

Péter BAJNAI,  
Péter POPOVICS

*Faculty of Economics and Business, University of Debrecen, Debrecen, Hungary*

# COMPARISON OF THE HUNGARIAN PLANTS OF EYEGLOSS LENS MANUFACTURERS ZEISS, HOYA AND SPECSAVERS BETWEEN 2014-2019

Review  
Article

---

## Keywords

*Profitability;  
Eyeglass lens industry;  
Consumer brand awareness;  
Cluster;  
Operational efficiency;  
ROS and ROA indexes;*

---

## JEL Classification

*O12*

---

## Abstract

*In recent decades, three major representatives of the global eyeglass lens industry have established subsidiaries in the same Hungarian settlement, Mátészalka, which has a significant past and experience in the sector. The plants of the German Zeiss, the Japanese Hoya and the British Specsavers rely on the manufacturing, processing, framing and distribution of eyeglass lenses. The companies are direct competitors of each other in terms of both sales and labour market. The following analysis presents these companies based on various indicators such as net sales revenue, after-tax profit, ROS and ROA indices, number of employees, average wage and productivity, consumer awareness and brand loyalty. It also reveals differences in size, performance, and profitability among the organizations. Hoya's plant stands out in various respects due to its prominent position and dynamic development within the company group. Zeiss seems to be coming to a halt, its performance has declined in comparison to Hoya in recent years, its position within the group is weaker than that of its competitor. Specsavers carries out activities of lower profitability in its local plant; therefore, it can be less profitable than its competitors.*

## INTRODUCTION

A significant part of eyeglass lens production in Hungary is concentrated in Mátészalka, located in the Northern Great Plain region in Szabolcs-Szatmár-Bereg county. A subsidiary of three global companies in the field manufactures and processes various types of finished and semi-finished eyeglass lenses and places them into frames in plants located close to each other on the Industrial road of the city. Professional cooperation and consumer-seller relationships are not uncommon among companies. However, overall, they consider each other as competitors and thus, continuous monitoring and analysis of the market position and strength of each other are of essential importance.

The status of competitors might suddenly change as it is a dynamically evolving sector continuously offering new development opportunities. The market for eyeglass lenses has grown steadily in recent years; domestic and international sales of optical products have expanded (Koncsek, 2018b). Between 2013 and 2018, the sales revenue of companies manufacturing optical products almost doubled to HUF 45 billion (Koncsek, 2018a).

Demographic and lifestyle changes and trends also benefit the participants of the sector. In Europe, the proportion of the population over the age of 65 is 19.2% while in Hungary, it is 18.3% (Eurostat, 2017). This ratio will continue to increase in the upcoming decades due to the ageing of the population in developed societies, where the number of people over 60 is envisaged to double by 2050 compared to 2015 (WHO, 2015). The ageing of people is very often accompanied by the deterioration of their eyes; therefore, a growing number of older people will need to wear glasses. In addition to them, the use of spectacles by younger people may also increase in the future: more time spent in front of screens, changes in fashion, and the needs of the middle class, which is becoming financially stronger in emerging areas, may increase the demand for glasses.

The paper analyses and compares the Hungarian plants of the three large companies competing in the dynamically developing eyeglass lens manufacturing industry. First, it looks into the main profitability indicators of the competitors, such as their net sales revenue and after-tax profit, and then, moves on to compare their profitability with the help of the ROS and ROA indexes. Some aspects of the surveyed companies' policies towards their employees are also worth comparing, such as the growth of their number, their productivity and their wages.

Consumer brand awareness and brand loyalty related to the manufactured products are also investigated by using the results of a questionnaire survey.

## MATERIAL AND METHOD

The analysis begins with a brief introduction of the companies, based on secondary research findings. The information available online about the sector, materials on the websites of the companies and their public annual statements mandatorily uploaded on the [e-beszamolo.im.gov.hu](http://e-beszamolo.im.gov.hu) website were utilized. The data originate from the profit and loss accounts, balance sheets and notes to the annual statements of the companies between 2014 and 2019.

To begin with, an online survey was conducted in April and May 2019, the responses of which were incorporated in the analysis. The questionnaire survey targeted people wearing glasses or contact lenses for vision correction purposes. The questionnaire is not representative; its sample size is 651. A total of 706 responses were received, 54 respondents were left out based on their answers to the first question (they did not wear glasses or contact lenses), so a sample of 651 people was formed. The questionnaire was distributed on various social media platforms. The questionnaire survey was primarily aimed at the brand and product awareness of the people wearing glasses and contact lenses.

## RESULTS

Mátészalka has been considered the centre of the Hungarian lens production since the 1970s when Magyar Optikai Művek (Hungarian Optical Works) established a factory here. During the privatization, after the change of regime, three companies emerged from the company, MOM cPlc., Zeiss and Buchmann - the latter was acquired in the late 1990s by the huge Japanese company Hoya Corporation, which is one of the largest eyeglass lens manufacturers in the world. In an interview, the CEO of Hoya described the situation as follows: "The fact that there are three major global players in a city with a population of 18,000, all on the same street, is a special situation. Mátészalka could even be called the optical citadel of Europe" (HVG.hu, 2019).

Carl Zeiss Vision Hungary Ltd. (Zeiss) is a subsidiary of Carl Zeiss AG, headquartered in Germany and one of the largest optical and optoelectronic companies in the world. The company group is present in 40 countries around the world with 40 production and 20 research and development sites. They have multiple plants in Hungary; binoculars, medical devices and microscopes are manufactured and traded in Debrecen and Budapest, while eyeglass lenses are produced in Mátészalka. The Hungarian subsidiary accounted for 0.53% of the total sales of the global

company (EUR 6.43 billion) in the 2018-19 business year (Statista.com, 2019).

Hoya cPlc. is 100% owned by the Japanese parent company, which currently operates in the sectors of electronics, imaging, healthcare and medical devices, and has more than 150 offices and plants worldwide. The year 2012 brought a significant change in the life of the plant located in Mátészalka. Along with Hoya's global development strategy, innovation was concentrated in its plant located in Thailand until 2012, and European subsidiaries did not benefit from much development funding. However, in 2012 floods hit Thailand, forcing the Japanese parent company to undergo a major reorganization; so, the Mátészalka plant, which employed only 200 people at the time, was expanded to almost 900 people. It was then decided that the global company would have a security factory in Europe, and this role was given to the unit in Mátészalka (Koncsek, 2018b). The Hungarian plant accounted for 1.3% of the parent company's total sales of JPY 565 billion in the 2018-19 business year (Hoya.com, 2019).

The third participant of the survey is not the above-mentioned MOM cPlc. established during the privatization (the main profile of the company, which was recently re-owned by Hungary is the production of water measuring instruments; so, they do not deal with glasses (Index.hu, 2016)), but SzatmárOptikai Ltd. (Szatmár), which is a subsidiary of the British Specsavers Optical Group founded in 2008. The British company examined several target countries before setting up the new plant. Mátészalka was chosen because they had a close partnership with Zeiss; thus it was certain that the optical know-how present in the town and the proximity of specialized suppliers provided a solid foundation (A&R, 2014). Szatmár's activities, on the other hand, differ from those of Zeiss and Hoya: they do not mainly manufacture eyeglass lenses but process and layer semi-finished lenses purchased from other manufacturers (even from the two competitors) and then mount them in spectacle frames. The Mátészalka plant accounted for 2.5% of Specsavers' total sales of GBP 2.78 billion in the 2018-19 business year (Specsavers-spectrum.com, 2019).

The local environment in which the three companies operate can also be described as a type of cluster, as it partially corresponds to the definition given by literature in the field. Michael Porter defines a cluster as a geographical concentration of companies operating in a particular industry, as well as specialized suppliers and other educational institutions that support them (Porter, 1998). The related institutions for training employees are present in the city: the training of employees for the production of eyeglasses and lenses is provided by the local vocational school (HVG.hu, 2019).

Some indicators were selected to compare the performance of the three examined companies operating in the eyeglass lens industry. They were quantified based on the annual statements of the companies in the last five financial years. Although these indicators do not provide a comprehensive image of the relationship between the three competitors, they reveal fundamental differences in performance and size.

The first examined indicator is the after-tax profit of the companies in recent years (Figure 1). The after-tax profit category shows how much of the pre-tax profit remains with the company after fulfilling tax liabilities (Sztanó, 2013). It is visible that in the business year of 2014-15, the companies achieved a similar after-tax profit, but in the following period, their performance diverged. Apart from the decline in 2016-17 (when Hoya made a larger investment), Hoya was able to increase its profit at a steady pace, with a value approaching HUF 3 billion in the most recent period. Until 2017-18, Zeiss was in first place in the relevant rankings, but the following year they had to record a significant decline, making them fall back to the third place. Szatmár, unlike the others, did not undergo any significant changes: they achieved a similar level of after-tax profit throughout the examined years, which is far behind Hoya by orders of magnitude.

Figure 2 shows the development of the net sales revenue of the companies. This Figure paints a different picture than the one shown in the previous Figure. All three companies were able to increase their net sales continuously without any declines in the examined business years. It is important to realize that Szatmár, despite the low value of its after-tax profit, has a very high sales revenue - this can probably be explained by the differences in their activity already described above. Hoya's development is indicated by the fact that it almost doubled its net sales revenue in five business years. Zeiss also grew but it was unable to produce a similar rate of expansion.

On the other hand, after-tax profit and net sales revenue alone do not say much about the company's successfulness and efficiency (Fenyves, Pető, Szenderák & Harangi-Rákos, 2020).

According to Szóka, the operation of enterprises is always a complex system, so the examination of management, efficiency and profitability is only possible in a complex way. Based on the data of the accounting statements, a database with vast information content and several indicators can be created using the methods of financial-accounting analysis. The scope of the analysed indicators falls into two categories; the present paper studies profitability indicators that are examined less frequently (annually, quarterly, etc.) (Szóka, 2012); the present paper studies profitability indicators

that are examined less frequently (annually, quarterly, etc) (Szóka, 2012).

Certain aspects of the profitability also need to be examined to draw more precise conclusions (Böcskei, 2013a). The profitability analysis compares a certain result category to an income level (Böcskei, 2013b; Musinszki, 2014). The category, which is most frequently used as an indicator, is the after-tax profit (Bíró, Kresalek, Pucsek & Sztanó, 2016). The following chart (Figure 3) compares the three companies based on their after-tax (net) ROS. ROS (Return-On-Sales) is a return on the turnover indicator that indicates the operational efficiency of a company. If the ROS indicator increases, the efficiency of the examined company improves and if its value decreases, its efficiency deteriorates, which might envisage financial problems (Hortoványi & Balaton, 2016; Musinszki, 2016).

The percentage of data obtained by dividing the after-tax profits of companies by the net sales revenue of the given years varies because the companies differ fundamentally in their size and sales volume. The net ROS ratios obtained show what percentage of their sales revenue they were able to maintain as profit, how efficiently they operated. The resulting chart depicts similar relationships to the previous one: Zeiss held the first place for a long time with its outstanding ROS index but, due to the decline signalled in the previous year, the dynamically improving Hoya came in first (Figure 3).

Similar relationships are shown in Figure 4, which shows the ROA (Return-On-Assets) indicators generated during the studied period. Hoya continued to grow after a brief halt in 2016-17, eventually overtaking the declining Zeiss. The return on assets measures the profitability of the company: the higher value of the indicator indicates that the company achieved a higher rate of return by operating its assets (Hortoványi-Balaton, 2016).

The following comparisons stem from the average number of employees working at the companies in a given year (Table 1). As can be seen, in the first year of the examined period, competitors had a similar number in terms of employees, with staff numbers being around 400. Since then, however, only Hoya has significantly increased the number of its employees, and no such staff development has taken place in the case of Zeiss and Sztanó.

The indicators so far have confirmed Hoya's higher efficiency, while Figure 5 nuances this picture. According to the chart, Hoya's sales revenue per employee is significantly lower than Sztanó's but Zeiss is also ahead in this respect. Although Hoya increased its number of employees and net sales revenue, the growth rates vary: employee productivity decreased during the analysed period.

Figure 6 shows another factor that is very important for competition besides corporate successfulness and efficiency. The three competitors, grouped together in a relatively narrow cluster, can draw from the same labour market – employees might easily change jobs for higher salaries.

According to the chart showing the cost of paid salaries divided by the average number of employees and 12 months, Hoya was ahead of Zeiss in the last year, which had been in the lead until then. Wage development was continuous at all three companies (this is partly due to the official minimum wage increase), the average wage received at Sztanó also exceeded HUF 300,000 by 2018-19, but still did not reach Hoya's average net wage of HUF 314,000.

The online questionnaire research on eyeglass lens wearing habits discussed above revealed some results that may be worth mentioning in connection with the comparison among the companies in Mátészalka. One important detail should be added: the relevant questions in the survey did not include Sztanó (nor Specsavers) as it does not deliver its own branded spectacle lenses to consumers. In contrast, the survey included Essilor, already known as EssilorLuxottica, which is the global market leader in the industry.

The question about the awareness related to manufacturers/brands received the following responses as shown in Figure 7: nearly 77% of the 651 respondents were familiar with Hoya, 56% with Zeiss and only 100 respondents (15.8%) knew Essilor, the global market leader.

In addition to brand awareness, the next important customer indicator is their loyalty to the brand or product. One of the questions of the questionnaire dealt with the brand loyalty of the respondents: on a five-point scale (where 1 indicated not loyal at all and 5 indicated very loyal), the average of the answers was 3.80 (187 respondents could name the brand of the lens worn by them, of which 182 answered the question about their loyalty). As for the content of this indicator, it can be compared to the brand value component called “brand value multiplier” by Takács (2011; 2015). An ANOVA test was applied to examine whether there was a difference in the brand loyalty of the respondents for each background variable. In the sample of 187 people that named their worn brand, no significant difference was found between the worn brand and loyalty; however, the obtained mean values may still be significant. The value was 3.93 for Hoya lens wearers, 3.56 for Zeiss wearers, and only 3.20 for Essilor lens wearers. Although the result cannot be proved statistically, the data show that Hoya lens wearers may be somewhat more loyal to their brand.

## CONCLUSIONS

A brief analysis of the eyeglass lens manufacturer “cluster” in Mátészalka showed the differences in size and performance between the companies very well. In terms of the number of employees, sales revenue and achieved profit, the three competitors still represented roughly similar levels in 2014-15 but different development curves have since come up. Hoya was able to significantly increase its performance, multiply its capacity, while Szatmár and Zeiss produced numbers that were more stagnant or low in many respects. In five business years, Hoya was able to stand out from the head-to-head competition in terms of after-tax profit, ROS and ROA, the number of employees and, to some extent, average wages paid.

Szatmár realizes an outstanding level of sales revenue, but it is only able to keep a small part of it as profit. Zeiss was ahead of its competitors in many respects until 2017-18 but lagged behind the dynamically evolving Hoya due to the downturn that year. Hoya, on the other hand, lags behind its competitors in one respect: the productivity of its employees. The higher market power of Hoya is also reflected by the results of the questionnaire survey. The products of the Japanese-based company were known to more respondents than Zeiss brands. It is important to note that the global market leader Essilor is less known among respondents - their position in Hungary is fading behind local manufacturers.

The outstanding performance of Hoya's plant in Hungary lies in its operating as a European security factory within the group for eight years, thus achieving significant development resources.

Zeiss does not have such a role, as can be seen in the lower value of its share of global sales. Szatmár seems to be more valuable for its parent company than its competitors due to its revenue contribution. Its profitability cannot reach the level of its competitors because the global company's market share is lower and eyeglass production (that is not carried out by Szatmár) is more profitable and represents higher value-added than processing and framing.

### Addition

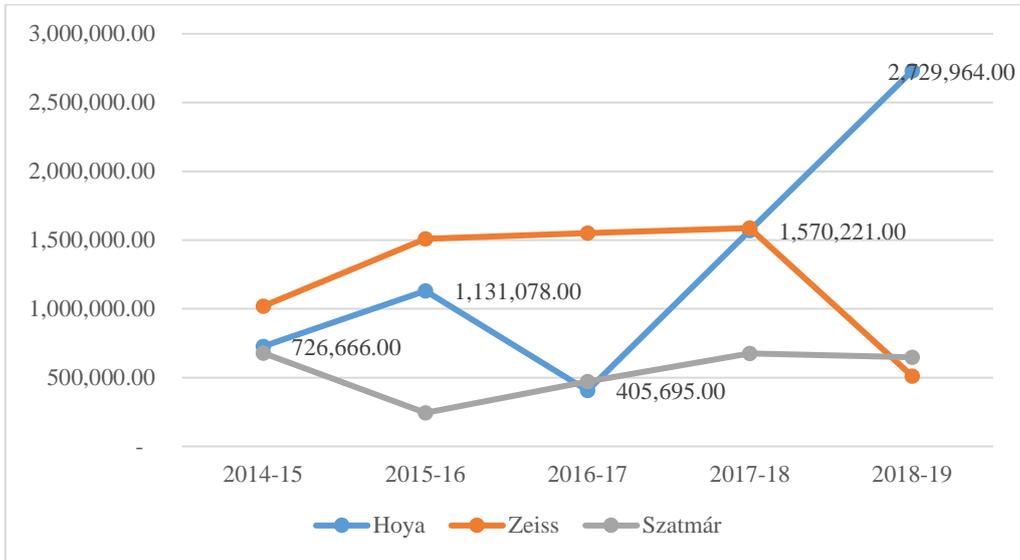
The financial data presented in this paper were collected from publicly accessible balance sheets, income statements and additional annexes of Zeiss, Hoya and Szatmár, between 2014 and 2019.

## REFERENCES

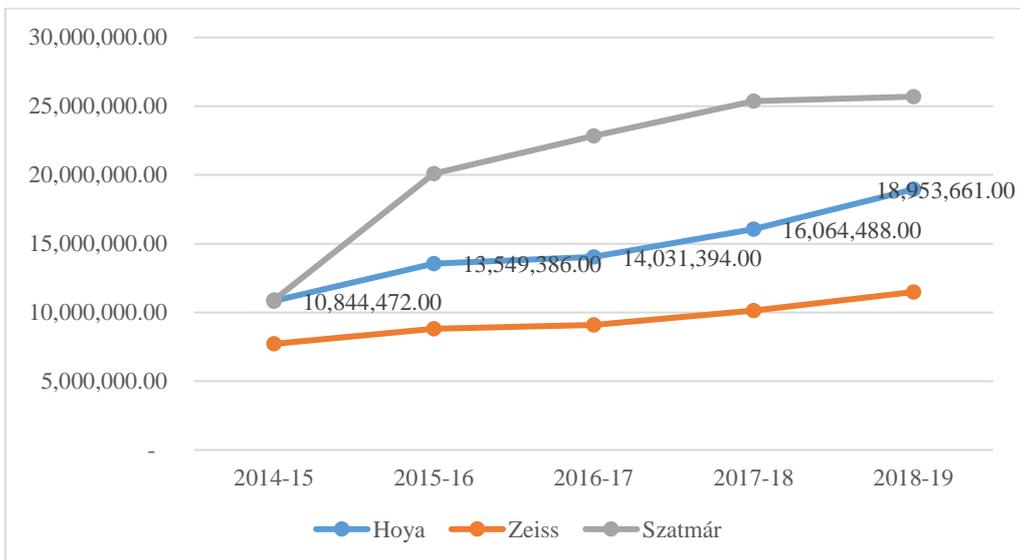
- [1] A&R (2014). Szatmár Optikai Kft., Hungary. <https://www.ar.be/en/references/szatmar-optikai-kft-hungary> Utolsó letöltés: 2020.07.05
- [2] Bíró, T., Kresalek, P., Pucsek, J. & Sztanó, I. (2016). A vállalkozások tevékenységének komplex elemzése [The complex analysis of the activities of businesses]. Perfekt Kiadó, Budapest, 232 p. ISBN: 9789633948514
- [3] Böcskei, E. (2013a). Qua vadis Controller? - avagy visszatekintve előre haladni [Qua vadis Controller? – or going forward by looking back]. *Controller Info. Copy & Consulting Kft. 2013/1.* pp. 3-8. ISSN 2063-9309
- [4] Böcskei E (2013b). Az eredménykimutatás tételeinek számviteli és controlling szempontú aspektusai [Accounting and controlling aspects of the items of the income statement]. *Controller Info. Copy & Consulting Kft. 2013/8.* pp. 10-17. ISSN 2063-9309
- [5] Eurostat (2017). A look at the lives of the elderly in the EU today. <https://ec.europa.eu/eurostat/cache/infographs/elderly/index.html> Utolsó letöltés: 2020.07.05
- [6] Fenyves, V., Pető K., Szenderák J. & Harangi-Rákos M. (2020). The capital structure of agricultural enterprises in the Visegrad countries *Agricultural Economics -Zemledelska Ekonomika 66* (4) pp. 160-167.
- [7] Hortoványi, L. & Balaton, K. (2016). A versenyképesség és az innováció vállalati szintű vizsgálata [Examination of the competitiveness and innovation on a corporate level]. *Vezetéstudomány, 47. évf. 12. sz.* 38-45 p.
- [8] Hoya.com (2019). Financial Review. <http://www.hoya.com/ar2019/finansial/>
- [9] HVG.hu (2019). Optikai fellegvár – Napi 20.000 szemüveglencse készül Mátészalkán [Optical Citadel – 20.000 pieces of lenses are produced in Mátészalka a day]. [https://hvg.hu/brandcontent/20190509\\_Optikai\\_fellegvar\\_Napi\\_20000\\_szemuveglencse\\_keszul\\_Mateszalkan](https://hvg.hu/brandcontent/20190509_Optikai_fellegvar_Napi_20000_szemuveglencse_keszul_Mateszalkan) Utolsó letöltés: 2020.07.05
- [10] Index.hu (2016). Visszakerült magyar tulajdonba a MOM Zrt. [MOM Zrt. is back in Hungarian ownership]. [https://index.hu/gazdasag/2016/03/24/visszakerult\\_magyar\\_tulajdonba\\_a\\_mom\\_zrt./](https://index.hu/gazdasag/2016/03/24/visszakerult_magyar_tulajdonba_a_mom_zrt/) Utolsó letöltés: 2020.07.05
- [11] Koncsek, R. (2018a). Öt év alatt 21 milliárddal nőtt az optikai piac [The optical market grew with 21 billion in five years]. <https://www.vg.hu/gazdasag/gazdasagi-hirek/ot-ev-alatt-21-milliarddal-nott-az-optikai-piac-2-1132634/> Utolsó letöltés: 2020.07.05
- [12] Koncsek, R. (2018b). Már nyomtatják is a szemüvegkeretet [Spectacle frames are now printed]. <https://www.vg.hu/vallalatok/vallalati-hirek/mar-nyomtatjak-is-a-szemuvegkeretet-1187297/> Utolsó letöltés: 2020.07.05

- [13] Musinszki, Z. (2014). Mit mutat a mérleg? A hányadoselemzés alapjai és buktatói II. rész. [What does the balance sheet show? Basics and barriers of the ratio-analysis]. *Controller Info* 2. évf. 1. sz. pp. 42-53.
- [14] Musinszki, Z. (2016). Ipar 4.0 – költségrendszer 4.0? Innovációk a költségrendszerekben [Industry 4.0 - Cost-system 4.0? Innovations in the cost--systems]. *Controller Info* 4. évf. 3. sz. pp. 2-9.
- [15] Porter, M. E. (1998). Clusters and the New Economics of Competition. *Harvard Business Review*, 1998. November-December Issue <https://hbr.org/1998/11/clusters-and-the-new-economics-of-competition>
- [16] Specsavers.spectrum.com (2019). Specsavers Annual Review 2019. <https://www.specsavers-spectrum.com/news/specsavers-annual-report-annual-review-2019/> Utolsó letöltés: 2019.07.07
- [17] Statista.com (2019). Carl Zeiss Group's revenue. <https://www.statista.com/statistics/283493/carl-zeiss--revenue/> Utolsó letöltés: 2019.07.07.
- [18] Szóka, K. (2012). Pénzügyi háló – a mutatók rengetegében [Financial net - in the forest of indicators]. *A Controller: A Gyakorló Controllerek Szakmai Tájékoztatója* 2012/6-7. pp. 4-6.
- [19] Sztanó, I. (2013). A számvitel alapjai [Basic of Accounting]. Perfekt Kiadó, Budapest, 388 p. ISBN: 9789633948217
- [20] Takács A. (2011). Márkaértékelés pénzügyi szemmel [Brand-evaluation from a financial point-of-view]. *Marketing És Menedzsment* 45. évf. 4. sz. 27-36 p.
- [21] Takács, A. (2015). The explanatory power of appraised brand values on stock prices in the financial services sector. *International Journal of Business Excellence* 8. évf. 3. sz. 298-311 p.
- [22] WHO (2015). WHO: Number of people over 60 years set to double by 2050; major societal changes required. <https://www.who.int/mediacentre/news/releases/2015/older-persons-day/en/> Utolsó letöltés: 2020.07.05

**LIST OF FIGURES AND TABLES**



**Figure 1**  
**Development of the after-tax profit of the companies, 2014-2019, thousand HUF**  
*Source: Own editing*



**Figure 2**  
**Development of the netsales revenue of the companies, 2014-2019, thousand HUF**  
*Source: Own editing*

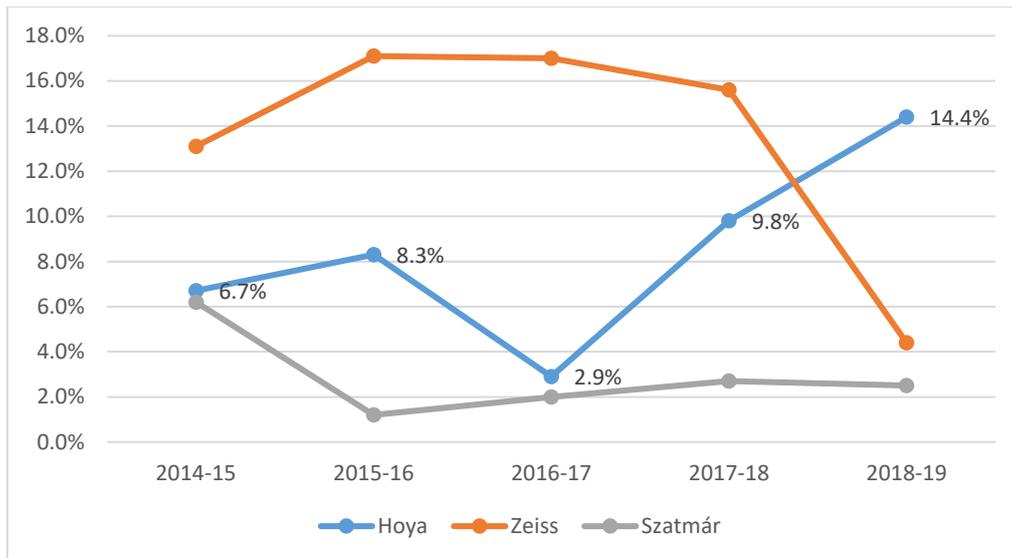


Figure 3  
**Development of the net ROS index of the companies, 2014-2019**  
 Source: Own editing

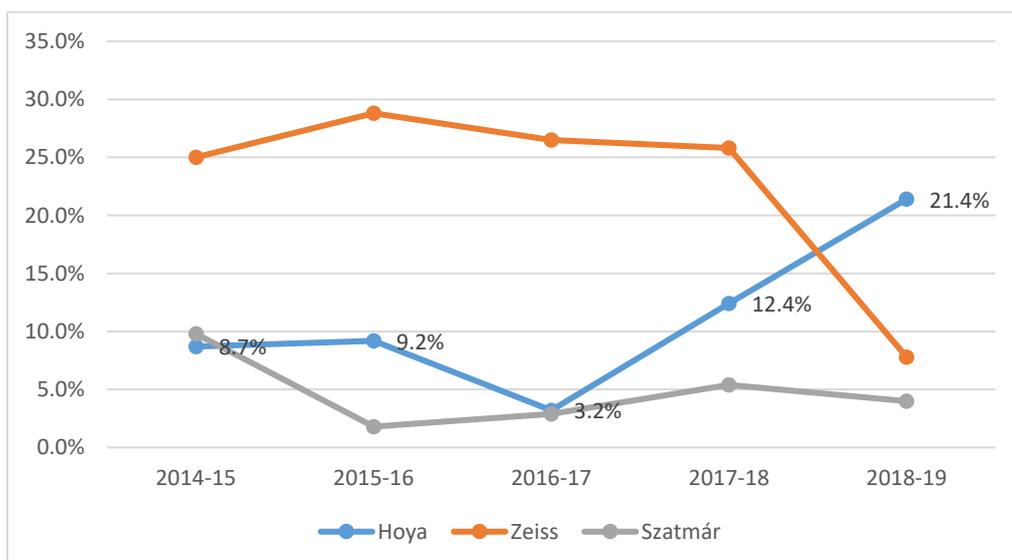


Figure 4  
**Development of the ROA index of the companies, 2014-2019**  
 Source: Own editing

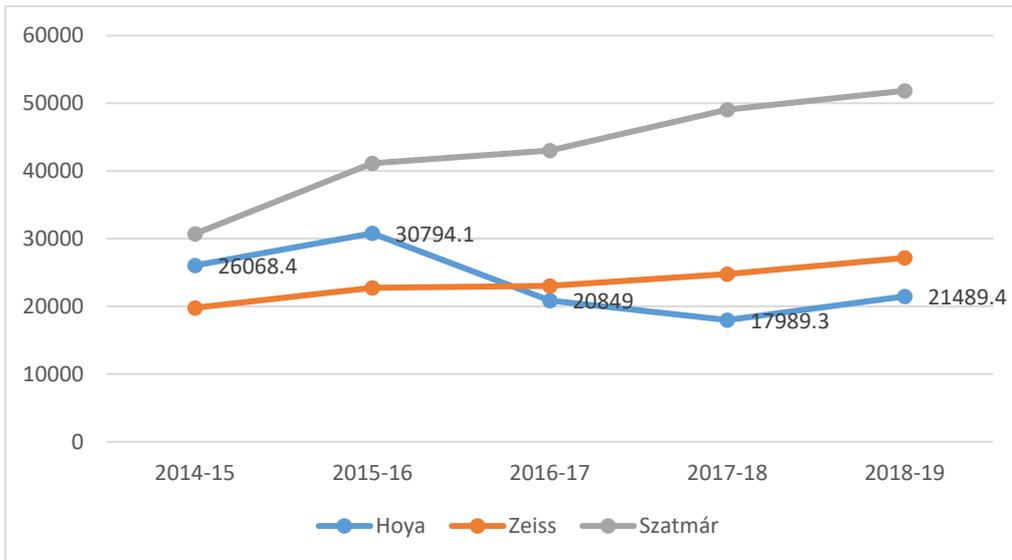


Figure 5  
**Development of the revenue per employee of the companies, 2014-2019, thousand HUF**  
*Source: Own editing*

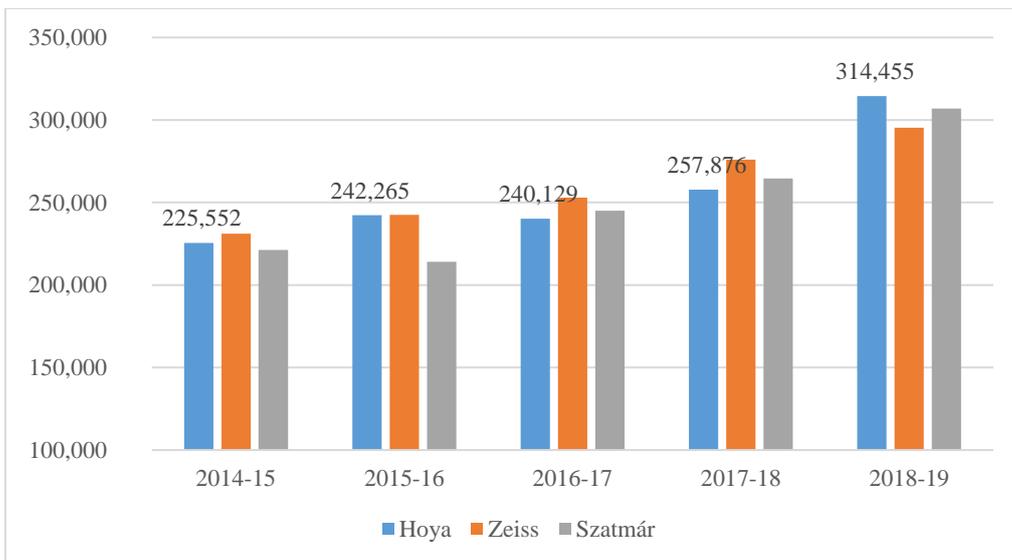


Figure 6  
**Development of the average monthly salaries paid by the companies, 2014-2019, HUF**  
*Source: Own editing*

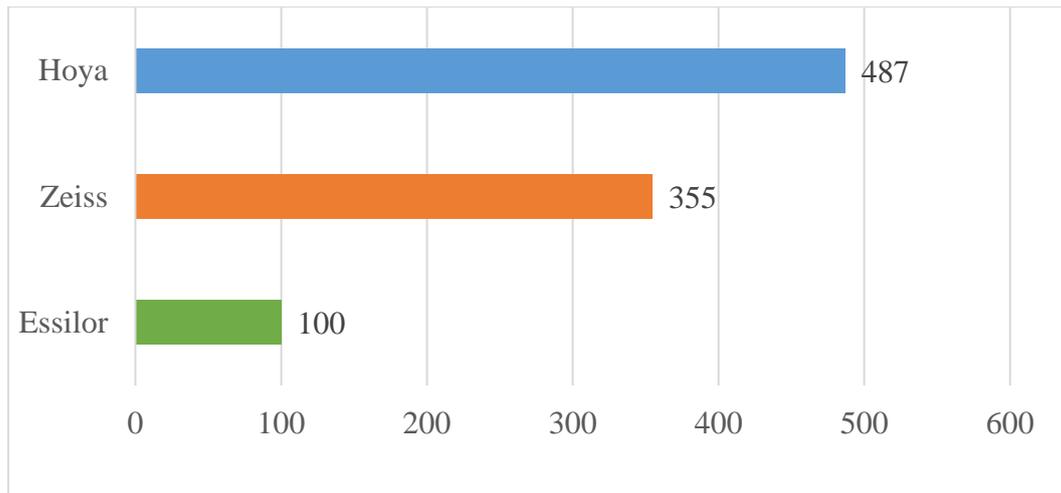


Figure 7  
**Reputation of Hoya and its competitors based on the answers of respondents (N=651)**  
*Source: Own editing based on the results of the online questionnaire*

Table 1  
**Average annual number of employees at the companies, 2014-2019**

Number of employees	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Hoya</b>	416	440	673	893	882
<b>Zeiss</b>	390	388	395	409	423
<b>Szatmár</b>	355	488	530	517	495

*Source: Own editing based on the annual statements of the companies*