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Analysis of the financial situation of Hungarian sports enterprises[1]

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The reason for the dynamic development of the sports industry is the increase in demand for sports opportunities due to leisure and lifestyle changes. This creates a continually expanding market for enterprises providing sports services and for businesses dealing with sports tourism and sports equipment production. Thus, the economic analysis of enterprises engaged in sports activities is an interesting and necessary field of research. The primary objective of this paper is to analyse the financial situation of enterprises whose primary business activity falls under NACE 931 "Sports activity". The 1,568 enterprises included in the sample were grouped into four clusters based on their net sales revenue, operating profit and balance sheet total. Subsequently, individual clusters were analysed (return on assets, return on equity, quick liquidity ratio and total indebtedness). The favourable short-term financial position of sports enterprises is due to their activity, i.e. they possess a relatively high amount of cash and a low amount of short-term liabilities. However, in the long run, these enterprises are significantly indebted, the main reason for that being probably their very low or even negative equity.

Keywords: sports industry, Hungary, enterprises' financial situation, return on assets, quick ratio, total leverage.

JEL codes: Z20, Z23.

Introduction

Currently, in developed countries, sports no longer appears only as a leisure activity, the embodiment of a healthy lifestyle and part of the entertainment industry, but also as a growing and more serious factor in the business sector.

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Sport, with its multidimensional range of value, has become an enormous business. Business-based sports require a good marketing strategy, i.e. excellent sales location (sports stadium, sports hall), calculated price (affordable tickets for the middle classes, season ticket offer), advertising slogans for mobilising sports fans (sports communication), product (quality sports product) and, of course, the professionals who set it all in motion and keep it moving.

The economic role of sports shows an improving tendency year by year in terms of the extent to which they contribute to the countries' GDP. Due to the increasing flow of funds into the sector, the analysis of sports enterprises from the economic point of view has become a priority. For the smooth functioning of a market economy, it is essential that market participants have unobstructed access to objective information on the assets, finances and profitability of enterprises present on the market. The goal of our research is to assess the financial situation of the Hungarian enterprises carrying out sports activities (NACE 931). To achieve this, we analyse two profitability indicators, one liquidity indicator and one solvency indicator for a number of 1,568 enterprises, divided into four clusters for easier interpretation.

Theoretical background

One of the reasons for the development of sports activities was the increase in their economic significance, which created a need for their economic analysis (Ács 2015). Eventually, the sports industry has become an integral part of the entertainment industry. In many countries, sport is considered a profitable sector and its economic importance has increased. The reason for the dynamic development of the leisure market in the sports industry is the increase in demand for sports opportunities due to leisure and lifestyle changes. This creates a continually expanding market for companies providing sports services and for businesses dealing with sports tourism and sports equipment production (András 2003).

The findings of other researchers also concluded that sports is a multibillion-dollar economic business, one of the most dynamically developing industries in the world. The contribution of the sports sector to GDP in the EU Member States is close to 5%, while in Hungary it is approximately 1-1.5%. This ratio is likely to increase, with various corporate tax subsidies providing a good basis for that (Ráthonyi-Odor–Borbély 2017). Examined from an economic research perspective, sports can also be considered a topic for both macro- and microeconomic research. It

is macro-level research if its economic significance, its contribution to employment, national economic income, and consumer spending are the priorities of the analysis. It is considered micro-level research if the functioning of sports organisations, their supply and demand characteristics are analysed (Ács 2015).

Companies that provide an organisational framework for sports-related businesses are called sports companies; they operate as business entities and they are smaller enterprises in terms of size (András 2002). Szabó (2009) summarised the usefulness of recreational sports at the level of society, economy, companies and individuals. The more people do sports, the healthier they will get and, hence, there will be a lesser burden on health and social security. The increase in the proportion of the population that is engaged in sports in Hungary would result in significant savings in the area of sickness benefits; thus, health improvement would lead to financially quantifiable cost savings or revenue growth (Szabó 2009; Kovács 2002).

Economic performance and productivity show a growing tendency due to leisure sports. By creating jobs, sports increase consumption and tax revenue. Based on the findings of several studies (Szabó 2009; Kovács 2002; Staines et al. 2003; Pálócz 2006; Suhrcke et al. 2005), it can be established that health is closely related to the competitiveness of the national economy through leisure sports and they mutually reinforce each other alongside an appropriate economic policy. Finally, leisure sports are also beneficial for companies, as their expenditures on sickness benefits decrease, the number of absences from work and workplace accidents declines, while employee performance, motivation and satisfaction improve. Also, the extensive involvement in sports has a favourable impact on related industries such as companies manufacturing and distributing sports apparel, sportswear and equipment, providing substantial business revenue for the business sector (Szabó 2009).

Only businesses characterised by efficient operation and rapid adaptability can be considered successful (Fenyves et al. 2018). Well-established decisions require in-depth economic and financial analysis. In an accelerated, globalising world, there is less time available for the decision-making process, thus there is a growing demand for a high level of support for managerial decision-making (Blumné–Zéman 2014).

The balance sheet, which presents the company's financial profit and loss account, as well as the notes to the financial statements provide information for

external stakeholders about the financial situation of the company (Böcskei–Hágen 2017). The notes to the financial statements have to support a more comprehensive presentation showing the reliable and realistic overall picture of the enterprise's financial position (Adorján 2008).

To offer a comprehensive picture of the sports companies' financial situation, in our study, following the analysis of the asset and liability structure indexes, we also examined the additional information and explanations presented in the notes to the financial statements.

Methodology and sample characteristics

In this paper, we analyse the financial situation of Hungarian sports companies based on the data of financial statements for the period 2014-2017, prepared and published in conformity with mandatory provisions and requirements. We extracted data from the OPTEN database, built up within the EFOP-3.6.2-16-2017-00003 project co-financed by the European Union under the European Social Fund.

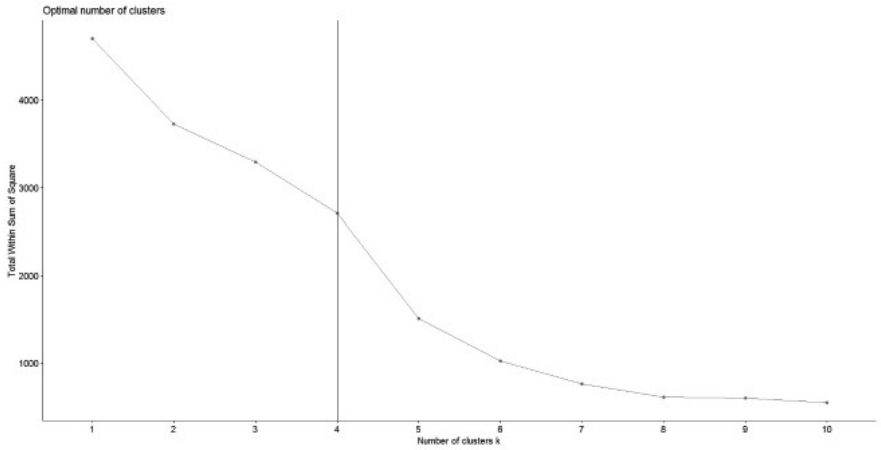
Enterprises included in the database fulfil the following conditions:

- They have a registered office in Hungary;
- Their primary activity is sports (Hungarian NACE code 931);
- They were established before 1 January 2014 and have a minimum of four closed business years;
- They are neither in bankruptcy nor in liquidation;
- They prepare an annual statement or a simplified annual statement.

Altogether, 1,747 enterprises met the requirements above and were therefore included in the database. Enterprises without revenue for the analysed period were excluded from the database, assuming that they were out of operation, thus the final number of enterprises analysed is 1,568.

To perform the analysis, we used Microsoft Excel and Rexcel, the R statistical system used within Microsoft Excel (Heiberger–Neuwirth 2009).

We carried out a cluster analysis based on three factors: total assets, total net revenue and operating profit. These indicators, in our opinion, characterise company size and operation the most accurately and can be extracted from the balance sheet. Studying the optimal number of clusters with the elbow method (Figure 1), we concluded that four clusters should be formed.



Source: Own research

Figure 1. Optimal number of clusters

Based on Bíró et al. (2016), we selected four indicators to analyse the financial situation of the enterprises:

- Return on assets shows the ability of assets to generate return. The indicator may be influenced by the profitability of sales (after taxation) and the change of asset rotation.
- Return on equity is the coefficient of profit/loss after taxation and equity. It is a quite common indicator to measure profitability because it is in strong relationship with the profit-sharing scheme of the management, providing information regarding the ability to pay dividends and the maximum capital gain. In addition, it is widely used in international practices to compare enterprises.
- Quick liquidity ratio is one of the indicators that best describes the short-term solvency of enterprises. It examines the coverage of their short-term liabilities by current assets without inventory. According to the literature, the value of the indicator should be around 0.8-1.
- Total indebtedness (the proportion of outside capital relative to total liabilities) shows the long-term debt position of the company.

On the clusters created we calculated the following statistical attributes of the chosen indicators: mean value, standard deviation, minimum value, first quartile, median, third quartile and maximum value.

Results of the study

Characterisation of sport enterprises' clusters

Before the comprehensive analysis of the financial indicators of the enterprises included in the study, delving into the basic statistical attributes of the clusters created is crucial.

A number of 412 sport enterprises were included in the first cluster (26.28% of the total), 918 enterprises (58.55%) in the second cluster, 175 enterprises (11.16%) in the third cluster and 63 enterprises (4.01%) in the fourth cluster.

The total assets of enterprises from Cluster 1 range from 200 thousand HUF to 2 369 509 thousand HUF, with a mean as high as 144 017 thousand HUF (Table 1). As the standard deviation (CV%) of this indicator is quite high, the group cannot be considered homogenous according to this indicator. Total net revenue ranges from 0 HUF to 482 474 thousand HUF. The distribution of the group is favourable, because of standard deviation from 35% to 133%, therefore the total net revenue describes the population accurately. The operating profit for their daily functioning was relatively high each year in the first quartile of Cluster 1. The median was around 1,000 thousand HUF in the years studied, while the maximum values of the operating profit ranged from 30 million HUF to 155 million HUF. They have high standard deviation values, therefore Cluster 1 is not properly characterised.

Table 1. Attributes of sport enterprises in Cluster 1 (unit: thousand HUF)

		Cluster 1 (412)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Total assets	**2014**	423	16 220	45 689	115 776	1 852 698	117 964	212%
	2015	0	16 466	44 919	105 888	1 620 810	115 135	195%
	2016	214	18 017	55 743	136 110	1 868 894	124 976	200%
	2017	225	12 642	55 816	143 447	2 369 509	144 017	219%
Total net revenue	**2014**	0	37 663	46 180	51 179	56 997	41 796	35%
	2015	0	29 242	47 859	64 983	200 667	50 168	70%
	2016	0	18 333	42 614	78 334	336 262	59 985	107%
	2017	0	21 715	44 459	80 641	482 474	68 231	133%
Operating profit	**2014**	-222 457	-3 329	701	2 379	30 129	-4 600	-677%
	2015	-180 771	-1 801	1 244	4 031	38 953	-2 495	-1050%
	2016	-66 172	-1 482	1 038	7 503	48 674	1 584	1048%
	2017	-76 351	-1 933	946	6 222	155 040	3 006	984%

Source: Own research

Cluster 2 included 918 enterprises that were smaller than enterprises in Cluster 1. Total assets range from 0 HUF to 302 262 thousand HUF and the mean is between approximately 55 and 86 million HUF (Table 2). The coefficient of variation of the total assets was around 200%, therefore the total assets properly characterise the cluster. Total net revenues vary from 0 to 446 million HUF. Mean values increased from 22 million HUF to 38 million HUF between 2014 and 2017. The values of operating profit are also diverse; the enterprise with the most negative operating profit closed 2014 with a loss of 152 million HUF and 2017 with a loss of 66 million. On the other hand, the enterprise with the highest operating profit generated 36, 135, 94 and 90 million HUF during the years studied. Standard deviation values of the operating profit are very high, therefore operating profit does not characterise Cluster 2 properly.

Table 2. Attributes of sport enterprises in Cluster 2 (unit: thousand HUF)

		Cluster 2 (918)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	0	6 134	17 677	44 655	1 134 233	55 987	239%
	2015	21	6 463	20 747	50 384	1 110 223	63 136	223%
	2016	3	8 172	23 620	57 926	1 138 669	75 503	218%
	2017	27	8 432	28 565	63 738	1 302 262	86 710	225%
Total net revenue	2014	0	13 461	23 336	31 461	45 118	21 962	57%
	2015	0	8 075	20 784	33 870	480 248	27 640	157%
	2016	0	8 754	21 233	34 458	686 807	33 171	198%
	2017	0	8 990	23 743	40 907	446 327	38 238	161%
Operating profit	2014	-152 591	-983	376	2 700	36 137	-694	-2475%
	2015	-171 567	-948	210	3 513	135 408	-563	-3647%
	2016	-53 692	-1 459	147	3 917	94 410	1 986	679%
	2017	-66 570	-522	510	2 767	89 676	2 179	642%

Source: Own research

Most enterprises from Cluster 3 are in a quite unfavourable financial situation, because they have neither assets nor net revenue and they also reported a loss at the end of the financial year (Table 3). Some enterprises are doing better as they closed 2017 with high assets (max. 5,217 million HUF), quite high net revenue (2,978 million HUF) and a profit of 85 million HUF. The mean of the enterprises' total assets increased from 16 million HUF to 33 million HUF between 2014 and 2017, the mean net revenue rose from 2 million HUF to 13 million HUF, while the mean operating profit was negative 500 thousand HUF.

Table 3. Attributes of sport enterprises in Cluster 3 (unit: thousand HUF)

		Cluster 3 (175)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	0	619	2 000	6 612	2 549 897	16 657	646%
	2015	0	725	2 438	7 400	4 375 198	22 653	813%
	2016	0	885	2 957	9 103	4 296 176	27 443	727%
	2017	0	1 128	3 224	9 823	5 217 380	33 375	779%
Total net revenue	2014	0	0	968	2 947	54 766	2 304	199%
	2015	0	0	1 314	3 893	325 546	4 778	348%
	2016	0	0	1 473	4 929	1 208 509	8 713	537%
	2017	0	0	1 500	5 603	2 978 632	12 692	815%
Operating profit	2014	-610 332	-451	-15	235	165 310	-873	-2420%
	2015	-324 613	-399	0	345	42 141	-591	-2055%
	2016	-627 456	-418	0	441	68 315	-646	-3408%
	2017	-531 104	-260	4	526	85 160	-384	-5754%

Source: Own research

The minimum values of total assets in Cluster 4 ranged from 14 thousand HUF to 3 963 million HUF, and the maximum values were between 0 HUF and 7 126 million HUF (Table 4). The total assets do not characterise the sample, based on the standard deviation. Some enterprises have no revenue from operation, while other enterprises reached revenues of nearly 500 million HUF. With regard to the operating profit, the group is heterogeneous and the mean ranges from -546 thousand HUF to 406 thousand HUF.

Table 4. Attributes of sport enterprises in Cluster 4 (unit: thousand HUF)

		Cluster 4 (63)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	14	2 637	7 192	22 086	3 963 400	34 523	592%
	2015	14	2 959	8 020	22 017	7 627 215	47 403	806%
	2016	0	3 124	8 501	25 193	7 591 618	51 316	748%
	2017	0	3 288	9 238	28 835	7 126 142	53 216	675%
Total net revenue	2014	0	4 298	7 855	13 198	44 862	9 234	79%
	2015	0	3 311	8 394	14 767	265 785	12 584	159%
	2016	0	2 358	8 207	16 515	439 353	14 557	205%
	2017	0	1 693	7 945	16 203	465 286	17 145	224%
Operating profit	2014	-57 524	-984	48	1 049	15 912	-548	-1064%
	2015	-106 970	-884	145	1 013	50 151	-312	-2626%
	2016	-147 156	-1 079	59	1 042	263 688	185	8757%
	2017	-67 448	-813	59	1 041	62 757	406	1912%

Source: Own research

Analysis of sport enterprises' financial situation based on return on assets, return on equity, quick liquidity ratio and total leverage

The mean return on assets (ROA) of enterprises belonging to Cluster 1 increased from 13% to 30% in the first year of the period studied, then it dropped to 7% and then boomed to 118% by 2017 (Table 5). The mean return on equity (ROE) increased from 0.18% to 14%, which can be considered favourable, but it would be important to check whether it increased due to debt. The liquidity quick ratio increased from 2.68 to 5.09, which is also favourable. It is also important to check the proportion of cash/cash equivalents and receivables within current assets and, in addition, the average time used for the collection of receivables. In terms of total indebtedness, the long-term financial position of enterprises from Cluster 1 (around 70%) is favourable. It is important to note that the mean does not adequately represent the population, as in some cases the standard deviation is very high.

Table 5. Financial indicators of sport enterprises in Cluster 1

		Cluster 1 (412)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-1036.67%	-4.41%	6.42%	47.48%	809.09%	**13.25%**	1603.93%
	2015	-105.06%	1.56%	13.00%	44.01%	379.14%	**29.96%**	235.28%
	2016	-319.49%	-14.03%	6.72%	30.94%	449.06%	**7.56%**	1310.01%
	2017	-767.10%	-1.08%	12.52%	31.86%	3613.94%	**117.74%**	505.95%
Return on equity	**2014**	-147.72%	-5.58%	0.87%	9.67%	64.86%	**0.18%**	16056.89%
	2015	-69.80%	-1.87%	2.57%	11.99%	70.71%	**3.02%**	727.06%
	2016	-162.97%	-3.90%	2.79%	13.88%	272.90%	**6.06%**	768.75%
	2017	-309.25%	-4.02%	2.31%	10.08%	1468.54%	**13.98%**	1398.49%
Quick ratio	**2014**	0.00	0.27	0.87	2.35	31.86	**2.68**	2.02
	2015	0.00	0.13	1.05	2.55	31.49	**3.64**	1.86
	2016	0.00	0.28	1.16	2.86	45.17	**3.74**	2.11
	2017	0.00	0.36	1.22	2.03	68.00	**5.09**	2.75
Total leverage	**2014**	0.00%	28.18%	67.73%	95.16%	233.57%	**68.73%**	68.04%
	2015	0.00%	24.11%	69.57%	93.65%	527.22%	**72.52%**	102.04%
	2016	0.00%	33.43%	66.75%	92.94%	450.93%	**78.21%**	95.24%
	2017	0.00%	32.73%	62.26%	87.56%	520.44%	**75.27%**	105.53%

Source: Own research

The mean value of return on assets for enterprises in Cluster 2 was negative in 2014 and 2015, due to the fact that enterprises closed the financial year with a loss,

but in 2016 and 2017 it was already 31% and 11%, which shows an improvement (Table 6). In 2014, the mean value of return on equity was positive and very high, but the reasons behind show an unfavourable situation: the enterprises listed here had very high negative equity, and their profit/loss after taxation was also negative. Over the following three years, the mean value of return on equity ranged from -7% to -3%. One reason for this favourable change is the increase in equity, and the other reason may be an increase in the profit. Quick liquidity ratio had quite high values in all four years examined, so enterprises did not have liquidity problems, but the share of receivables and their recoverability are also in question. With respect to total indebtedness, we can conclude that liabilities are dominant in the capital structure of the enterprises from the second cluster.

Table 6. Financial indicators of sport enterprises in Cluster 2

		Cluster 2 (918)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-6965.75%	-1.60%	10.77%	55.55%	1502.51%	**-14.15%**	-4378.01%
	2015	-24754.17%	-1.60%	6.63%	43.93%	3181.00%	**-111.03%**	-1705.93%
	2016	-2315.67%	-0.22%	8.05%	36.32%	4668.75%	**30.78%**	1374.05%
	2017	-1000.81%	-1.00%	5.54%	28.86%	976.32%	**11.32%**	1231.89%
Return on equity	**2014**	-521.22%	-3.66%	1.32%	15.36%	36321.43%	**199.52%**	1376.88%
	2015	-440.54%	-4.78%	0.87%	12.40%	132.38%	**-7.34%**	-765.56%
	2016	-406.57%	-6.73%	0.65%	9.76%	95.90%	**-7.26%**	-772.14%
	2017	-426.78%	-2.23%	1.48%	10.33%	67.75%	**-3.56%**	-1296.88%
Quick ratio	**2014**	0.00	0.22	1.27	3.93	142.89	**7.98**	2.71
	2015	0.00	0.24	1.05	3.49	295.27	**10.05**	3.53
	2016	0.00	0.24	1.12	4.42	1357.00	**17.38**	6.12
	2017	0.00	0.24	1.19	5.21	146.58	**10.51**	2.53
Total leverage	**2014**	0.00%	32.26%	76.28%	100.54%	7008.33%	**170.19%**	339.95%
	2015	0.00%	30.73%	75.66%	112.12%	7313.79%	**192.06%**	376.76%
	2016	0.00%	21.51%	64.63%	101.52%	5760.61%	**185.26%**	329.55%
	2017	0.00%	16.99%	60.28%	96.88%	4245.45%	**144.87%**	284.99%

Source: Own research

Enterprises in Cluster 3 had a mean ROA value of 49.48% in 2014, and it more than doubled to 132.55% by the financial year 2015 (Table 7). This means that corporate profits for the reference year were on average higher than the value of their total assets. Subsequently, it dropped significantly by 2016, with a mean value of -6.63%, suggesting that these enterprises operated at a loss. By

2017, it rose sharply to 37.82%, i.e. the ratio of the profit/loss after taxation and total assets. The median values stood at approximately 3% each year. There is a significant difference between the mean and the median values, so standard deviation is also high, and the sample is not adequately characterised by the mean. The mean of ROE was negative each year due to the fact that several enterprises from the cluster had negative equity in the periods studied. The median ROE was around 0% each year. Mean quick liquidity ratios were very high, but only due to the large number of extreme values. The median of the indicator was around 1.1, in line with the literature (Bíró et al. 2016). Finally, the minimum of total indebtedness ratio was 0% and the maximum, 2 239 300%, which means that some enterprises had no debt at all, while some had debts 22 393 times higher than their total assets. This is the result of negative equity. On the basis of the indicator's mean value, we can conclude that, in 2014, the debt was 38 times higher than total assets and, in the following years, the same ratio was 36 in 2015, 42 in 2016 and 15 in 2017. Due to the large difference between the mean and the median, the relative standard deviation is high, therefore the cluster is not homogeneous.

Table 7. Financial indicators of sport enterprises in Cluster 3

		Cluster 3 (175)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-7794.74%	-7.58%	2.46%	32.51%	29460.00%	**49.48%**	2535.22%
	2015	-16820.00%	-4.67%	4.71%	31.76%	95400.00%	**132.55%**	2576.75%
	2016	-12807.69%	-4.66%	3.56%	28.71%	3830.77%	**-6.63%**	-8598.77%
	2017	-7515.38%	-4.41%	3.21%	24.13%	18576.98%	**37.82%**	2151.17%
Return on equity	**2014**	-214600.00%	-21.93%	-0.69%	8.27%	28300.00%	**-247.23%**	-2907.01%
	2015	-151100.00%	-17.42%	0.00%	10.68%	770.59%	**-240.30%**	-2112.73%
	2016	-612800.00%	-15.64%	0.00%	9.43%	9566.67%	**-781.29%**	-2596.81%
	2017	-355133.33%	-12.29%	0.01%	9.36%	12788.24%	**-440.29%**	-2670.70%
Quick ratio	**2014**	0.00	0.08	1.09	6.69	6025.50	**52.07**	6.75
	2015	-6.66	0.11	1.11	6.96	4625.00	**31.60**	6.91
	2016	0.00	0.12	1.31	9.14	2637.00	**30.70**	5.09
	2017	0.00	0.09	1.23	10.83	3002.50	**45.53**	4.89
Total leve-rage	**2014**	0.00%	5.94%	56.42%	145.05%	2239300.00%	**3761.58%**	2003.40%
	2015	0.00%	6.92%	60.29%	137.53%	1601000.00%	**3581.72%**	1550.55%
	2016	0.00%	6.42%	47.58%	125.02%	1629800.00%	**4186.24%**	1531.93%
	2017	0.00%	3.26%	34.12%	99.99%	344400.00%	**1492.89%**	1036.74%

Source: Own research

Table 8. Financial indicators of sport enterprises in Cluster 4

		Cluster 4 (63)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-2138.81%	-2.80%	8.83%	40.33%	4359.74%	**18.80%**	1673.26%
	2015	-19340.00%	-2.60%	8.91%	37.03%	5800.00%	**-19.85%**	-5064.31%
	2016	-1902.13%	-5.06%	5.41%	27.54%	5162.86%	**15.92%**	1898.63%
	2017	-2211.52%	-2.23%	4.77%	22.94%	2263.87%	**9.87%**	2401.71%
Return on equity	**2014**	-1013.54%	-11.21%	0.48%	11.63%	1042.55%	**-15.72%**	-876.44%
	2015	-2468.33%	-7.94%	0.93%	13.17%	1070.45%	**-14.83%**	-1241.69%
	2016	-23568.69%	-15.28%	0.38%	7.10%	22620.00%	**-63.10%**	-2934.97%
	2017	-23766.67%	-14.53%	0.28%	6.23%	3766.67%	**-63.41%**	-1888.81%
Quick ratio	**2014**	0.00	0.14	0.78	2.74	5807.00	**20.54**	13.99
	2015	0.00	0.14	1.04	3.28	1369.00	**9.69**	7.28
	2016	0.00	0.13	1.02	3.75	35447.00	**118.65**	14.91
	2017	0.00	0.12	1.07	4.68	5789.00	**39.47**	9.04
Total leverage	**2014**	0.00%	27.51%	76.25%	131.40%	39362.50%	**272.38%**	727.49%
	2015	0.00%	22.00%	73.22%	130.28%	39362.50%	**339.16%**	616.05%
	2016	0.00%	15.77%	61.20%	118.68%	84621.43%	**609.75%**	808.52%
	2017	0.00%	14.04%	60.29%	117.95%	119870.00%	**771.65%**	851.00%

Source: Own research

Finally, Table 8 shows the financial indicators of enterprises in Cluster 4. The average ROA value dropped from 19% to -20% by 2015, then increased to 16% and declined again to 10% by 2017. The negative value was due to the loss reported in the reference year. On average, ROE indicators were negative each year, which could be either due to negative profit/loss after taxation or to negative equity. The quick liquidity ratio was volatile and it moved between 10% and 119% in the given period. Debts were up to seven times higher than total assets due to negative equity and high liabilities. As standard deviation values are high, the cluster is heterogeneous.

Conclusion

The main goal of our research was to analyse the financial situation of Hungarian sports enterprises in the period 2014-2017, based on four indicators: return on assets, return on equity, quick liquidity ratio and total indebtedness. First, we carried out a cluster analysis and formed four clusters based on the enterprises' total assets, total net revenue and operating profit. The primary objective of clustering is to group the approximately 1,500 analysed sports enterprises on

the basis of three characteristics. By creating four homogeneous clusters, the indicators describe the enterprises of the given cluster more accurately. However, it should be noted that none of the clusters created were homogeneous due to the high relative standard deviation. We carried out the same analysis with 10 clusters, but the relative standard deviation did not improve.

Examining the profitability of sports enterprises, it can be stated that their low return on equity ratio results from their high stock of liabilities and their low or even negative stock of equity. Based on the liquidity situation of sports companies, it can be said that, on average, they are not threatened by failure to fulfil their short-term liabilities. This might be due to the high amount of cash funds generated by their activities. In contrast, the same is not true for their long-term solvency. The indebtedness of the companies is high, as a result of negative equity and the high amount of long-term (over 1 year) liabilities. Consequently, these enterprises have fewer business perspectives. In our analysis, we found no correlation between the operating profit, revenues and total assets of the enterprises. This can be explained by their specific activity.

The indicators that we emphasised in our study and their interpretation should be also disclosed in the notes to the financial statements in order to facilitate the decisions of external market participants, investors and creditors.

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