items of Enterprises in the Southern Great Plain Region

	2003	2007	2011	2012	2014	2022
A. Invested assets	54.29%	51.74%	52.53%	51.85%	51.80%	53.05%
I. Intangible assets	0.38%	0.28%	0.19%	0.16%	0.14%	0.09%
II. Tangible assets	51.16%	48.98%	49.62%	49.20%	48.52%	49.56%
III. Invested financial assets	2.74%	2.47%	2.73%	2.49%	3.14%	3.40%
B. Current assets	44.83%	45.87%	45.22%	46.17%	45.69%	44.80%
I. Inventories	24.58%	24.21%	20.81%	21.23%	18.79%	18.40%
II. Receivables	12.30%	14.45%	14.91%	14.66%	13.27%	12.30%
III. Securities	1.79%	1.09%	1.16%	1.46%	2.24%	2.65%
IV. Cash and cash equivalents	6.16%	6.12%	8.35%	8.82%	11.40%	11.46%
C. Active temporal provisions	0.88%	2.39%	2.24%	1.99%	2.51%	2.14%
Total assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Own calculations

Table 3
Changes in Liabilities Items of Enterprises in the Southern Great Plain Region

	2003	2007	2011	2012	2014	2022
D. Equity	58.05%	59.60%	67.26%	70.13%	71.48%	75.74%
I. Subscribed capital	22.77%	13.43%	10.37%	9.70%	6.31%	6.62%
II. Subscribed but not paid-up capital (-)	0.03%	0.00%	0.00%	-0.04%	0.00%	0.00%
III. Capital reserve	12.94%	11.26%	11.65%	11.50%	11.57%	12.60%
IV. Retained earnings	14.16%	15.14%	20.18%	24.47%	37.18%	45.12%
V. Restricted reserves	5.90%	9.59%	14.10%	13.99%	9.57%	6.60%
VI. Sales reserves	3.89%	3.92%	3.07%	3.61%	1.94%	1.91%
VII. Profit or loss for the year	-1.63%	6.25%	7.89%	6.90%	4.94%	-
E. Target reserves	0.02%	0.06%	0.33%	0.27%	0.06%	0.03%
F. Liabilities	40.52%	38.57%	31.17%	28.44%	27.42%	23.26%
I. Deferred liabilities	0.65%	1.15%	0.63%	0.45%	1.22%	0.16%
II. Long-term liabilities	18.91%	10.50%	7.96%	6.49%	8.53%	6.33%
III. Short-term liabilities	20.96%	26.91%	22.57%	21.50%	17.67%	16.77%
G. Passive temporal provisions	1.41%	1.78%	1.24%	1.16%	1.04%	0.97%
Total sources	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Own calculations

Table 4
Indicators Characterizing the Financial Position of Enterprises in the Southern Great Plain Region

	2003	2007	2011	2012	2014	2022
Capital adequacy	51.15%	56.57%	62.40%	65.54%	67.90%	35.35%
Share of liabilities	47.66%	41.83%	35.92%	33.10%	31.04%	63.36%
Capital strain	205.31%	211.34%	190.17%	188.59%	67.42%	102.84%
Coverage of invested assets (A)	215.61%	224.02%	142.87%	215.66%	231.69%	557.59%
Coverage of invested assets (B)	379.68%	254.13%	161.22%	230.66%	250.17%	573.09%

Source: Own calculations

Table 5
Indicators Characterizing the Financial Situation of Enterprises in the Southern Great Plain Region

	2003	2007	2011	2012	2014	2022
	Debt metrics					
Debt-to-equity ratio	36.75%	22.72%	98.55%	17.82%	12.38%	10.01%
Equity ratio	63.25%	77.28%	1.45%	82.18%	87.62%	89.99%
Debt coverage ratio	843.26%	1874.04%	2632.47%	3755.36%	1594.40%	2695.10%
	Liquidity ratios					
Liquidity ratio	438.14%	444.18%	868.68%	1445.21%	961.31%	2385.67%
Quick ratio	290.34%	289.19%	614.71%	1059.23%	750.74%	1787.45%

Source: Own calculations