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THE FINANCIAL SITUATION OF FOOD SECTOR PUBLIC COMPANIES

Key words: food sector, ratio analysis, synthetic variable

ABSTRACT. The aim of the article is to evaluate the economic situation of food sector enterprises listed on the Warsaw Stock Exchange. For the purposes of the study a synthetic indicator was used. It was formulated with the use of classic financial analysis indicators and the Multidimensional Comparative Analysis instrument. The analysis covered the following groups of ratios: accounting liquidity, indebtedness, profitability, productivity and turnover. The indicator enabled the evaluation of the situation of companies on the basis of financial data from the last five years and the presentation of findings in the form of a single synthetic variable. The resulting ranking of companies demonstrated the biggest differences in profitability values. Food sector public companies are characterised by financial soundness and indicators show that such public companies are in a better situation than other companies in this sector. The analysis was carried out on the basis of operating results of food sector companies in the period of 2014-2018.

INTRODUCTION

Enterprises function in a dynamically changing environment where both competition and constantly changing regulations force them to make adjustments. Therefore, it is necessary to recognize the analyzed phenomena and factors shaping them and improve activities aimed at developing ever more perfect tools for assessing planned or implemented results of operations and the financial situation [Gabrusewicz 2014]. In these circumstances, it is inevitable to perform the ongoing monitoring of a company's assets and finances and conduct a ratio analysis for the proper orientation of a company's further strategic measures. Thus, the major aim of financial analysis is to synthetically define a company's financial situation, verify its development strategy and find effectiveness standards [Skowronek-Mielczarek, Leszczyński 2008].

The information included in financial analysis constitutes an important instrument for business operations, a matter of interest not only to company management but also creditors, suppliers, recipients, competitors and existing or prospective investors. It is commonly believed that companies listed on the Stock Exchange are among the best; however, numerous studies prove that they are also susceptible to negative events arising from the economic situation of a country [Nawrocki 2005].

In the evaluation of a company's situation temporal comparisons are the most popular, i.e. relative to previous years, mainly due to data availability. The results of such comparative analyses show trends and the pace of changes in studied values. Although internal comparisons – ones made in relation to previous years or assumptions made for the future – enable the evaluation of a company's position and performance results, they are still comparisons made in isolation, limited to the juxtapositions of oneself with oneself. An organisation which boasts successes when this approach is adapted does not always enjoy such a good position when juxtaposed with other enterprises with similar business activities. Such an enterprise, despite working out positive results, does not always strengthen its competitive edge, thus it does not see resulting opportunities or threats [Skoczylas 2016].

The information carrier enabling the determination of changes taking place in an enterprise are financial indicators [Kuciński 2018]. Ratio analysis is considered necessary when assessing the financial situation of an enterprise. It is a deepening of data analysis carried out while reading financial statements [Wilczyńska 2018]. Ratio analysis boils down to calculating a number of relationships (rates) between amounts appearing on the balance sheet and the profit and loss account. In this way, a set of indicators characterizing various areas of the economic entity's activity is obtained [Rutkowski 2016]. A ratio analysis is considered inevitable for the evaluation of a company's financial situation [Nestorowicz 2014]. It is used by enterprises for their particular purposes as well as by banks when decisions are taken on credit granting. However, it has some drawbacks and does not always enable the unambiguous evaluation of a company's financial standing. Among those drawbacks is the fact that some financial ratios may show that a company is in a good financial situation, while some others may prove something to the contrary. For example, an enterprise may have low liquidity and high sales profitability at the same time.

Financial ratios also have another flaw: their number and diverse structure, which is often adjusted to the needs of individual enterprises, thus resulting in their non-comparability. That is why it is so important to compare values of particular financial ratios with various reference frameworks while evaluating a company's financial situation, as that will enable analysts to draw appropriate conclusions.

A ratio analysis has a wide range of applications: elements of ratio analysis are also employed in the measurement of risk which is seen as the changeability of an economic and financial indicator [Śmiglak-Krajewska, Florek 2009]. On the other hand, the establishment of a level of business risk is crucial for making investment and management decisions [Jerzak, Czyżewski 2006].

The aim of the article is to evaluate the economic situation of food sector enterprises listed on the Warsaw Stock Exchange on the basis of an analysis, including a company's capital and assets, management effectiveness, profitability and accounting liquidity. The analysis was carried out on the basis of the operating results of food sector companies in the period of 2014-2018.

MATERIAL AND METHODS OF ANALYSIS

Analysis covering the period of 2014-2018 was performed on the secondary data of the Stock Exchange on food sector enterprises. The diagnostic variables employed in the analysis (Table 1) are commonly suggested as those suitable for the evaluation of a company's financial situation, for instance by: Maria Sierpińska and Tomasz Jachna [1994], Maria Sierpińska and Dariusz Wędzki [1997], Waldemar Tarczyński [1994, 2002], Edmund Kurtys [1996], Magdalena Jerzemowska [2004] and Lech Bednarski [2007].

The condition of the company is a multidimensional concept as it relates to profitability, liquidity, debt and rotation, therefore a good tool for assessing the condition of enterprises is the use of multivariate comparative analysis. The standardization of features is designed to enable the implementation of extensive comparative tests of objects, due to the level of many variables adopted as criteria for assessing the complex phenomenon under consideration.

The method of zero unitarisation meets a number of postulates made to normative formulas, especially as regards the equality of variability ranges of all normalized features and the equality of lower and upper limits of the variability range, in particular the range [0, 1].

Ratios Y_3 , Y_4 , Y_5 were taken as destimulants (a destimulant is a variable with low values desired from the perspective of object evaluation and undesired high values). Others were used as stimulants (a stimulant is a variable with high values desired from the perspective of object evaluation and low undesired values). The statistical data which provided the basis for analysis in year t ($t = 1, 2, \dots, s$) make the following matrix:

$$\left[y_{ij}^t \right]_{\substack{i=1,2,\dots,n \\ j=1,2,\dots,m}} = \begin{bmatrix} y_{11}^t & y_{12}^t & \dots & y_{1m}^t \\ y_{21}^t & y_{22}^t & \dots & y_{2m}^t \\ \dots & \dots & \dots & \dots \\ y_{n1}^t & y_{n2}^t & \dots & y_{nm}^t \end{bmatrix} \quad (1)$$

where y_{ij}^t means the value of feature Y_j for enterprise i in year t .

Table 1. Diagnostic variables used for the formulation of the investment attractiveness index

Marking	Group	Indicator		Definition
PŁ	liquidity	Y_1	current liquidity	X_1 / X_6
		Y_2	quick liquidity	$(X_1 - X_2) / X_6$
ZA	indebtedness	Y_3	total indebtedness	X_7 / X_4
RO	turnover	Y_4	turnover of stocks	$X_2 \cdot 365 / X_9$
		Y_5	collection of receivables	$X_3 \cdot 365 / X_8$
RE	profitability	Y_6	sales profitability	X_{10} / X_8
		Y_7	ROA	X_{10} / X_4
		Y_8	ROE	X_{10} / X_5

Source: own work, where: current assets (X_1), stock at year end (X_2), receivables at year end (X_3), total assets (X_4), equity (X_5), total assets (X_6), current liabilities (X_7), sales revenue (X_8), cost of sale of goods (X_9), net profit (X_{10})

A company's investment attractiveness index is defined as below [Lisek, Luty 2019]:

$$WAI_i = \sum_{t=1}^s w_t Q_i^t \quad (2)$$

so that:

$$w_t = \frac{t}{1 + 2 + \dots + s} \quad (3)$$

$$Q_i^t = \frac{1}{m} \sum_{j=1}^m z_{ij}^t, \text{ where } z_{ij}^t = \begin{cases} \frac{y_{ij}^t - \min_{i,t} y_{ij}^t}{\max_{i,t} y_{ij}^t - \min_{i,t} y_{ij}^t}, & Y_j - \text{stimulant} \\ \frac{\max_{i,t} y_{ij}^t - y_{ij}^t}{\max_{i,t} y_{ij}^t - \min_{i,t} y_{ij}^t}, & Y_j - \text{destimulant} \end{cases} \quad (4)$$

where: WAI_i – the value of the investment attractiveness index in enterprise i , Q_i^t – the value of the synthetic variable in year t in enterprise i , z_{ij}^t – the standardised value of the diagnostic variable j in enterprise i in year t , w_t – the weight of the synthetic variable in year t .

The weights of the diagnostic variables were not diversified in the process of establishing values Q_i^t , because there is no reason for using different weights.

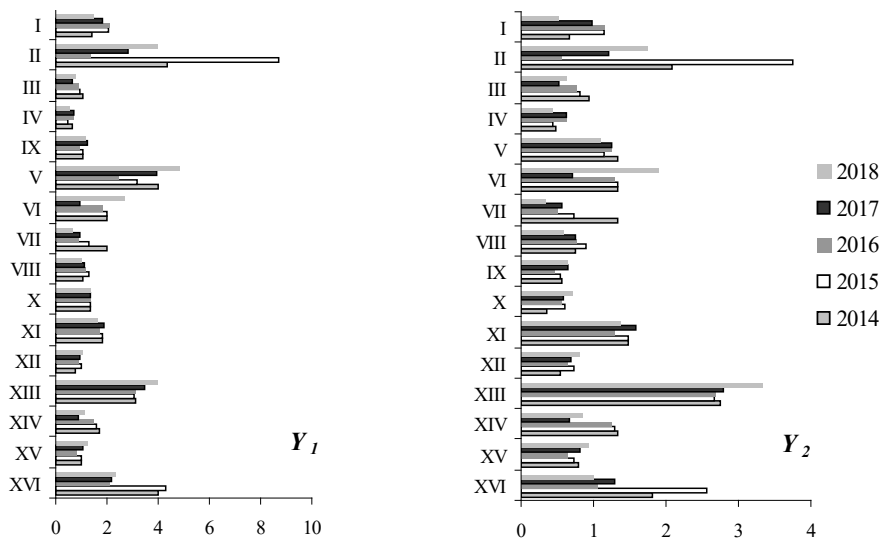
The investment attractiveness index established in the above-described manner forms the basis for the preparation and interpretation of an enterprise ranking.

STUDY RESULTS

The study covered companies from the food sector, now burdened with quite a high investment risk connected with the poor predictability of prices and supply of raw materials. To a large extent, the situation of food sector companies depends on natural factors and demand fluctuations caused by various external factors [Paczkowski 2011].

Diagnostic variables (Figures 1-3) in the analysed group of enterprises are characterised by large diversification (Figure 4). This high changeability is partly due to the existence of extreme, non-standard cases. It is also the outcome of very different financial situations, diverse scales of activity and amounts of resources employed in the studied companies.

The liquidity ratios (Y_1 and Y_2) presented in figure 1 show that some of the studied companies are characterised by a total lack of liquidity, while others have very high liquidity. The highest liquidity was found in ATLANTA Company, in 2015, which was mostly due to an unusually low level of short-term liabilities. Values below the threshold postulated in the literature, i.e. below 1.2, were noted in seven analysed companies, with the lowest, alarming value in Żywiec Group (0.5). It can foretell the risk of losing the capacity to settle current liabilities and the lack of possibility to liquidate current assets. On the other hand, in the analysed period Krynica Vitamin Company weakened its solvency and its current liquidity ratio fell from 0.94 to 0.67.



I	AMBRA	V	Makarony Polskie	IX	Krynica Vitamin	XIII	WAWEL
II	ATLANTA	VI	PAMAPOL	X	PEPES	XIV	Kania Meat Processing Plant
III	Gobarto	VII	HELIO	XI	SEKO	XV	Otmuchów Producer of Sweets
IV	Żywiec Group	VIII	Indykpol	XII	Tarczyński	XVI	ZT Kruszwica

Figure 1. Values of liquidity ratios in 2014-2018

Source: own elaboration based on data by www.gpw.pl, markings according to Table 1

The quick liquidity ratio (Y_2) in the case of eleven companies was below the level advocated by experts, i.e. 1.0. The biggest problems with the settlement of current liabilities occurred in Żywiec and Krynica Vitamin.

In the analysed group of enterprises Żywiec Group is the most indebted, which is seen in the large share of foreign capital in the financing of the company's assets. A high value of total indebtedness (Y_1), which is the case of Tarczyński, Kania Meat Processing Plant, Krynica Vitamin and PAMAPOL, may also be a sign of irrational management of a company's sources of financing (Figure 2). The ratio of total indebtedness may affect the way companies are treated by banks in the process of applying for credits to finance current operations. Indebtedness in excess of 0.55, which was found in the aforementioned companies, is considered an increase in credit risk by many banks. It can lead to stricter criteria used in the examination of credit applications, particularly with respect to credit collateral.

Six enterprises witnessed a shortened time of stock turnover (Y_4), which should be deemed a very positive trend. In practice, it is necessary to maintain a predefined amount of stock to secure continuity of both production and sales. The duration of the inventory cycle may significantly differ depending on the specifics of a business activity. The longest obsolescence of raw materials, materials and finished goods was in PEPES and Ambra. In 2014-2018, both companies substantially reduced the stock rotation time, whereby the former company did it by 38% and the latter by 26%. The Kania Meat Processing Plant and

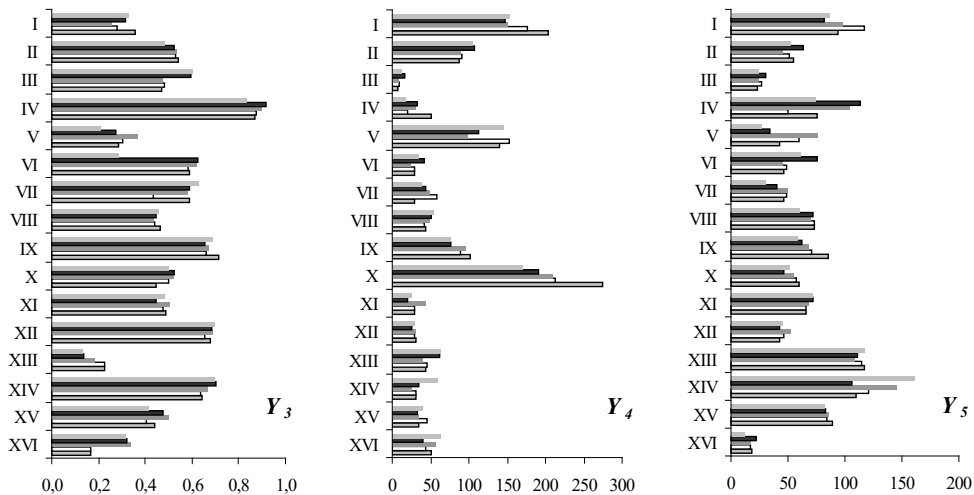


Figure 2. Values of indebtedness and turnover ratios in 2014-2018

Source: own elaboration based on data by www.gpw.pl, markings according to Table 1 and Figure 1

Wawel Company are examples of the opposite tendency; in the former the obsolescence of goods increased by 95% and in the latter by 45%.

The quickest possible collection of liabilities is justified by the need to satisfy certain pressing and cyclical obligations, e.g. towards employers or Inland Revenue Office. The majority of food sector companies listed on the Stock Exchange (10 companies) reduced the number of days that elapsed between the date of sales invoice issue and the effective date of payment. A sudden deterioration in the collection of receivables (Y_5), as happened in Żywiec Group in 2016, may signify problems with debt collection, which may result in payment delays in a company. A very unfavourable situation may be observed in The Kania Meat Processing Plant, where the time of waiting for payment was extended by 50 days.

Profitability ratios are very often considered to be the most important element of a company's finance and asset analysis. This not only applies to people running a business activity but also to business entities and institutions from their immediate environment (e.g. contractors, clients, banks, etc.) Unprofitable sales were recorded by Otmuchów Producer of Sweets, which generated a loss from sales in the last three years. On the other hand, Wawel Company had the highest profitability of sales over the whole analysed period: 0.15 on average. Food sector companies listed on the Stock Exchange are characterised by a higher profitability of sales in comparison with the whole sector. While the ROS in the sector is at 0.039, its mean average in the analysed group is 0.049.

The highest profitability of assets (Y_7) was noted in Indykpol (0.22), the company which improved its results from 0.04 to 0.22 in the analysed period. Analysing the quality and effectiveness of company management on the basis of the ROA, it can be observed that the highest values of the profitability ratio were in Wawel and Żywiec – they substantially exceeded the results of the other companies. Three companies from the analysed group had negative values of ROA, with the worst situation being recorded in Otmuchów Company.

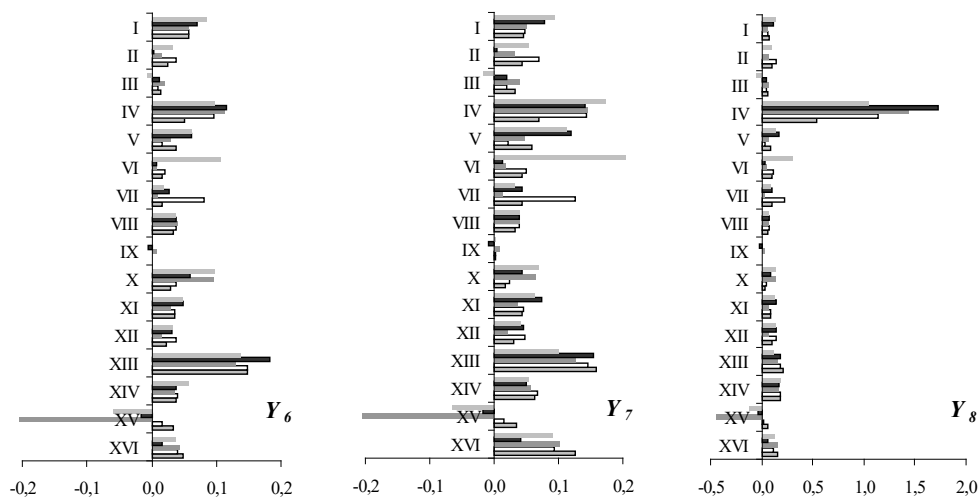


Figure 3. Values of profitability ratios in 2014-2018

Source: own elaboration based on data by www.gpw.pl, markings according to Table 1 and Figure 1

In the last three years, the ratio level in that company was below 0, therefore it is judged that it ineffectively used all resources employed in the company, no matter if they were contributed to the company by its shareholders or if were borrowed, for example, from a bank. Since 2016, the company has been suffering losses and failed to recover profitability in the analysed period.

A prima facie evaluation of ROA would show that the internal sources of financing, in the form of equity, are most effectively used by Żywiec Group, as its results are far better than those of the other companies in the analysed group as well as those noted in the whole sector. However, the high value of ROE in Żywiec Group derives from a small share of equity in the financing of current business operations of the company, which cannot be seen in such positive light.

ROE, as was the case with ROA, is the least positive in Otmuchów Company; negative values were also noted in Gobarto and PAMAPOL. In eight of the analysed companies the ROE is over twice as high as the ROA, which may prove that their profitability stems from their high dependency on external financing, and that in consequence may significantly increase the operational risk. The most unfavourable situation in this regard is found in Żywiec Group.

In order to construct a synthetic indicator, the variables were weighed according to formula 3. The reason for using that weight lies in the fact that the evaluation of a company's attractiveness is affected by that company's financial situation in past years, although most recent data are definitely the most important. That is why a less significant role was ascribed to older data.

The mean averages of liquidity ratios (Y_1, Y_2) in 2014-2018 are close to each other, apart from 2015, when ATLANTA's liquidity was measured to be at 8.69. That result had an impact on the value of the mean average calculated for the whole analysed group. Total average indebtedness (Y_3) in the studied period remained at a pretty stable level, i.e. in the range of 0.48-0.52. Taking into account the fact that the average total indebtedness should oscillate between 0.57 and 0.6

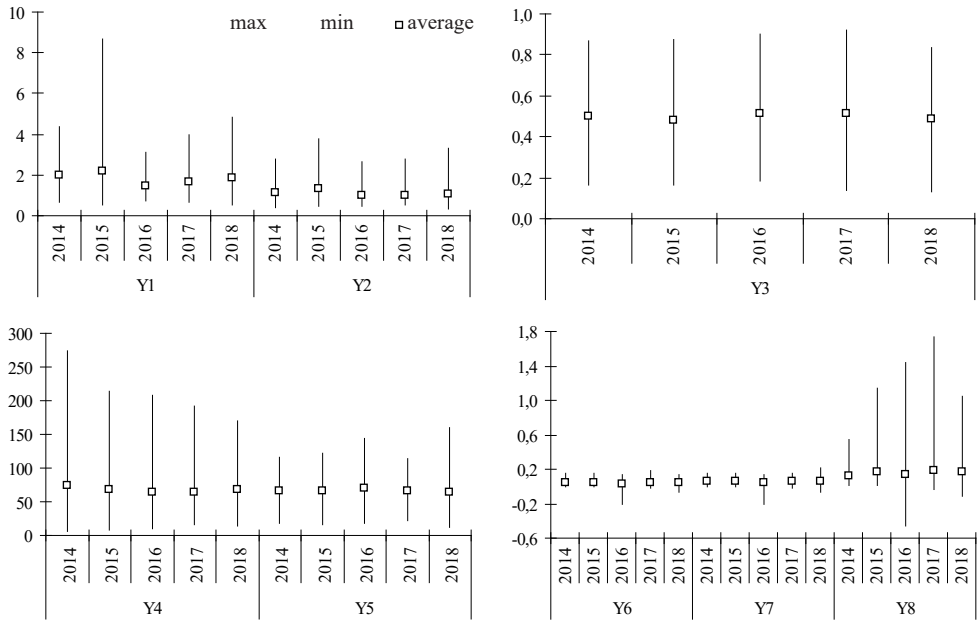


Figure 4. Basic characteristics of diagnostic variables in 2014-2018

Source: own elaboration based on data by www.gpw.pl, markings according to Table 1

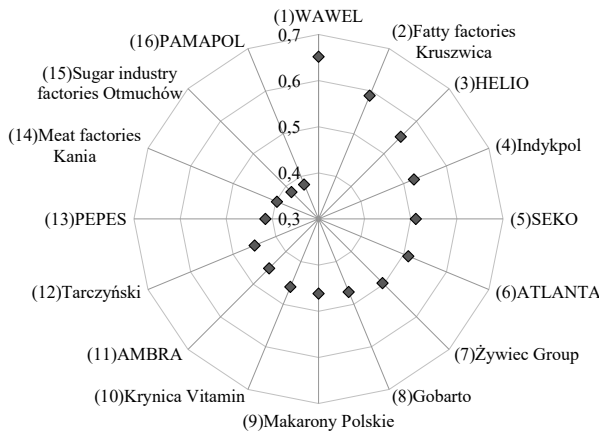


Figure 5. Ranking of enterprises by value WAI_i

Source: own elaboration

[Ostaszewski 1992], the result calculated for the analysed group may be considered to be relatively low. The minimisation of this ratio limits the possibilities for business growth and better return on equity owing to the positive effect of financial leverage. The values presented in the analysis may prove that the companies operate along the lines of a very prudent policy.

On average, the turnover of stocks (Y_4) is shorter, which is a positive trend. Sales profitability (Y_6) and return on assets (Y_7) were not subject to significant fluctuations.

Ratio Y_8 was mostly affected by deviations, particularly the changes in Żywiec Group, where the ratio oscillated between 0.54 and 1.73. The mean average of the ROE in the

analysed group of enterprises is slightly lower than the results for the whole sector. Nevertheless, taking present-day interest on treasury bonds and bank deposits into account, it can be stated that the profitability ratios in the analysed group of companies are positive.

Wawel Company was ranked first. The liquidity ratios in that company are at a very high level (graph 1). Moreover, both liquidity ratios are constantly at a much higher level than the minimum requirement and the company is in first place in the classification of public companies in terms of quick liquidity. The turnover of liabilities is relatively unfavourable. Wawel Company is the most profitable enterprise in the analysed group when it comes to sales profitability, return on assets and return on equity.

The lowest positions in the ranking are taken by PAMAPOL and Otmuchów – the companies which had the worst results of all discussed profitability ratios.

SUMMARY

1. The value of individual financial indicators is largely dependent on the sector in which a company operates, its organisation, working capital and company specifics, including ownership structure.
2. The analysis of profit and loss accounts and balance sheets provides data prerequisite for defining financial relations which form the pivot of ratio analysis; while ratio analysis constitutes the basis for ranking preparation.
3. The position of a particular company in the ranking was determined, first and foremost, by profitability ratios. The major problem of food sector companies listed on the Stock Exchange was with maintaining financial liquidity, particularly current liquidity, which deteriorated in most of the companies in the analysed period. It may be a demonstration of the pronounced worsening of their financial capacity.
4. Besides liquidity ratios, there are also indebtedness ratios which play an important role in ratio analysis. The results point to substantial financial independence of the majority of companies, although it can also be seen as a growth limiting factor.
5. What constitutes an important element of the economic study of a company, especially for company owners or managers, are profitability ratios. They are basic indicators of the rate of return on capital employed in a company and serve the evaluation of a company's capacity to generate profits from the capital employed. In terms of profitability, the situation of the majority of companies improved over subsequent years. Profitability ratios wielded the biggest impact on the position of a company in the ranking.
6. This study has verified the usefulness of the financial situation indicator for the creation of a food sector company ranking. It is based on ratios used in the financial analysis and allows for the inclusion of historical data from previous years. Moreover, the financial analysis is not sensitive enough to mislead the user to extreme and non-standard elements.
7. The synthetic indicator exceeds the level of 0.5 in six out of the sixteen studied companies, which proves a remarkably good situation of the best companies. The ranking shows that Wawel S.A. is the best in the group and ZPC Otmuchów is the worst. Therefore, it should be noted that it is not the product manufactured by a company but rather other factors that determine a company's financial situation.

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KONDYCJA FINANSOWA SPÓŁEK GIEŁDOWYCH SEKTORA SPOŻYWCZEGO

Słowa kluczowe: branża spożywcza, analiza wskaźnikowa, zmienna syntetyczna

ABSTRAKT

Celem artykułu jest ocena sytuacji ekonomicznej przedsiębiorstw branży spożywczej notowanych na Giełdzie Papierów Wartościowych. Analizę przeprowadzono na podstawie wyników działalności gospodarczej spółek w latach 2014-2018. W badaniu zastosowano miernik syntetyczny, do którego konstrukcji wykorzystano wskaźniki klasycznej analizy finansowej oraz narzędzia wielowymiarowej analizy porównawczej. Przedmiotem analizy objęto następujące grupy wskaźników: płynności finansowej, zadłużenia, rentowności, produktywności i rotacji. Wskaźnik pozwolił ocenić sytuację firm na podstawie danych finansowych z pięciu ostatnich lat i przedstawić w postaci jednej zmiennej syntetycznej. Uzyskany ranking spółek w największym stopniu różnicowały wskaźniki rentowności. Spółki giełdowe z branży spożywczej charakteryzują się dobrą kondycją, a wartości wskaźniki obliczone dla tych spółek wskazują na korzystniejszą sytuację spółek giełdowych w porównaniu z danymi dla całej branży spożywczej.

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