COMPARATIVE RISK ANALYSIS OF HUNGARIAN AND ROMANIAN TRADE AND SERVICE COMPANIES

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Abstract: *To sustain the tolerable risk level it is essential to map risk factors. According to the previous, the main aim of our research is to find those factors that affect corporate risk if we measure the corporate risk with the degree of operating and financial leverage. To perform our goal, we have chosen some specific financial ratios of trade and service companies in two neighboring counties of Hungary and Romania. In this research, we performed a comparative risk analysis of Hungarian and Romanian enterprises by investigating the relationship between the degree of operating and financial leverage (DOL, DFL) and specific financial ratios. The database used for risk analysis is based on five-year financial statements data of Hungarian and Romanian companies. To analyze the relationship between operational and financial leverage and financial ratios, we used panel regression models. The panel model combines the analysis of cross-sectional and time series data. The calculations of the comparative corporate risk analysis was performed by using the packages of R statistics system. Based on the results of the analysis we can conclude that the quantile panel regression gives better results than the conventional panel model.*

Key words: *company risk factors, DOL, DFL, financial ratios, quantile panel data model*

1. INTRODUCTION

The risk is one of the most determinative and most controversial questions of economics. Risk assumption is a key element of profit generation and the shareholder capital maximizing. Therefore, the determination of the risk factors is an essential task for companies.

[1] defines risk as a chance, probability of loss, and gives more risk definitions and the most commonly mentioned: the probability of variant results, the deviation from the expected results, the symmetrical chance of gain and loss. [2] defines the risk as "a situation in which there is a possibility of deviation of expected result from the desired result". According to [3] "Risk and uncertainty are the most controversial phenomena in economics. It has never been the subject of controversy that both of them affect economic decisions."

One of the most known risk concepts was formulated by [4] who thinks that there is a difference between risk and uncertainty. In his opinion, the main difference between risk and uncertainty lies in measurability. One of the strongest criticisms of [4] risk concept stems from [5] who states that "monitoring of the past values cannot solve the uncertainty of economic future" and

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"the future human decisions (…) cannot depend on strict mathematical expectations, because this kind of calculations have no basis" [6]. Other authors consider that risk has two components, namely uncertainty, and variability [7, 8]. [9] in [7] deem that variability is the temporal, spatial heterogeneity of values.

According to [10], the economic risk is reflected in the fluctuations of corporate's outputs, that company's management cannot predict that. Many researchers think that economic risk means negative change in revenue, cost and market share. [11] consider that economic risk appears in the dynamics of net operating results and net cash flow. The study deals only with the most relevant corporate risks: the financial and operating degree of leverage.

It is essential to map and determine risk factors to make better decision-making. Moreover, working out activities for managing them should be important, as well.

The main aim of the research is to find those factors that can affect corporate risk. Regarding this, we have chosen to analyze the leverage ratio of Hungarian and Romanian companies.

We have set apart the following issues in the research:

1. Which are the main factors that influence corporate risk?
2. Could we establish a relationship between leverage ratios (Degree of Operating Leverage - DOL, Degree of Financial Leverage - DFL, and Degree of Combined Leverage - DCL) and some financial ratios?

2. REVIEW OF LITERATURE

One of the most important theorems of financial management is the "return-risk trade-off", which means that the increase in profit is in close connection with risk. According to Modigliani's and Miller's proposition II., the extent of return on capital depends on two factors, on the return on assets and the capital structure of the company [12]. The 1st component is significantly influenced by the nature of company's operating activities, so it is called operating leverage (operational or business risk). The 2nd component is determined by the company's financing policy and by the cost of debt, of which name in English literature is *leverage*. The M&M proposition II. shows that if the company does not use debt financing, the Return on equity ratio (ROE) is equal with Return on assets ratio (ROA). Therefore, the 2nd component appears only if debt financing appears in a company's capital structure, which means higher risk exposure. The 2nd component can be considered as a financial risk (financial leverage). Debt financing may increase the ROE if the ROA > debt cost, and the financial leverage and the financial risk also increase [13, 14].

In the corporate finance books, we have found that firm's risk measure is the DCL which consists of two essential elements: DOL and DFL. The DOL and DFL indicators are elasticity indicators.

The investigation of leverage ratios provides a comprehensive financial statement analysis because the leverage ratios are based on financial statements. The DOL is dealing with the top of the income statement (ending to EBIT) and the DFL with the bottom of it (from EBIT). Based on this, [15] called the DOL a first-stage indicator and the DFL as a second-stage indicator.

The DOL reflects the ratio of the changes in Sales and changes in Earnings Before Interest and Taxes (EBIT). According to [16] the DOL shows the percentage changes in operating income caused by 1% changes in sales. Therefore, the sensitivity of sales to economic cycles and changes in macroeconomic rules can significantly affect the company's profit. The degree of changes in operating profit means how sensitive is the operating profit to the changes in the level of fixed costs. The higher fixed cost proportion in the total cost results in higher operating profit sensitivity, which leads to a higher operational risk suggested by greater DOL value [17]. Thus, the variable and fixed cost proportion in the total costs can have a determinative impact on the operating profit. Therefore, the changes in fixed costs cause positive (similar way) changes in the DOL value. We can say the DOL value is the function of a company's fix costs [18].

DFL shows the percentage changes in net profit, which results from changes in operating profit. The DFL also highlights the close relationship between the DFL and cost of debt. If there is no debt in a company's capital structure, the DFL value is 1, which means that 1% changes in operating profit cause 1% changes in net income. If interest expenses appear in Income Statement, the DFL value is greater than 1, which means a higher financial risk level. So, DFL is relevant when the company uses debt financing [19]. There is a direct, positive relationship between DFL value and the cost of debt.

In favorable circumstances, the higher DFL value provides an opportunity to corporate's profit increase when the ROA is greater than the cost of debt. However, this also leads to a rise in a company's financial risk. According to [17], under favorable circumstances, the cost of debt may increase the profit. At the same time, in case of companies with debt financing, the volatility of profit influences the EBIT in a greater way. The volatility increases the risk of capital investment of company [17, 13].

The firms' total risk expressed by the DCL is the product of the DOL and the DFL. DCL shows the effect of 1% changes in sales on the net profit. The interpretation of leverage ratios may differ because they are industry and activity-dependent [20].

To determine the relationship between the degree of DOL, DFL, and financial ratios, we are calculated financial ratios.

3. RESEARCH METHODOLOGY

The database used for the comparative analysis is based on data from financial statements of registered (settled) SMEs from neighboring counties (Bihor and Hajdú-Bihar) of two neighboring countries (Romania and Hungary). We used as database the financial statements in a simplified form of SMEs. An essential aspect of the data collection was the distribution of several sectors of countries' annual net sales. The major parts of the two counties corporate database were trading companies and firms acting in the processing industry. In Hungary, we used 172 SMEs' from Hajdú-Bihar County, of which 74.42% operate in trading and 25.58% companies in the processing industry. In the Romanian Bihor County, we used 173 SMEs' statements, of which 78.03% were trading firms and 21.97% processing firms.

We have chosen SMEs because more than 90% of companies in the European Union are classified in SMEs. A similar situation can be seen in the chosen two neighboring countries. The SME sectors have key economic roles in both countries.

To answer the research questions, we analyzed the relationship between DOL and DFL and financial ratios for Romanian and Hungarian companies. We used the method of panel regression. Panel data analysis can be viewed as multilevel hierarchical modeling which allows us to examine different variables. Compared to traditional data analysis methods one advantage of panel data analysis is that very heterogeneous variables can be included in the sample [21]. The panel model combines the analysis of cross-sectional and of time series data. The panel data analysis is widely used in social science, and its great advantage is the introduction of idiosyncratic effect, which means both the individual and time effect on the dependent variable [22]. We applied the random panel regression. The calculations were performed using the 'plm' package of R statistical system.

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Due to the large dispersion of the variables involved in the analysis, we felt it necessary to apply quantile regression. Quantile regression models allow the researcher to account for unobserved heterogeneity and heterogeneous covariates effects, while the availability of panel data potentially allows the researcher to include fixed effects to control for some unobserved covariates [23].

[24] developed a new regression method to evaluate the impact of changes in the distribution of the independent variables on quantiles of the unconditional distribution of a dependent variable. Their approach builds on the concept of the influence function what is a widely used tool in the robust estimation in statistics or econometrics. We applied the 'uqr' package of R statistical system what is suited to estimate and conclude inference for unconditional quantile regression[156]. The 'urq' function returns a Recentered Influence Function regression of given quantiles. Panel data analysis is performed by extending the correlated random effects (CRE) model to an unconditional quantile regression framework. The 'urqCI' function provides standard errors and confidence intervals for the recentered influence function regression fit 'urq' function. The inference is obtained through a Bayesian bootstrap drawing observation weights from a Dirichlet distribution.

4. RESULTS OF RESEARCH

In our study, we want to determine what financial indicators that affect leverage degree ratios significantly. Because we have cross-sectional and time series data, we chose the panel regression model to perform the investigation. For both countries, we calculated the fixed and random effect panel regression models, and we used Hausman-test to compare the results. In

[156] https://cran.r-project.org/web/packages/uqr/uqr.pdf (author: Nembrini, S., 2017)

case of operating leverage (DOL), the one-way random effect panel regression models were consistent in case of both countries. The results of the random effect panel regression model of two countries are disclosed in Table A1.

We can determine from Table A1 that none of the coefficients are significant at least 5% of the significance level. Romanian companies' net working capital to current assets ratio and Hungarian companies' current liabilities to total assets ratio and return on sales ratio are significant at 10% level. Based on the results in Table A1, we cannot determine the explanatory variables which influence the DOL as a result variable significantly. The cause of the problem is probably the high values of coefficient of variation in the case of the explanatory variables. Table A1 also shows that the coefficients of the Romanian and Hungarian regression equations differ significantly in the majority of variables. However, the individual values of the regression coefficients are not interpretable because they are not significant, which means that it cannot be explicitly stated that they are different from zero. The reason we do not get good estimations is probably that the main statistical characteristics of financial ratios for the four years showed that the investigated indicators are strongly heterogeneous in both countries. In the case of Romanian companies, at the 80% of investigated indicators, the coefficient of variance showed values greater than 100%. Moreover, in the case of Hungarian companies, the situation is a little bit worse, because at the 90% of calculated indicators the coefficient of variance was greater than 100%.

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Regarding extremely high dispersion (high coefficient of variance), the regression analysis was not suitable for the proper exploration of relationships between degree of operating leverage and financial ratios. We decided to use the quantile random panel regression rather than the conventional random panel regression to solve the previous problem. Using quantile regression, we can divide the total population into more homogeneous classes. We use the same variables for the quantile random panel regression as we did before.

Table 1 shows the results of quantile panel regression for Romanian companies. The results of various quantiles in Table 1 show that each of them differs considerably in point of both regression coefficients and significance levels. Table 1 shows that there are 9 variables out of the 21 explanatory variables, which are significant on at least 5% in case of each quantile. (Significant variables for each quantile are emphasized in the Table 1.) Based on the results, it can be stated that to divide the database to the quantiles improves the result of the regression. Considering the results reported in Table 1, we can also conclude that variables affecting DOL as a risk indicator are in Romania:

1. Ratio of current assets to total assets;
2. Ratio of non-current assets to current assets;
3. Total asset turnover rate;
4. Inventory turnover rate;
5. Turnover rate of current liabilities;
6. Operating return on sales;
7. Ratio of operating profit to total cost;
8. Ratio of non-current liabilities to total assets;
9. Return on sales.

Table 1: Quantile panel regression for Romanian companies (dependent variable: DOL)

Name of regression coefficients	Quantile 0.2		Quantile 0.4		Quantile 0.6		Quantile 0.8	
	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level
Intercept	-2.77754	***	-0.95500	***	0.35565	*	1.91703	***
Ratio of current assets to total assets	1.38179	***	1.93882	***	1.88473	***	6.81949	***
Ratio of non-current assets to current assets	0.09722	**	-0.10605	**	0.24524	***	0.82145	***
Current ratio	0.04174	-	0.02262	-	0.04560	***	-0.18295	***
Quick ratio	0.02516	-	0.12589	***	-0.12334	**	-0.38315	**
Cash ratio	0.03511	-	-0.26389	**	0.06544	*	0.27136	**
Total asset turnover rate	-0.18284	***	-0.10084	***	-0.13516	***	-0.38391	***
Inventory turnover rate	0.00005	***	-0.00007	***	-0.00004	***	-0.00006	***
Receivables turnover rate	-0.00142	***	-0.00065	***	-0.00020	-	-0.00017	-
Turnover rate of current liabilities	-0.01008	**	-0.00442	*	-0.00389	**	0.05200	**
Operating return on sales	38.83583	***	18.57444	***	-13.24005	***	-36.77787	***
Operating return on assets	1.64521	.	1.77922	***	2.93384	***	1.04758	-
Ratio of operating profit to labor cost	0.00339	**	0.00102	-	-0.00619	***	-0.06477	*
Ratio of operating profit to total cost	-16.60066	***	-6.50635	*	9.07825	***	21.18482	***
Debt to equity ratio	0.00216	***	0.00093	***	0.00136	-	0.00620	***
Ratio of current liabilities to total assets	-0.65688	**	-0.66564	**	-0.11211	-	-1.62624	*
Ratio of non-current liabilities to total assets	-1.71079	***	-1.29043	***	-1.27931	***	-1.11972	**
Ratio of net profit to operating profit	-0.04516	-	0.06300	***	0.04026	.	0.02312	.
Ratio of net working capital to current assets	-0.64870	***	-0.31101	-	0.31564	***	0.56107	***
Return on sales	-13.94901	***	-6.02248	***	5.12818	***	21.76196	***
Return on assets	0.56658	-	-1.78443	***	-4.77752	***	-9.74370	***
Return on equity	-0.09915	***	-0.11122	***	0.08531	.	0.16017	***

Source: own calculations using R statistical system

Then, using the same financial indicators, we also performed the analysis of Hungarian companies, the results of which are shown in Table 2. Concerning Table 2, we can be made similar statements as we did in case of Table 1. Table 2 shows that there are 10 variables out of the 21 explanatory variables, which are significant on at least 5% in case of each quantile. Considering the results reported in Table 2, we can also conclude that variables affecting DOL as a risk indicator are in Romania:

1. Ratio of non-current assets to current assets;
2. Current ratio;
3. Quick ratio;
4. Total asset turnover rate;

5. Receivables turnover rate;
6. Operating return on assets;
7. Debt to equity ratio;
8. Ratio of current liabilities to total assets;
9. Return on assets;
10. Return on equity.

Comparing the variables affecting the risk factor DOL considering the two countries, we can see in Table A2 that there are only two cases which have identicalness. Thus, it can be concluded that there are different variables in the investigated two counties what have an impact on the DOL.

Table 2: Quantile panel regression for Hungarian companies
(dependent variable: DOL)

Name of regression coefficients	Quantile 0.2		Quantile 0.4		Quantile 0.6		Quantile 0.8	
	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level
Intercept	-1.38112	-	1.23235	***	3.85182	***	3.07976	.
Ratio of current assets to total assets	0.08342	-	-0.75835	*	-0.77391	-	11.14859	***
Ratio of non-current assets to current assets	-0.63101	***	-0.22488	***	-0.22670	***	0.44385	*
Current ratio	-0.32640	***	-0.12962	***	-0.14636	***	-0.24689	***
Quick ratio	0.51793	**	-0.11171	***	-0.07957	***	-1.04160	***
Cash ratio	-0.20629	-	0.32294	***	0.34111	***	1.68592	***
Total asset turnover rate	-0.37976	***	0.06596	***	0.22715	***	1.71795	***
Inventory turnover rate	-0.00123	***	-0.00014	-	0.00388	**	0.01791	***
Receivables turnover rate	-0.00019	***	-0.00020	*	-0.00015	***	-0.00041	***
Turnover rate of current liabilities	0.03698	***	0.01780	***	0.02932	***	0.07083	**
Operating return on sales	-7.68653	***	-2.90525	***	-0.74136	-	9.17527	-
Operating return on assets	37.45601	***	5.30531	*	-15.58483	**	-111.86858	***
Ratio of operating profit to labor cost	1.09112	***	0.48379	***	-0.13166	***	0.32739	-
Ratio of operating profit to total cost	0.17216	-	-0.06503	***	-0.06333	***	-0.15806	***
Debt to equity ratio	0.01592	***	0.00658	***	0.01033	***	0.06680	***
Ratio of current liabilities to total assets	-4.33811	***	-1.65357	***	-1.80221	***	-9.70510	***
Ratio of non-current liabilities to total assets	-0.03210	-	-0.07935	.	0.31864	***	1.91722	***
Ratio of net profit to operating profit	0.04814	-	-0.01381	-	0.05541	-	0.45353	*
Ratio of net working capital to current assets	-0.61745	***	0.36436	***	-0.24105	-	-4.02039	***
Return on sales	9.39910	***	5.45884	***	-2.54396	-	-10.79040	-
Return on assets	-40.20173	***	-4.87104	*	17.98023	***	109.52046	***
Return on equity	-0.16002	***	-0.11870	***	-0.14278	***	-0.66300	***

Source: own calculations using R statistical system

We have also performed the analysis for DFL the result of which is shown in Table A3. Table A3 shows that we obtained better results considering DFL than DOL. For DFL, there are 7 significant variables at Romanian companies, while only two at Hungarian ones. The significant variables for Romanian companies are:

1. Ratio of current assets to total assets;
2. Operating return on sales;
3. Operating return on assets;
4. Ratio of operating profit to total cost;
5. Ratio of current liabilities to total assets;
6. Ratio of net working capital to current assets;

7. Return on assets.

Even so, we performed the quantile panel regression with DFL. The quantile panel regression results related to the DFL for the Romanian companies is shown in Table 3. Table 3 shows that there are 7 variables out of the 21 explanatory variables, which are significant on at least 5% in case of each quantile. Considering the results reported in Table 3, we can also conclude that variables affecting DOL as a risk indicator are in Romania:

1. Total asset turnover rate;
2. Operating return on assets;
3. Debt to equity ratio;
4. Ratio of non-current liabilities to total assets;
5. Return on sales;
6. Return on assets;
7. Return on equity.

We can see there are only two variables that appear in both enumerations. The dividing can cause the difference to quantiles.

Table 3: Quantile panel regression for Romanian companies
(dependent variable: DFL)

Name of regression coefficients	Quantile 0.2		Quantile 0.4		Quantile 0.6		Quantile 0.8	
	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level
Intercept	0.93011	***	1.15074	***	1.30017	***	1.84945	***
Ratio of current assets to total assets	-0.71172	***	-0.37256	***	-0.30028	***	-0.20447	-
Ratio of non-current assets to current assets	-0.10427	***	-0.01536	.	0.00380	-	-0.00429	-
Current ratio	0.00591	-	-0.01458	**	-0.00043	-	0.00886	-
Quick ratio	-0.00665	-	0.02662	***	-0.04612	*	-0.05109	*
Cash ratio	-0.03869	.	0.02916	.	0.02128	-	-0.09338	***
Total asset turnover rate	-0.08167	***	-0.02922	***	-0.04692	***	-0.08006	***
Inventory turnover rate	0.00002	***	-0.00002	***	-0.00001	***	-0.00001	.
Receivables turnover rate	0.00016	-	-0.00033	***	-0.00068	***	-0.00072	***
Turnover rate of current liabilities	0.00274	**	0.00015	-	0.00336	***	0.00547	.
Operating return on sales	-13.28193	***	-1.83679	.	0.77077	**	-0.17525	-
Operating return on assets	3.97017	***	2.02962	***	1.91147	***	3.48932	***
Ratio of operating profit to labor cost	0.01691	**	0.00575	***	0.00178	***	0.00041	-
Ratio of operating profit to total cost	6.85398	***	-0.45459	-	-2.09775	***	-2.49052	***
Debt to equity ratio	0.00117	*	-0.00024	**	-0.00077	***	-0.00144	***
Ratio of current liabilities to total assets	0.00112	-	0.12490	**	0.28100	***	0.39441	*
Ratio of non-current liabilities to total assets	-0.96240	***	-0.17598	**	0.19186	***	0.82794	**
Ratio of net profit to operating profit	0.04873	**	-0.00473	**	-0.00648	-	0.06295	**
Ratio of net working capital to current assets	0.13162	**	0.07951	***	0.07592	***	0.05820	-
Return on sales	5.76000	***	1.86607	***	1.79197	***	3.80542	**
Return on assets	-3.67941	***	-1.89355	***	-2.31208	***	-4.91999	***
Return on equity	0.01624	*	-0.03377	***	-0.00894	***	-0.03005	***

Source: own calculations using R statistical system

The quantile panel regression results related to the DFL for the Hungarian companies is shown in Table 4. Table 4 shows that there are also 7 variables out of the 21 explanatory variables,

which are significant on at least 5% in case of each quantile. Considering the results reported in Table 4, we can also conclude that variables affecting DFL as a risk indicator are in Romania:

1. Ratio of non-current assets to current assets;
2. Cash ratio;
3. Total asset turnover rate;
4. Ratio of operating profit to labor cost;
5. Ratio of net profit to operating profit;
6. Return on sales;
7. Return on assets.

Table 4: Quantile panel regression for Hungarian companies (dependent variable: DFL)

Name of regression coefficients	Quantile 0.2		Quantile 0.4		Quantile 0.6		Quantile 0.8	
	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level	Regr. coeff.	Signif. level
Intercept	0,71503	***	0.98007	***	1.28699	***	1.87846	***
Ratio of current assets to total assets	-1,74987	***	0.01914	-	-0.25346	***	-0.61525	***
Ratio of non-current assets to current assets	-0,11879	***	-0.01626	***	0.00825	*	0.19248	***
Current ratio	-0,02423	-	-0.01667	***	-0.02065	***	-0.04327	***
Quick ratio	-0,1074	***	-0.00017	-	0.00548	**	0.01823	***
Cash ratio	0,06578	***	0.00814	*	0.00988	***	0.02157	**
Total asset turnover rate	0,01	*	-0.02196	***	-0.01767	***	-0.0239	*
Inventory turnover rate	0,00042	-	0.00004	**	-0.00015	***	-0.00093	***
Receivables turnover rate	-0,00004	**	0	-	0	-	-0.00002	***
Turnover rate of current liabilities	0,00215	***	0.00384	***	0.00108	**	0.00014	-
Operating return on sales	2,818	***	0.75177	***	-0.1926	***	-0.5582	.
Operating return on assets	-11,58798	***	0.40607	-	4.45334	***	14.27037	***
Ratio of operating profit to labor cost	0,07124	***	0.01901	***	0.01802	***	-0.10973	***
Ratio of operating profit to total cost	0,01621	*	0.00048	-	0.0018	*	-0.00658	***
Debt to equity ratio	-0,00014	-	0.00028	***	-0.00033	***	0.00024	***
Ratio of current liabilities to total assets	0,2183	***	0.06215	*	0.014	-	0.13343	*
Ratio of non-current liabilities to total assets	0,09	***	0.0079	-	0.02386	*	-0.02279	-
Ratio of net profit to operating profit	0,08819	***	0.02168	***	-0.01277	***	-0.03161	***
Ratio of net working capital to current assets	0,0998	***	-0.02669	**	0.07139	***	0.11125	.
Return on sales	-7,8481	***	-0.67757	***	0.37032	***	2.24695	***
Return on assets	4,20486	***	-0.69364	*	-4.70343	***	-14.55143	***
Return on equity	0,00498	***	0.00045	***	-0.00041	-	-0.02008	***

Source: own calculations using R statistical system

Comparing the variables affecting the risk factor DFL considering the two countries, we can see in Table A4 that there are only three cases which have identicalness. Thus, it can be concluded that there are different variables in the investigated two counties what have an impact on the DFL.

5. CONCLUSION

In case of variables with large dispersion, the panel regression cannot be used effectively for the total population. The quantile panel regression can provide better results than conventional panel regression because it divides the database into quantiles. The quantile panel regression

helped to determine variables affecting DOL and DFL. The result of the calculations, we can conclude that the variables which affect the DOL and the DFL are different. There are only two variables that are the same for both DOL and DFL: Ratio of non-current assets to current assets and Total asset turnover rate. The results also show that there are differences in case of significant variables related to the neighboring counties which affect the DOL and the DFL. Further testing possibilities should be developed to the quantile panel regression method To make the results more plausible.

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Appendices

Table A1: The results of the random effect panel regression of two countries (dependent variable: DOL)

Name of ratios	Romanian companies		Hungarian companies	
	Regression coefficients	Sign of significance level	Regression coefficients	Sign of significance level
Intercept	-1.87969	-	5.58533	-
Ratio of current assets to total assets	4.75741	-	4.75175	-
Ratio of non-current assets to current assets	1.14602	-	-0.86119	-
Current ratio	0.04272	-	-0.32974	-
Quick ratio	0.77788	-	-0.04602	-
Cash ratio	-0.40884	-	0.30189	-
Total asset turnover rate	0.18937	-	0.50826	-
Inventory turnover rate	-0.00008	-	-0.00438	-
Receivables turnover rate	-0.00580	-	-0.00054	-
Turnover rate of current liabilities	-0.05020	-	0.07102	-
Operating return on sales	-37.08724	-	-36.17881	-
Operating return on assets	24.01520	-	-19.23182	-
Ratio of operating profit to labor cost	-0.10124	-	0.30979	-
Ratio of operating profit to total cost	-21.16890	-	-0.04416	-
Debt to equity ratio	-0.01003	-	0.02346	-
Ratio of current liabilities to total assets	-0.32020	-	-8.47957	.
Ratio of non-current liabilities to total assets	5.28031	-	2.238510	-
Ratio of net profit to operating profit	1.25936	-	-0.76348	-
Ratio of net working capital to current assets	-8.79095	.	-3.26226	-
Return on sales	62.24046	-	35.71478	.
Return on assets	-5.3116	-	19.90651	-
Return on equity	-1.35167	-	-0.18497	-

Source: own calculations using R statistical system

Table A2: Significant variables in case of the two analyzed countries studied (dependent variable: DOL)

Name of regression coefficients	Significant variables in case of Romanian companies	Significant variables in case of Hungarian companies
Ratio of current assets to total assets	X	
Ratio of non-current assets to current assets	X	X
Current ratio		X
Quick ratio		X
Cash ratio		
Total asset turnover rate	X	X
Inventory turnover rate	X	
Receivables turnover rate		X
Turnover rate of current liabilities	X	
Operating return on sales	X	
Operating return on assets		X
Ratio of operating profit to labor cost		
Ratio of operating profit to total cost	X	
Debt to equity ratio		X
Ratio of current liabilities to total assets		X
Ratio of non-current liabilities to total assets	X	
Ratio of net profit to operating profit		
Ratio of net working capital to current assets		
Return on sales	X	
Return on assets		X
Return on equity		X

Source: own calculations using R statistical system

Table A3: The results of the random effect panel regression of two countries (dependent variable: DFL)

Name of ratios	Romanian companies		Hungarian companies	
	Regression coefficients	Sign of significance level	Regression coefficients	Sign of significance level
Intercept	3.26803	.	0.55834	-
Ratio of current assets to total assets	-6.73609	**	3.24412	-
Ratio of non-current assets to current assets	-0.16866	-	0.02388	-
Current ratio	0.01992	-	0.00885	-
Quick ratio	0.10154	-	0.04759	-
Cash ratio	0.11256	-	-0.05871	-
Total asset turnover rate	-0.17875	-	0.01048	-
Inventory turnover rate	-0.00002	-	0.00214	-
Receivables turnover rate	-0.00189	-	-0.00077	***
Turnover rate of current liabilities	-0.01649	-	-0.00519	-
Operating return on sales	-74.23527	**	5.21685	-
Operating return on assets	16.73808	**	-11.82564	-
Ratio of operating profit to labor cost	0.02760	-	0.00587	-
Ratio of operating profit to total cost	36.28955	*	0.06746	-
Debt to equity ratio	-0.00173	-	-0.00096	-
Ratio of current liabilities to total assets	5.57983	**	-3.13837	.
Ratio of non-current liabilities to total assets	1.07431	-	0.53390	-
Ratio of net profit to operating profit	0.16893	-	0.16082	-
Ratio of net working capital to current assets	3.68717	***	-2.64009	**
Return on sales	12.65036	-	-6.38735	-
Return on assets	-15.69104	*	15.22678	-
Return on equity	0.08660	-	-0.10421	-

Source: own calculations using R statistical system

Table A4: Significant variables in case of the two analyzed countries studied (dependent variable: DFL)

Name of regression coefficients	Significant variables in case of Romanian companies	Significant variables in case of Hungarian companies
Ratio of current assets to total assets		
Ratio of non-current assets to current assets		X
Current ratio		
Quick ratio		
Cash ratio		X
Total asset turnover rate	X	X
Inventory turnover rate		
Receivables turnover rate		
Turnover rate of current liabilities		
Operating return on sales		
Operating return on assets	X	
Ratio of operating profit to labor cost		X
Ratio of operating profit to total cost		
Debt to equity ratio		
Ratio of current liabilities to total assets		
Ratio of non-current liabilities to total assets	X	
Ratio of net profit to operating profit		X
Ratio of net working capital to current assets		
Return on sales	X	X
Return on assets	X	X
Return on equity	X	

Source: own calculations using R statistical system