LEVELS OF EARNINGS IN THE RETURN-EARNINGS RELATION – THE VALUE RELEVANCE OF EVIDENCE FROM SLOVAKIA

Velga Vevere[1,a], Maria Kovacova[2,b,*] and Iveta Linina[1,c]

[1]EKA University of Applied Sciences, Lomonosova street 1/5, LV-1019 Riga, Latvia
[2]University of Zilina in Zilina, Faculty of Operation and Economics of Transport and Communications, Univerzitna 1, 010 26 Zilina, Slovakia
[a]velga.vevere@gmail.com, [b]maria.kovacova@fpedas.uniza.sk, [c]iveta.linina@turiba.lv
[*]Corresponding author

Abstract:

Research background: The research on various form of earnings and earnings management has been in growing interest of researchers and practitioners in recent years. Previous studies provide various views on the explanatory power of earnings changes or earnings levels for variations of stock returns, as well as on the effects of the time-series behaviour of earnings on the value relevance of both earnings variables.

Purpose of the article: The goal of the presented study is to compare the value relevance of various forms of level of earnings with the return-earnings relations of earnings changes. We studied levels of earnings in its various forms in Slovak companies in years 2018 and 2019.

Methods: We applied methods of descriptive statistics on different earnings level according to the provided literature review. Pearson's correlation coefficient and the one-way ANOVA were used to examine the relationship between the selected indicators. Based on the provided calculations four hypothesis were tested and findings showed.

Findings & Value added: The results prove that there is a statistically significant difference between the level of earnings EAT and region, size and sector of the company. Also, the analysis of relationships between total assets of the companies and their level of earnings showed the moderate correlation, and over the years, these results did not change. The results provide a different understanding on the role of earnings levels in business decisions. The paper points out the valuation role of earnings levels in the return-earnings relations. The results of this study can be further used in the creation of the earnings management model in companies.

Keywords: levels of earnings, earnings, earnings management, Slovak companies.

JEL Classification: G00, M20, M41

1.   Introduction

Earnings management has attracted extensive research in the accounting field. Most research in this area requires a proxy for the amount of managed earnings. Earnings management can be considered as the uses of various accounting techniques (Clubb, and Wu, 2014; Makarem and

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Roberts, 2020). Financial statements as the main reporting documents of various types of earnings represents the results of business activity of the company. Managers of the companies have different incentives to manipulate and report earnings (Atiase et al., 2005; Tahat et al., 2021). Many accounting policies and principles require business managers to make their decisions for this purpose. Therefore, these manipulations may affect the quality of financial statements and alter their reliability. Earnings management monitors how accounting policies can be used and financial statements produced to increase or offset business income (Jackson et al., 2017; Bryan et al., 2017). The optimal capital structure connected with earnings management is the key precondition for business, even though defining the optimal capital structure is difficult (Ghosh et al., 2005).

Typically, researchers use empirical models to decompose total accruals into non-discretionary accruals and discretionary accruals. Discretionary accruals are then used as a proxy for earnings management and are linked to different potential incentives or used as a measure of earnings quality. The most widely used discretionary-accruals models are variations of the Jones model (Lo, 2008). Prior empirical studies find that discretionary accruals estimated from these Jones models are correlated with performance and expected future earnings growth. Dechow, Sloan, and Sweeney (1995) and Kasznik (1999) document that discretionary accruals estimated from the Jones model are positively related to return of assets. McNichols (2000) further shows that discretionary accruals from both the Jones model and the modified Jones model are positively related to analysts' forecasts of long-term earnings growth. The conventional explanation for the evident relationship between discretionary accruals and firms' performance and growth is that Jones models are mis-specified in identifying discretionary accruals (Lee et al., 2006; Dichev and Tang, 2009).

On the other side the amount of managed earnings should have no relationship with companies' performance or growth. Therefore, the goal of the presented study is to study the levels of earnings in the return-earnings relation. We analysed and calculated earnings levels of Slovak companies in years 2018 and 2019. We didn´t take into account the year 2020, because of the situation in the world, when global pandemic COVID-19 hit the whole world and stopped all activities and companies in their businesses. Therefore, the year 2020 is strongly affected by this situation and for the correct evaluation of these effect there is a need to study at least to following years.

The research paper contains of five chapters. The first chapter, Introduction, explains the aim of the paper, focus and originality of the article. In the second chapter, Literature review, necessary information about earnings management is provided along with a detailed overview of the authors dealing with this field. In the third chapter the research objective is described, the methodology used and the method of data collection. In the next chapter, the results of the earnings analysis are described. In the last section, the discussion is provided. The results of this paper point out the relation between levels of earnings and return-earnings. The output can be valuable for all those who deal with this area, whether it's researchers or managers dealing with the issue of earnings.

2.   Literature review

Earnings Management is about the use of accounting techniques in the process of financial statements creation. Financial statements are a structured presentation of the business activities and financial situation of companies. Earnings Management is thus used for the way in which accounting rules are applied and generates financial statements according to the management's wishes (Ellahie, 2021; Gashi Ahmeti and Fetai, 2021).

Gaganis et al. (2019) in their study investigated whether and how, certain country-specific characteristics shape the profitability of SMEs. Using a large sample of around 40,000 firms operating in 25 EU countries over the period 2006-2014 they argue that freedom from corruption, a better environment in terms of the conditions that could contribute to the ease of getting credit, and fewer government regulation related to the starting, operating, and closing a business, enhance profitability. The dimensions of national culture also play an important role. Their results show that individualism, masculinity, and long-term orientation have a positive impact on profitability, whereas power distance and uncertainty avoidance have the opposite effect. They also find that the magnitude of the impact of national culture on profitability depends on political stability and institutional quality.

On the other side Dang et al. (2021) examine the relation between corporate information environment and capital structure decisions, and whether this association changes with cross-country institutional environments. Using earnings management as a measure of the corporate information environment, they argued that firms with higher earnings management activities have greater firm leverage ratios. According to the effect of earnings management on leverage is more pronounced in countries with weaker institutional environments.

The relationship between CSR and earnings management was studied by Dimitropoulos (2020). The study provided a multi-country data set with various dimensions of CSR performance including indexes regarding workforce, community relations, product responsibility and human rights protection. He conducted empirical analysis with panel data regressions and proved the negative association between CSR and EM indicating that high CSR performing firms are associated with less income smoothing and discretionary accruals, thus with higher financial reporting quality.

An integrated – statistical, econometric, and economic analysis was conducted of two relevant financial performance measures-return on assets (ROA) and return on equity (ROE) by Dinca et al. (2017). They analysed almost 1000 construction companies from eight EU countries between 2004 and 2013. The methodology can be readily applied to any country, region, or even the entire global construction sector. Findings indicate that companies from Western EU countries have higher ROE compared to companies from Eastern EU countries, but the latter offered higher ROA. Inverse of short-term debt has a high explanatory capacity in the long run. Investment productivity and labor productivity are also instrumental in explaining the variance of inverse of long-term debt. These findings indicate that companies should increase their productive investments when faced with a crisis.

Similarly, Lassala et al. (2017) applied the fuzzy-set qualitative comparative analysis and offered new evidence on the relationship between both types of performance in a sample of companies listed in the Spanish capital market. Financial performance was measured by the return on equity (ROE) ratio and the corporate performance of the company was measured by its inclusion or not in the sustainability index used as reference for the Spanish capital market, the FTSEGood4 IBEX. They concluded that return on assets is a necessary condition for companies with leverage to reduce the cost of debt due to their sustainability profile and consequently boost their ROE.

Beyer and Hinke (2018) investigated the driving factors behind differences in profitability of Czech and German firms on the basis of a comparative analysis. They applied a two-step variance analysis, the first step focused on the operational differences in ROA between Czech and German ventures, which was based on deeper analyses of the asset turnover and the profit margin. In the second step, the differences in ROE were analysed, considering influences from national taxation, conditions and patterns of financing and operations of the ventures. They confirmed the hypothesis that specific drivers of profitability differ significantly between the

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two countries in certain business sectors and would cause substantial differences in profitability. Due to the overlapping nature of these individual effects, they compensate each other to a great extent. Strouhal et al. (2018) also provided earnings analysis on set of Czech companies. They focused on measuring of the financial performance of businesses, mainly to determine to what extent the form of profit calculation influences value of return on assets. Based on the calculations of ROA of TOP 100 Czech companies they assessed the differences in the final values of the tested indicator showing the link to the capital structure of the analysed companies and proving that the level of indebtedness influences the difference in the ROA calculations when different kinds of profit are used. In the case of the companies with higher indebtedness, it is more appropriate to compare the ROA indicators based on the nominator containing earnings before interest and taxes.

In Slovakia Siekelova et al. (2019) conducted research on the developing of SMES companies through the profit management. They focused on the analysis of the profitability of SME companies as well as on the identification of indicators that significantly influence the rate of profit.

Similarly, Svabova (2020) conducted research in the Visegrad group's business entities with the focus on an initial dependency analysis between total assets of companies and various profit measures. Using descriptive statistics as well as a correlation analysis based on the real business data on almost 300 thousand companies in the V4 countries from the Amadeus database, covering the period from 2013 to 2017 they indicated that Slovak companies have the average values of profit measures and total assets comparable to Hungarian companies. Czech and Polish companies have several times higher average values of profit measures and also of total assets than Slovak and Hungarian companies. The analysis of the development of the profit measures and the total assets of the companies over the years showed significant differences across the four countries during the period covered by this study.

3.   Data and methodology

In the presented study, we focus on the analysis of the levels of earnings in the return-earnings relation. We analysed and calculated earnings levels of Slovak companies in years 2018 and 2019. We didn´t take into account the year 2020, because of the situation in the world, when global pandemic COVID-19 hit the whole world and stopped all activities and companies in their businesses. Therefore, the year 2020 is strongly affected by this situation and for the correct evaluation of these effect there is a need to study at least to following years.

For the analysis, we use data on real companies from Slovakia from the database Amadeus, a database of comparable financial information for public and private companies across Europe. Amadeus, covered by the company Bureau van Dijk, contains comprehensive information on around 21 million European companies. Overall, the dataset used in this study contains data of 27 385 Slovak companies. These companies reported positive profit; therefore, we have conducted our research on this data set of companies by using selected indicators. For variables, we use the following designation and method of calculation, shown in Table 1.

Firstly, we have looked on the value of reported profit. Some values showed a striking deviation from others. Such values are called outliers and it is recommended to exclude them from the dataset for further analysis. If these values are not excluded, they can influence the final results of the provided analysis. There are various methods for determining outliers. We applied interquartile range method of outlier detection, for the purpose of which it is necessary to know the first and third quartiles. According to this method outliers are values below Q_1 (-1,5 interquartile range) or above Q_3 (+1,5 interquartile range).

Table 1: Selected variables and their calculations

Variable		Calculation
EAT	Earnings After Taxes	Financial Income + Operating Income − Taxes
EBT	Earnings Before Taxes	Financial Income + Operating Income
EBIT	Earnings Before Interest and Taxes	EBT + Interest
EBITDA	Earnings before interest, taxes, depreciation and amortization	EBIT + Amortization
NOPAT	Net operating profit after taxes	EAT + Interest after Taxes[a]
ROA	Return on Assets	EAT/Average Total Assets
ROE	Return on Equity	EAT/Equity
ROS	Return on Sales	EAT/Net Sales
ROI	Return on Investment	EAT/Investment Cost
ROCE	Return on Capital Employed	EAT/Total Assets – Current liabilities

* 21 % – corporate income tax rate was used in 2018, 2019.
Source: own processing

When a dataset has outliers, variability is often summarized by a statistic called the interquartile range (IQR), which is the difference between the first and third quartiles (upper and lower quartile). The first (upper) quartile is the value in the data set that holds 25% of the values below it. The third (lower) quartile is the value in the data set that holds 25% of the values above it. Then the interquartile range is defined as follows:

$$IQR = Q_3 - Q_1, \tag{1}$$

The graphical representation of this method is a boxplot. We have tested outliers for all selected variables (Table 1) separately. Totally, we have excluded from our basic dataset 19 304 companies. Therefore, the final sample consisted of 8 081 Slovak companies.

Brief characteristics of the database is shown in following tables.

Table 2: Regional diversification of Slovak companies in the database

Region	Number of companies	Number of companies (%)
Bratislava	2,029	25.11
Trnava	773	9.57
Trencin	708	8.76
Nitra	966	11.95
Zilina	979	12.11
Banska Bystrica	736	9.11
Presov	883	10.93
Kosice	1,007	12.46
SUM	**8,081**	**100**

Source: own processing

Table 2 shows regional diversification of companies in the database from which 97% are SME companies and 3% are big companies. This is mainly caused by exclusion of companies because of extreme values. According to table 3 we can summarize the representation of companies according to SK NACE characteristic, which represents economic sector of company.

To characterize level of earnings in return earnings relation, we applied statistical descriptive characteristics. For each variable, we list the mean, standard deviation, median, minimum and maximum values. These characteristics can be used to compare groups of companies and also to monitor the development of the value of the various level of earnings of companies over the years. To compare the means of level of earnings of the companies, we conducted Kruskal-Wallis´s nonparametric test and Mann-Whitney´s nonparametric test.

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Table 3: SK NACE categories of Slovak companies in database

SK NACE	Category	Number of companies	Number of companies (%)
G	Wholesale and retail trade, repair of motor vehicles and motorcycles	2,210	27.35
M	Professional, scientific and technical activities	1,162	14.38
F	Construction	1,029	12.73
C	Industrial production	743	9.19
Q	Health and social work	515	6.37
	Others	2,422	29.98
	Sum	**8,801**	**100**

Source: own processing

To analyse the dependencies between variables, we use Spearman´s correlation coefficient, which is a measure of the linear relationship between two quantitative variables. For the determination of the degree of dependence, we will proceed from the following scale (Ratner, 2009):
- weak correlation, if $0<|r|<0.3$,
- moderate correlation, if $0.3\leq|r|<0.7$,
- strong correlation, if $0.7\leq|r|<1$.

In addition to the value of the correlation coefficient, we always list the p-value of the test of its statistical significance, based on which we identify the correlations that are statistically significant and the ones that are not.

Following hypothesis were tested:

H_1: There is a statically significant relation between level of earnings EAT and region, where the company does business.

H_2: There is a statically significant relation between level of earnings EAT and size of the company (small and medium-sized and large companies).

H3: There is a statically significant relation between level of earnings EAT and sector, in which company does business.

H_4: There is a statically significant relation between level of earnings EAT and total assets.

4.   Results and Discussion

As mentioned before descriptive statistics was used for analysis of level of earnings in the return-earnings relation. We set the main analysed variables defined in previous chapter. Namely we have calculated ROA, ROE, ROS, ROI, ROCE, EAR, EBT, EBIT, EBITDA and NOPAT. Results are shown in following tables 4 and 5.

Table 4: Descriptive statistics of return indicators of Slovak companies in %.

	ROA		ROE		ROS		ROI		ROCE	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Mean	7.01	6.80	16.60	17.22	4.77	4.35	7.53	7.29	16.29	16.86
Modus	3.73	1.16	56.02	31.91	2.76	10.55	3.73	1.16	56.02	31.91
Median	5.18	4.82	14.62	15.30	3.17	2.95	5.84	5.41	14.33	14.84
St. Dev.	6.24	6.16	13.54	14.29	4.77	4.18	6.21	6.13	12.79	13.59
Minimum	0.00004	0.0003	-24.04	-26.16	0.00004	0.001	0.0001	-1.07	-22.19	-22.73
Maximum	27.86	25.53	69.79	67.63	23.98	18.18	27.86	25.53	56.43	55.91

Source: own processing

The average values of selected return indicators showed similar values in analysed years 2018 and 2019. There is no significant increase or decrease in indicators. The arithmetic means,

as an indicator of descriptive statistic, is very sensitive to extreme values. "Outliers" were identified and excluded. Nevertheless, there are higher or lower values that can distort results. In these cases, it is appropriate to use a median to determine the mean location in the set. Median refers the value in the middle of our dataset. The average value of the ROA indicator for 2019 of the evaluated companies was 7.01%. We can conclude that 1€ of total assets of companies brought on average 0.07€ of profit. The median that the ensemble divides into two equally large parts was 5.18%. The standard deviation measures the amount of variation of a set of data values. A low standard deviation indicates that the data points tend to be close to the mean of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values. The lower its value is, the more likely we can assume the occurrence of values at the level of the arithmetic mean. The values of ROA indicators of the given companies differed from the average by ± 6.24%. A relatively large difference can be seen between the minimum and maximum value of the indicator, which means that the companies in the database manage their assets in different ways, some value them efficiently, while others should work to make their management more efficient.

On average, companies from the analysed database achieved a return on equity of 16.60% in 2019, which means that 1€ of equity generated almost 0.17€ of profit. The indicator should be higher than current interest rates so that the owners try to keep their capital in the company and not look for other investment opportunities. In contrast to the previous indicator, there was a year-on-year decrease. The median value in 2019 reached 14.62%. Individual companies differ from the average according to the standard deviation by ± 13.54%. As can be seen from the table 4, the values of the minimum and maximum reach quite high, respectively low numbers, due to the fact that the equity of some companies in the database was negative. This could be due to losses in previous years. On the contrary, the very high ROE´s of companies could have been caused by the high profits and low equity capital available.

The average value of ROS indicator in 2019 achieved 4.77%. So, 1€ of sales accounted for 0.05€ of profits. Some literature state that the usual value of the indicator is considered to be around 10%. In our case, it is clear that the value is relatively far from the usual one. However, in the year-on-year comparison, we see that the indicator had an increasing tendency of almost, which is positive, as the ROS value should have an increasing trend over time. The most common value was 2.76% and the value of median was 3.17%. Individual companies differed from the average by about ± 4.77%. The maximum achieved value of the indicator was 23.98%, on the other side, the minimum was only 0.00004%.

The average value of ROI was 7.53%, so we can conclude that 1€ of the total capital tied up in the companies in 2019 generated 0.08€ of profit. When comparing 2019 with 2018, we recorded only a very small increase in the value of the return on invested capital. The most frequent companies achieved a return on invested capital of 3.73%. Based on the median, we can say that half of the companies achieved an ROI of more than 5.84% and the other half recorded a lower return on invested capital. The height of the indicator for individual companies differed from the average by ± 6.21%. The lowest value recorded was only 0.0001%.

The average company in 2019 reached the value of the ROCE indicator of 16.29%. This means that for 1€ of the company's long-term resources, which are equity and long-term liabilities, there was 0.16€ of profit. As part of the previous ones, this indicator also decreased year-on-year. The median in this indicator divided the group into two parts with a value of 14.33%. The standard deviation determined that the given enterprises are ± 12.79% away from the average. The relatively high values at the minimum and maximum could be caused by negative equity in this indicator as in the ROE indicator or also by high long-term liabilities of enterprises.

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Table 5: Descriptive statistics of level of earnings of Slovak companies in €.

	EAT		EBT		EBIT		EBITDA		NOPAT	
	2019	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Mean	6,423.5	4,961.5	8,553.7	6,781.3	9,510.2	7,617.9	16,418.9	13,302.8	7,513.1	6,018.2
Modus	2,469.0	210.0	208.0	1,763.0	2,208.0	1,748.0	2,156.0	1,763.0	1,744.3	1,380.9
Median	3,668.0	3,330.0	5,015.0	4,564.0	5,936.0	5,170.0	11,209.0	9,505.0	4,689.4	4,084.3
St. Dev.	7,331.9	4,736.9	9,126.8	5,945.5	9662.4	6,473.6	15,892.9	11,745.5	7,633.3	5,114.2
Min.	1.00	1.00	3.00	6.00	3.00	6.00	22.00	6.00	2.37	4.74
Max.	51,171.0	26,399.0	56,880.0	28120.0	56,880.0	28,141.0	106,574.0	50,654.0	44,935.2	22,231.4
Lower Q	1,746.5	1,622.0	2,614.0	2,355.5	2,988.0	2,606.5	4,536.0	3,928.5	2,360.5	2,059.1
Upper Q	8,249.5	6,950.0	10,847.0	9,417.0	12,473.5	10,847.5	23,340.5	19,642.7	9,854.1	8,569.5

Source: own processing

Analysing the level of earnings, we can conclude that the most significant increase can be seen in the indicator EAT – 29.47%. The least significant increase can be seen in the indicator EBIT DA, 23.42%, which may be related to the unchanged depreciation policy. The average value of depreciation (added to EBIT in calculation EBIT DA) increased year-on-year.

The average net profit in the database of monitored companies amounted to 6 423.51€ which companies had at their disposal for their further activities, investments or innovations. This level of profit for the year 2019 was caused by the removal of a large number of extreme values, which mainly companies were kept as large entities, and thus companies with higher net profits. Between 2018 and 2019, an increase in net profit of more than 29% can be seen. We consider this trend to be a positive perspective for the future. We can mark 2 469€ as the most common amount of net profit. The median value of 3 668€ divides the database into two equally large parts, and the standard deviation says that individual companies differ from the average by 7 331.9€. The upper quartile determined that only 25% of the companies analyzed achieved an EAT higher than 8 249.5€, and based on the lower quartile, we can say that up to 75% of companies achieved a pre-tax profit of 1 746.5€.

In 2019, companies achieved an average pre-tax profit of 8 553.77€. Compared to the previous year, this is an increase of around 26%. As indicated by the mode, the value of 2 208€ of the pre-tax profit occurred the most. In the case of EBT can be stated that half of companies achieved EBT indicator higher than 5 015,0 € in 2019 and half of companies achieved EBT indicator lower. Upper quartile and lower quartile can be defined as the other indicators of location. Again, on the example of EBT, we can illustrate the results. The upper quartile of EBT is 10 847,0 € in 2019. It means that only 25% companies achieved EBT higher than 10 847,0 € in 2019, remaining 75% companies achieved EBT lower than upper quartile value. The lower quartile of EBT is 2 614,0 € in 2019. It means that 75% companies achieved EBT higher, remaining 25% achieved EBT lower than lower quartile value.

The profit of companies before deducting taxes and interest expenses in 2019 amounted to an average of 9 510.2€. Comparing the years 2019 and 2018, it is clear that the indicator had a growing trend of almost 25%. The highest frequency in the monitored set of EBIT indicators was 2 208€, the average value from which 50% of companies have a higher and 50% lower profit before taxes and interest expenses is 5 936€. Companies differed from the average amount of the given profit by ± 9 662.4 €.

The monitored companies in the analyzed database achieved an average of 16 418.9€ in profit before interest, taxes and depreciation in 2019, which represents a growing trend of more than 23% year-on-year. The average value of this monitored level of profit was 2 156€ and the median determined that half of the companies had a higher profit before interest, taxes and

depreciation than 11 209€. The given companies differ from the average by 15 892.9€ according to the standard deviation.

The average net operating profit after tax in 2019 was 7 513.1€. This value increased by almost 25% year-on-year. The most common amount of NOPAT was 1 744.3€. Net operating profit of 4 689.4€ is the value from which half of the companies achieved a higher amount of this profit and half a lower one. Based on the standard deviation, it can be assumed that the companies deviated from the average by $\pm$ 7,633.3€.

Table 6: Hypothesis testing

Null hypothesis	Test	Sig.	Decision
The distribution of EAT2019 is the same across categories region	Independent-Samples Kruskal-Wallis Test	0.003	Reject the null hypothesis
The distribution of EAT2019 is the same across categories size of the company	Independent-Samples Mann-Whitney U Test	0.010	Reject the null hypothesis
The distribution of EAT2019 is the same across categories sector	Independent-Samples Kruskal-Wallis Test	0.000	Reject the null hypothesis

Source: own processing

To confirm the existence of statistical dependence in hypothesis presented in Table 6, the one-way ANOVA test was used. P-value was determined by using statistical analysis software SPSS. All three null hypothesis were rejected, therefore we accepted alternative hypothesis and we can state that:

1. There is a statistically significant relationship between level of earnings EAT and region, where the company does business.
2. There is a statically significant relation between level of earnings EAT and size of the company (small and medium-sized and large companies).
3. There is a statically significant relation between level of earnings EAT and sector, in which company does business.

To confirm the existence of statistical dependence in hypothesis 4 we tested the significance of the correlation coefficient. The non-parametric Spearman´s correlation coefficient was determined. According to p-value the hypothesis was rejected, therefore we accepted alternative:

4. There is a statically significant relation between level of earnings EAT and total assets.

Table 7: Hypothesis testing

Correlations				TotalAssets2019	EAT2019
Spearman's rho	**TotalAssets2019**	Correlation Coefficient		1.000	0.515**
		Sig. (2-tailed)			00000
		N		8,081	8,081
	EAT2019	Correlation Coefficient		0,515**	1.000
		Sig. (2-tailed)		0.000	
		N		8,081	8,081

**. Correlation is significant at the 0.01 level (2-tailed).

Source: own processing

Based on the value of Spearman´s correlation coefficient (0,515) we can conclude that there is a moderate positive correlation between level of earnings EAT and region, where the company does business, which is statistically significant. This represents the fact that higher value of the total asset, the higher the level of earnings of the company.

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5.   Discussion

The goal of the presented study was to study the levels of earnings in the return-earnings relation. We confirmed the significance relationship between level of earnings and various characteristics of companies. The study was conducted on the data of Slovak companies in years 2018 and 2019. During our research also some data from 2020 were available, but we didn´t take them into account. This was because of the pandemic Covid-19, which started in beginning of 2020 and stopped the life and businesses all over the world. Therefore, the financial statements and reports, earnings and other variables are strongly affected by this phenomenon. We decided to take into account this limitation of the study and don´t calculate with this year. It would be essential in future research to provide analysis at least two following years (2020 and 2021) to show exact impacts on the level of earnings in the return-earnings relation. However, some studies already provided analysis in this area.

Lassoued and Khanchel (2021) determined the impact of COVID-19 pandemic on earnings management practices in 15 European countries by applying three discretionary accrual metrics as a proxy for earnings management models. They confirm a reduced reliability of the financial reports during the COVID-19 pandemic, because of the significant income-increasing earnings management during 2020. Their finding suggests that firms manage earnings upward by alleviating the level of reported losses to rebuild investor and stakeholder confidence needed to support the economic recovery.

Chen et al. (2021) assume that the severity of local COVID-19 spread can capture the short-run fluctuation of macro-level uncertainty in business environments. The analysis of market reactions also showed that the manipulation of disclosure dates can influence the market price in a favourable direction for firms.

Another point of view represents Gao et al. (2021). They examined the COVID-19 pandemic effect on financial analysts' forecast dispersion. The study also hypothetically discussed and empirically excluded earnings uncertainty explanations.

In the face of crises such as Covid-19, businesses become devastated by greater risk exposure, particularly in currency exchange, supply chain disruption, and fluctuation in commodity prices that cause volatile earnings trends. Higher earnings volatility is frequently associated with greater risk. Consequently, firms could be inspired to engage in earnings management or derivative use as attempts to mitigate earnings volatility (Phua et al., 2021; Marcu, 2021). This study also found that both earnings volatility and derivative use have a positive relationship with earnings management. This implies various points of view on the selected issue and represents possibilities for further research directions.

6.   Conclusions

Earnings management is becoming an increasingly popular topic and therefore is the subject of this paper. The objective of presented paper is to clarify the levels of earnings in the return-earnings relation. We focused on earnings levels of Slovak companies in years 2018 and 2019. By using descriptive statistics and hypothesis testing, we confirmed the existence of statistically significant relation between level of earnings EAT and region, where the company does business, size of the company (small and medium-sized and large companies) and the sector, in which company does business. There is also statistically significant correlation between level of earnings EAT and total assets of the company. Identification of various earnings levels in return earnings relation can be really helpful for businesses. It can help a company to identify which indicators are generating earnings for it and therefore to focus on achieving better results.

Using appropriate statistical tools, the obtained results could be further used to create a regression model for managing earnings management in the Slovak Republic.

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Authors: Velga Vevere, Maria Kovacova,
Iveta Linina

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