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SCIENTIFIC PAPER

THE ECONOMIC SITUATION OF HUNGARIAN CROP PRODUCTION ENTERPRISES, ESPECIALLY IN HAJDÚ-BIHAR COUNTY

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Abstract: *Increasing the competitiveness of Hungarian crop production plays a key role in moving forward at the international level. However, improving efficiency and profitability is essential in this regard. The natural resources in Hungary provide an excellent opportunity for crop production. About 8% of the arable land in Hungary (a total of 4.3 million hectares) belongs to farmers in Hajdú-Bihar County. This research is based on secondary data that can be found in the HCSO and EMIS databases. HCSO data was used for the comparison of national and county data characterising crop production, while the EMIS database was used to process the financial data of enterprises dealing with field crop production. The Hungarian sample size is 853, of which 69 enterprises are from Hajdú-Bihar County. The aim of this study is to assess the profitability, assets and financial situation of arable crop production enterprises operating in Hajdú-Bihar County as a function of national average data. Based on the examined profitability indicators (operating ROS and ROA), it was established that the enterprises in Hajdú-Bihar County are profitable, even in a national context. In terms of operating ROS, the farms in the examined county were able to achieve a 3.6 percentage point higher value due to their more efficient cost management, despite having a similar level of technology compared to businesses spanning across the entire country. The proportion of farms with the lowest leverage ratio (<20%) is 16 percentage points higher at the county level than at the national level. In addition, almost 70% of the enterprises operating in Hajdú-Bihar County have excellent liquidity. This rate is 50% at the national level.*

Keywords:*crop production, enterprises, economic situation, profitability, liquidity*
JEL code: M11; Q12

INTRODUCTION

In 2019, Hungary accounted for 2.1% of the European Union's crop production. 4.4% of cereals and 5.4% of industrial crops grown in the European Union were produced in Hungary. These crop products represented a significant share of the country's total gross output (cereals: 26%, industrial crops: 12%) (HCSO, 2020b).

An increasing number of researchers started to examine the role of competitiveness recently, which is a must for the Hungarian crop production sector in order to be able to move forward in international terms. According to Takácsné György (2020), farm size does not necessarily determine whether a company will be competitive or not. Instead, it is possible for small- or large-scale farms to perform precision farming and sustainability in addition to competitive production. Felkai et al. (2013) suggest that, within economic efficiency, the purchase prices of plant products may represent the main efficiency reserves. In addition, expertise should also be improved.

In Hungary, the income situation of farmers is improved by subsidies. For this reason, farmers consider the opportunities offered by the Common Agricultural Policy to be of key significance. Based on a survey conducted in the European Union ("Europeans, Agriculture and the CAP"), 25% of Hungarian enterprises consider the number of subsidies currently available to be too low. Also, the number of respondents was 6 percentage points higher than between

2017-2020. In addition, 44% of respondents think that further increases should be made during the next 10 years (EC, 2020).

However, income generation is affected not only by subsidies but also by natural resources. Hungary is in a favourable position with regard to the quality of arable land, weather conditions and soil fertility. At a national level, the approximately 325 thousand hectares of arable land in Hajdú-Bihar County is considered to have one of the highest quality (Vinogradov – Takácsné György, 2019; HCSO, 2020a). For this reason, the study focuses on the assessment of the national economic situation of enterprises producing cereals (except for rice), legumes and oilseeds in Hajdú-Bihar County.

The aim of this paper is to analyse the profitability, asset and financial situation of arable crop production companies operating in Hajdú-Bihar County as a function of national average data.

MATERIALS AND METHODS

Secondary databases were used to prepare the study. General data (national and county average yields, changes in input and output prices, etc.) and statistical data which describes the situation of agriculture were collected from the HCSO database. The financial data included in the reports of Hungarian field crop companies were retrieved from the EMIS database. The scope of activities of the examined enterprises (as their main activity) was limited to the cultivation of cereals (except for rice), legumes and oilseeds in accordance with the International Standard Classification of All Economic Activities. In addition, only data from companies that could be found in the database each year were included in the analysis. Additional filtering methods were also identified, such as the fixed asset ratio of at least 20%, which also contributed to the removal of outliers. Accordingly, the sample number is 853. After the establishment of the county classification, the authors examined the economic situation of farmers operating in Hajdú-Bihar County. The number of enterprises in the county is 69, which we also placed as a function of national average data. Descriptive statistical methods (mean, standard deviation, relative standard deviation, inter-class distribution) were used to process the data. In addition, correlation analysis was used to examine the relationship between each efficiency indicator and the total assets and net sales revenue.

Various efficiency indicators were derived from the financial data, using the results of operating activities to analyse the operation of enterprises. The calculated efficiency indicators were used to assess the profitability (operating ROS, ROA and assets (fixed assets ratio), as well as the financial situation (leverage, quick liquidity ratio) of the examined companies.

The ROA and quick liquidity ratio were measured by Malik et al. (2016). While the former expresses operating profit at unit value of assets, the latter expresses short-term solvency. In calculating this efficiency indicator, the value of accrued expenses was also taken into account. Operating ROS was also used by Maziarczyk (2020), as it determines the profit of operation that can be achieved with unit revenue. Fixed assets ratio – as an important efficiency indicator of the asset situation of an enterprise – was based on the study of Nguyen – Nguyen (2020). The leverage ratio determines the debt stock per total assets, which was also applied by Fenyves et al. (2020). Similarly to Nguyen – Nguyen (2020) and Fenyves et al. (2020), farm scale was based on total assets. In addition we also determined the farm scale by net sales revenue.

RESULTS AND DISCUSSION

Factors affecting production value and production cost

A distinction is made between income factors which can be directly influenced by companies and those which cannot be influenced. The former group of factors mostly concern intensity (changes in production costs), while the latter refer to the increase in yield and its selling price (changes in production value), as well as weather extremities (e.g. drought, hail). It should be emphasised that subsidies play a significant role as an income supplement for enterprises (Apáti et al., 2018). Before presenting the obtained results, we consider it necessary to examine the changes in the sales prices and price indices of the main crop products, as well as the changes in the price levels of the most important expenditures. In addition, specific yields to be obtained in Hajdú-Bihar County are also presented.

Figure 1 shows the sales prices of the most important crop products in field crop production. The highest average price was shown in the case of sunflower seeds (32.68 eurocents/kg) between 2015 and 2019. There was no significant difference between the sales prices of wheat, maize and barley during the examined period.

Figure 1. Changes in the prices of the main crop products (2015-2019)
Source: HCSO, 2020a

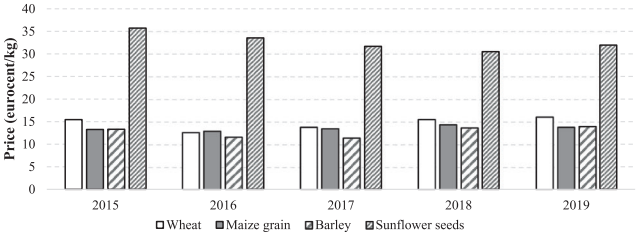
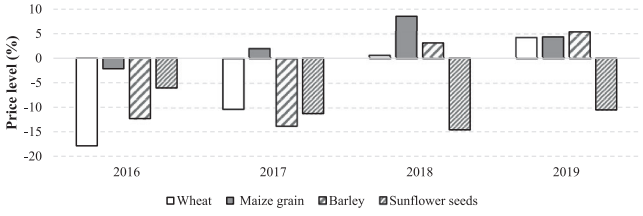


Figure 2 shows the yearly change in the prices of the main crop products. Compared to the base year of 2015, the price of maize increased the most in 2018 (by almost 9%). In contrast, in the same year, the price of sunflower seeds decreased by almost 15%. However, it should be noted that the selling price of sunflower showed a significant decrease during the examined period. The most unfavourable wheat price level was observed in 2016.

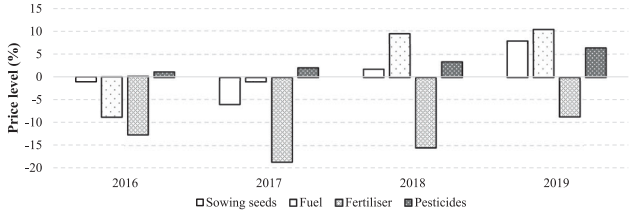
Figure 2. Changes in the price level of the main crop products (2015-2019) (2015=100%)



Source: HCSO, 2020a

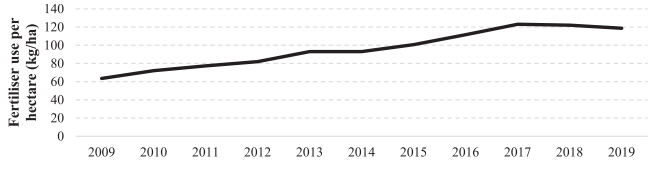
In crop production, appropriate intensification (i.e. proper input levels) plays a key role in increasing yields per unit area (Apáti et al., 2018). The most important expenditures include seeds, fertilisers and pesticides, the price indices of which varied during the examined period. While fertiliser use per hectare has steadily increased (nearly doubled) over the past period (Figure 4), the price level of fertiliser has shown a significant decline compared to 2015. An increasing trend was observed in the price index of plant protection products compared to the base year. In the case of sowing seeds, the most favourable change in the price level was observed in 2016 compared to 2015 (Figure 3).

Figure 3. Changes in the price level of the main expenditures 2015-2019 (2015=100%)



Source: HCSO, 2020a

Figure 4. Specific fertiliser use in Hungary (2015-2019)



Source: HCSO, 2020a

Hungary has excellent soil conditions (especially in Hajdú-Bihar County), good productivity and weather for crop production. In addition, Hungary also has the highest land prices. In 2019, one hectare of arable land cost nearly 7.2 thousand EUR, which was an increase of about 8% compared to 2018. In comparison with the national average (5 thousand EUR/ha), the price of arable land was 42% higher in this county (HCSO, 2020c). When comparing the yield averages of Hungary and Hajdú-Bihar County between 2015-2019, the largest difference is shown in the specific yield of maize. The county average value (8.3 t/ha) was 3 tons higher per hectare than the national average. The average yield of sunflower (3.25 t/ha) in Hajdú-Bihar County was slightly higher than the national value (2.89 t/ha) (HCSO, 2020a).

The total assets and net sales revenue of the examined enterprises

Data on the arable land of the examined enterprises were not available, i.e. their size was determined on the basis of the total assets and sales revenue. For this reason, the economic situation of these companies will be assessed accordingly.

The farm size of the enterprises is classified into three categories by Act XXXIV of 2004 (expressed in EUR): micro, small and medium. The different inter-class distribution were designed accordingly. The financial data expressed in HUF were converted into EUR on the basis of the Hungarian National Bank's (HNB) average HUF/EUR exchange rate between 2015-2019 (314.94 HUF/EUR). Enterprises with a total assets or net sales of less than 2 million EUR are considered to be micro-enterprises. Small businesses include enterprises with a total assets and net sales between 2 million – 10 million EUR. Companies with assets between 10 million – 50 million EUR or sales between 10 million and 43 million EUR are medium-sized enterprises. Companies above this category are large corporations that were not included in this research, i.e. this class interval was not even indicated.

In Hungary, the proportion of companies with assets below 2 million EUR was 52%. This value was similar in Hajdú-Bihar County. The proportion of small farms is 43% at the national level and 7% lower at the county level. While almost 6% of Hungarian farms can be classified in the medium-sized category, their proportion is 10% in Hajdú-Bihar County. Based on the average values, the enterprises in Hajdú-Bihar County had 7% higher amount of assets during the examined period in comparison with the national average.

Table 1. The total assets of enterprises in Hungary and Hajdú-Bihar County (averaged over the period between 2015-2019)

SME category	Total assets (thousand EUR)	Hungary		Hajdú-Bihar County	
		Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
Micro	**0 - 1 999**	442	51.8	37	53.6
Small	**2 000 - 3 999**	226	26.5	20	29.0
	4 000 - 5 999	80	9.4	1	1.4
	6 000 - 7 999	41	4.8	2	2.9
	8 000 - 9 999	16	1.9	2	2.9
Medium	**10 000 < =**	48	5.6	7	10.1
Total		853	100.0	69	100.0
Mean (thousand EUR)		3 164	-	3 379	-
Relative standard deviation (%)		122	-	123	-

Source: Own calculations based on EMIS data, 2020

While almost 75% of the examined companies have a revenue of less than 2 million EUR on a national scale, this proportion is 81% in Hajdú-Bihar County. Thus, these farms belong to the micro-sized category. Farms with a higher average value are small, accounting for 24% at the

national level and 19% at the county level. At the national level, 1% of farms belong to the top category, with no farm from Hajdú-Bihar County.

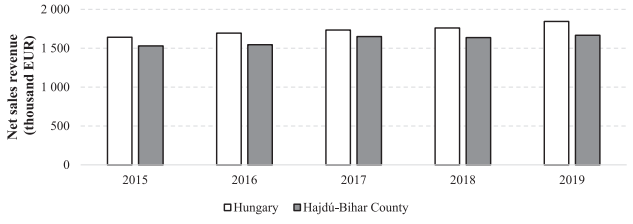
Table 2. Net sales revenue of the enterprises of Hungary and Hajdú-Bihar County (averaged over the period between 2015-2019)

SME category	Net sales revenue (thousand EUR)	Hungary		Hajdú-Bihar County	
		Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
Micro	**0 - 1 999**	636	74.6	56	81.2
Small	**2 000 - 3 999**	140	16.4	8	11.6
	4 000 - 5 999	43	5.0	2	2.9
	6 000 - 7 999	17	2.0	3	4.3
	8 000 - 9 999	6	0.7	0	0.0
Medium	**10 000 <=**	11	1.3	0	0.0
Total		853	100.0	69	100.0
Mean (thousand EUR)		1 735	-	1 606	-
Relative standard deviation (%)		118	-	93	-

Source: Own calculations based on EMIS data, 2020

Figure 5 shows sales revenue. It can be observed that the enterprises in Hajdú-Bihar County achieved a slightly lower value (by 8% on average) each year, which can be attributed to the higher proportion of micro-enterprises at the county level.

Figure 5. Net sales revenue of the examined enterprises on a yearly basis



Source: Own calculations based on EMIS data, 2020

The proportion of micro-enterprises is almost similar at a national level and in Hajdú-Bihar County. In addition, within Hajdú-Bihar County, the proportion of small enterprises is higher (54%) than at the national level (48%).

There are 158 enterprises with the highest income (over 250 EUR) in Hungary, 10 of which are located in Hajdú-Bihar County. Based on the consolidated assessment of the period between 2015-2019, farms in Hajdú-Bihar County realized 11% lower incomes (Table 3).

Based on the yearly income data, it can be seen that in 2015 and 2016, enterprises in Hajdú-Bihar County had significantly (25 and 38%, respectively) lower EBIT compared to the national average values. In 2017, due to more favourable economic and weather conditions, the average income at the county level was higher than the national average.

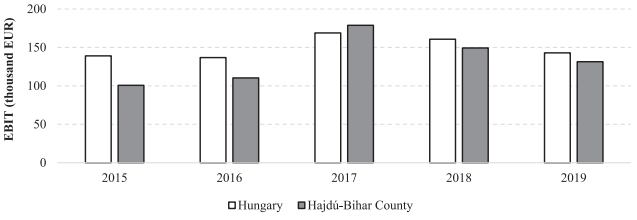
Table 3. Income of enterprises in Hungary and Hajdú-Bihar County based on their operational results (EBIT) (averaged over the period between 2015-2019)

EBIT (thousand EUR)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
0 - 49	290	34.0	22	31.9
50 - 99	170	19.9	18	26.1
100 - 149	110	12.9	10	14.5
150 - 199	64	7.5	6	8.7
200 - 249	61	7.2	3	4.3
250 <=	158	18.5	10	14.5
Total	853	100.0	69	100.0
Mean (thousand EUR)	150	-	134	-
Relative standard deviation (%)	156	-	197	-

Source: Own calculations based on EMIS data, 2020

Subsequently, in 2018 and 2019, farms in Hajdú-Bihar County achieved less favourable income compared to the national averages (Figure 6).

Figure 6. Yearly income of the examined enterprises



Source: Own calculations based on EMIS data, 2020

Of the various profitability indicators, the development of the operating ROS is examined first. Nearly two thirds of the farms in Hungary and Hajdú-Bihar County reached a ROS value between 0-15%. In addition, the proportion of farms with operating ROS below 0% and above 20%, both at the county and the national level. Most of the companies in Hungary and Hajdú-Bihar County belonging to the top category are small in size, but the amount of assets of each farm is almost twice as high at the county level than at the national level. During the examined period, county farms achieved 3.6 percentage points higher operating ROS on average, which can be explained by their more efficient cost management (Table 4). No significant correlation was found between the operating ROS and the total assets ($r = 0.040$; $p = 0.243$). The same refers to the correlation between operating ROS and revenue ($r = 0.045$; $p = 0.190$).

In the first two years, Hungarian companies were able to produce more cost-effectively, but from 2017, the farms of Hajdú-Bihar County had a higher operating ROS. The most significant difference could be shown in 2019, when the national average was negative, while the county-level average was 7.5%. As a result, there was an increasing proportion of farms that were able to achieve low incomes due to high

Table 4. Operating ROS of enterprises in Hungary and Hajdú-Bihar County (averaged over the period between 2015-2019)

Operating ROS (%)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
<0	106	12.4	8	11.6
0 - 4,9	187	21.9	17	24.6
5 - 9,9	218	25.6	20	29.0
10 - 14,9	132	15.5	8	11.6
15 - 19,9	90	10.6	7	10.1
20 < =	120	14.1	9	13.0
Total	853	100.0	69	100.0
Mean (%)	5.3	-	8.9	-
Relative standard deviation (%)	1148	-	168	-

Source: Own calculations based on EMIS data, 2020

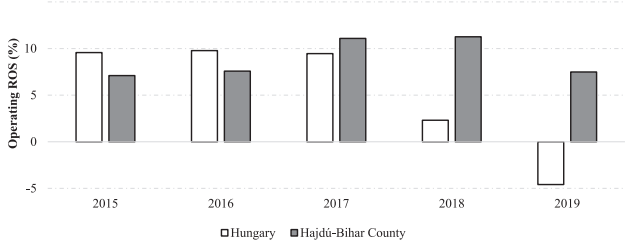
Table 5. ROA values of enterprises in Hungary and Hajdú-Bihar county (averaged over the period between 2015-2019)

ROA (%)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
<0	99	11.6	8	11.6
0 - 4.9	334	39.2	31	44.9
5 - 9.9	270	31.7	20	29.0
10 - 14.9	102	12.0	7	10.1
15 - 19.9	26	3.0	2	2.9
20 < =	22	2.6	1	1.4
Total	853	100.0	69	100.0
Mean (%)	5.6	-	4.6	-
Relative standard deviation (%)	161	-	146	-

Source: Own calculations based on EMIS data, 2020

costs, thereby significantly affecting the arithmetic mean (Figure 7).

Figure 7. Yearly operating ROS of the examined enterprises

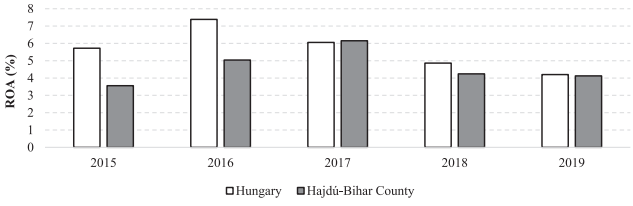


Source: Own calculations based on EMIS data, 2020

Examining the ROA values of the enterprises in Hungary and Hajdú-Bihar County, the proportion of national and county-level farms was similar between those below 0% (12%) and those between 0-15% (83-84%). The most profitable category involves 26 companies nationwide, of which one farm is located in Hajdú-Bihar County. The most profitable farms in Hungary are mostly micro-enterprises, while the farms in Hajdú-Bihar County can be considered small farms. During the examined period, enterprises operating in the given county achieved one percentage point lower value on average (Table 5). The performed correlation analysis showed a weak negative, but significant ($r = -0.060$; $p = 0.080$) correlation between ROA and the total assets. This correlation shows that lower capital efficiency (lower ROA) can be achieved in parallel with the increase in farm size. In contrast, Takácsné György (2020) pointed to the opposite. In order to improve competitiveness, in addition to plant size, it is also necessary to increase capital efficiency and technological standards. No statistically significant correlation was found between ROA and sales ($r = 0.001$; $p = 0.965$).

The ROA of the examined enterprises varied in each year. While the national averages were significantly higher in 2015, the examined farms reached a nearly similar ROA value both at the county and the national level by 2019. However, this change in the ROA value may also be due to area-based payments withdrawn from farms operating on more than 1200 hectares. In addition, the amount of basic subsidies has increased at a lower rate in recent years than at the beginning of the examined period (Keszthelyi, 2017; Keszthelyi – Kis Csatári, 2018; 2019; 2020).

Figure 8. Yearly ROA values of the examined enterprises



Source: Own calculations based on EMIS data, 2020

When comparing the fixed assets ratio of the examined enterprises, the county average is similar to the national average. The distribution of farms with a 20-60% share of fixed assets is higher in Hajdú-Bihar county (83%) than at the national level (75%). In addition, the average value of assets invested at the county level is about 97 thousand EUR higher than the national average. There is a minimal difference between the national and Hajdú-Bihar county average values with regard to the proportion of fixed assets above 80%. Mostly small enterprises belong to this category. As a result, it can be concluded that the farms in Hajdú-Bihar County have similarly modern fixed assets as an average farm at the national level. There is a weak, but statistically significant ($r = 0.114$; $p = 0.001$) positive relationship between the fixed assets ratio and the total assets. As a result, the higher total assets, and the concomitant larger farm size are slightly related to fixed assets ratio, whose higher value is in connection with the use of newer and more modern technology. In contrast, no such correlation can be established between fixed assets ratio and revenue ($r = 0.026$; $p = 0.444$).

Table 6. Fixed assets ratio of enterprises in Hungary and Hajdú-Bihar County (averaged over the period between 2015-2019)

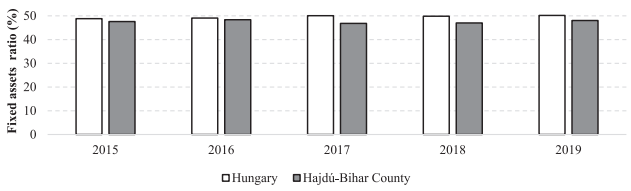
Fixed assets ratio (%)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
< 40	245	28.7	22	31.9
40 – 59.9	393	46.1	35	50.7
60 – 79.9	194	22.7	11	15.9
80 < =	21	2.5	1	1.4
Total	853	100.0	69	100.0
Mean (%)	49.6	-	47.6	-
Relative standard deviation (%)	30	-	31	-

Notes: Based on the methodology used, enterprises with a fixed assets ratio of less than 20% are not included in the analysis.

Source: Own calculations based on EMIS data, 2020

Taking into account the changes each year, no magnitude difference can be shown between the national and county average. For this reason, the authors maintain the above statement, i.e. the examined enterprises have similarly modern tools (Figure 9).

Figure 9. Fixed assets ratio of the examined enterprises on a yearly basis



Source: Own calculations based on EMIS data, 2020

When examining the leverage indicator, it was found that the enterprises in Hajdú-Bihar County are in a more favourable situation. While more than half of the county's enterprises have an leverage ratio of 0-20%, the national proportion of enterprises classified the same way is about 16 percentage points lower. The proportion of enterprises with the highest leverage ratio (70% <=) in Hungary is about 6%, while it is 1.5% at the county level, however, this group only involves one farm. Enterprises with the lowest leverage are mostly small at both the national and county levels. On average, the enterprises of Hajdú-Bihar County achieved a 6 percentage point lower leverage ratio during the examined period. As a result, these farms can be considered more capital-intensive. There is a weak negative relationship between the leverage ratio and the total assets ($r = -0.068$; $p = 0.047$). With the increase of farm size, businesses have increased own resources. As a result, external sources are involved to a lesser extent. Other factors more significantly influence the leverage ratio. In addition, Fenyves et al. (2020) did not find a correlation between farm size and leverage ratio for Hungarian enterprises. There is no significant correlation between the leverage ratio and sales revenue ($r = -0.032$; $p = 0.348$).

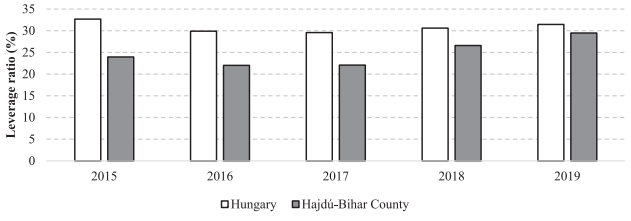
Table 7. Leverage ratio of enterprises in Hungary and Hajdú-Bihar county (averaged over the period between 2015-2019)

Leverage (%)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
0 - 19,9	348	40.8	39	56.5
20 – 39.9	262	30.7	22	31.9
40 – 59.9	152	17.8	5	7.2
60 – 69.9	42	4.9	2	2.9
70 < =	49	5.7	1	1.4
Total	853	100.0	69	100.0
Mean (%)	30.9	-	24.8	-
Relative standard deviation (%)	117	-	141	-

Source: Own calculations based on EMIS data, 2020

With regard to the leverage factor each year, it can be seen that the farms of Hajdú-Bihar county are in a more favourable position than the enterprises examined at the national level.

Figure 10. The leverage ratio of the examined enterprises on a yearly basis



Source: Own calculations based on EMIS data, 2020

In addition to the above methods, farms were examined at the county and national level also based on the quick liquidity ratio. In Hungary, 30% of farms reached a value below 1. In Hajdú-Bihar county, this proportion was half the national average value. The proportion of farms with a value between 1-2 was almost similar as the national and the county level. The distribution of enterprises with the most favourable liquidity (2 <=) proved to be 20 percentage points higher in Hajdú-Bihar county than the national value. When examining the relationship between the quick liquidity ratio and the total assets, no significant correlation could be observed ($r = -0.024$; $p = 0.479$). In contrast, there is a weak negative significant correlation between the quick liquidity ratio and sales revenue ($r = -0.083$; $p = 0.015$). With the increase in sales revenue, liquidity becomes more unfavourable. However, due to the weak correlation, other factors also influence liquidity (Table 8).

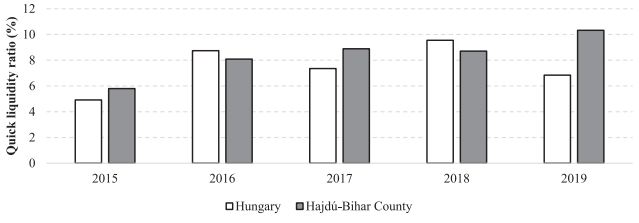
The value of the quick liquidity ratio analysed on a yearly basis varied both at the county and the national level. For farms in Hajdú-Bihar county, 2019 was the most favourable year, when they were able to reach a value 1.5 times higher than the national average. Subsidies also make a significant contribution to the favourable short-term solvency of the examined farms (Figure 11).

Table 8. Quick liquidity ratio of enterprises in Hungary and Hajdú-Bihar County (averaged over the period between 2015-2019)

Quick liquidity ratio (%)	Hungary		Hajdú-Bihar County	
	Number of enterprises	Distribution (%)	Number of enterprises	Distribution (%)
<1	255	29.9	10	14.5
1 – 1.9	187	21.9	12	17.4
2 < =	411	48.2	47	68.1
Total	853	100.0	69	100.0
Mean (%)	7.5	-	8.3	-
Relative standard deviation (%)	307	-	177	-

Source: Own calculations based on EMIS data, 2020

Figure 11. The quick liquidity ratio of the examined enterprises on a yearly basis



Source: Own calculations based on EMIS data, 2020

CONCLUSIONS

Altogether, similarly to farms examined at the national level, the enterprises of Hajdú-Bihar county produce profitably. However, it must be taken into account that the examined farms had different sizes. While enterprises in the county had a higher amount of assets during the examined period, those of the farms examined at the county level was shown to be higher in terms of sales revenue and income. Of the different profitability indicators, in the case of operating ROS, county farms achieved a higher value (by 3.6 percentage points), which can be explained by more efficient cost management. The enterprises belonging to the most profitable category are mostly considered to be small companies, similarly to the national level. Hungarian farms achieved a one percentage point lower value in terms of averaged ROA than in Hajdú-Bihar County. On county level farms with a profitability of more than 20% mainly considered to be small enterprises, while on the national level, they are micro-enterprises. When examining fixed assets ratio, it was found that county- and national-level enterprises have a similar level of technology, however, the farms of Hajdú-Bihar county can achieve 1.7 times the value of operating ROS. As a result, county-level enterprises have more efficient management and more favourable cost management. In Hajdú-Bihar county, enterprises with the lowest values can mainly be considered small businesses. Based on the values of the quick liquidity ratio, it was found that 30% of the examined farms may have short-term solvency problems on a national scale, however, this ratio is 15% in Hajdú-Bihar county. In addition, at the county level, 70% of the examined enterprises operate with excellent liquidity, while in the case of national-level enterprises, this value is almost 50%.

In addition, the relationship between each efficiency indicator and the total assets and net sales revenue was examined. Based on the obtained results, correlations were found in some cases. There was a statistically significant weak negative relationship between ROA and the total assets. Consequently, capital efficiency decreases as farm size increases. A weak positive significant correlation was shown between the fixed assets ratio and the total assets. As a result, farm size is slightly correlated with the fixed assets ratio. The higher proportion can be attributed to the use of more modern technology. There was a weak negative significant relationship between the leverage ratio and the total assets, which is due to the higher proportion of own resources available for larger farms. As a result, the proportion of external sources is typically lower. A weak negative correlation was found between the quick liquidity ratio and sales revenue. As a consequence, companies with higher farm size cannot be considered more liquid. However, due to the weak correlation between the examined variables, there are other influencing factors that require further statistical analysis.

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