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The Performance Determinants of Trading Companies: A Stakeholder Perspective

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Abstract

This research aims to propose a model adding to the competitiveness of companies by identifying factors that determine the profitability of the selected companies (both publicly traded and unquoted private companies of all sizes). Another aim is to prove a dichotomy between the motivation of equity holders and senior lenders as far as acceptable financial leverage is concerned. The paper is innovative based on its combination of several different factors influencing corporate profitability (i.e. firm-specific effects: current ratio, labor cost ratio, working capital financing ratio, long-term financing ratio, return on sales, age of the firm; industry-specific effects and other macroeconomic effects) and by assessing determinants concerning the interests of shareholders and other stakeholders using a panel regression analysis with fixed effects. The authors prove that the determinants of the operating performance of Czech trading companies differ substantially when the performance is measured by ROA or by ROE. This clearly shows discrepancies between the equity holder interest to maximize their returns on investment and the other stakeholder interests. Specifically, the authors have found that the leverage, both in terms of working capital and long-term financing, negatively impacts returns on assets. On the other hand, it positively impacts returns for equity holders both in the Wholesale and Retail sub-samples. Interestingly, other determinants of operating performance, such as capital intensity, labor cost ratio, historical profitability, and macroeconomic variables, are of comparable significance, impacting both the ROA and ROE analyses.

Keywords: financial leverage, profitability, return on assets, return on equity, retail, wholesale JEL Classification: M21, O12



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1. INTRODUCTION

In a market economy, financial position and business performance must be constantly assessed. Various performance benchmarks serve as feedback to companies evaluating the steps they have taken and enabling them to adjust the direction they have taken, all to maintain competitiveness. If companies achieve undesirable results, performance analyses may show what contributed to such results and whether the situation can be reversed. Performance and its benchmarks depend

on individual users, who may be not only owners (shareholders), but also customers, suppliers or banks as providers of external capital.

Performance in terms of profitability is the main criterion for the allocation of capital, which explains why this concept is given such considerable attention both in the field of rationalism and in the area of empiricism. Within empiricism, many studies have been conducted for different reasons, with various factors examined to determine ways to increase business performance. The authors intention was to analyze existing studies focused on corporate profitability, to define an area not yet examined, and to provide evidence of profitability determinants based on panel data of Czech companies, including not only publicly traded companies but also unquoted private companies of all sizes (including SMEs).

Following this intention, the goal was set to create a model that identifies factors determining the profitability of a selected sample of businesses to provide evidence of a dichotomy between the equity holders and senior lender motivation with respect to acceptable financial leverage. For this purpose, it was first necessary to define possible profitability factors in different effect categories: effects specific to individual companies, industry-specific effects and macroeconomic effects. These factors were defined based on already existent relevant theories and previous empirical research.

The paper is innovative in cumulating several factors in different categories of effects on corporate profitability. It further shows our evaluation of effects concerning the interests of shareholders and other stakeholders as well as our analyses of the situation using a sample of wholesale companies and retail companies separately. This research, therefore, provides relevant and more precisely practical conclusions as a contribution to the academic literature and the results can also serve as a guideline for individual stakeholders in managing the profitability of their investments.

The paper is organized as follows: Section 2 provides an overview of related literature. The data set and adjustments to it are detailed in Section 3. The methodology is explained in Section 4, followed by our results, including robustness checks in Section 5. Concluding remarks are provided in Section 6.

2. THEORETICAL BACKGROUND

Before creating the mentioned model, an extensive analysis of published research results was performed. The authors have found substantial literature on the capital structure of publicly traded companies (de Britto et al., 2018; or Iqbal et al., 2020) in developed markets. Nevertheless, the literature on unquoted companies and private companies (particularly SMEs) in emerging markets is relatively scarce (Vithessonthi & Tongurai, 2015; Guariglia, 2008).

The survey of scientific sources led to the selection of factors that might determine corporate profitability. The aim was to select a sufficient number of factors to ensure the comprehensiveness of the model and to implement a dynamic element of profitability.

Many authors have addressed the relationship of one factor to profitability, for example, Ruckova

& Wolny (2017) and Stekla & Grycova (2016), with both teams of researchers examining the relationship between profitability and capital structure. Other authors focused only on company-specific determinants (e.g. Nunes & Serrasqueiro, 2015; Samo & Murad, 2019). Their research has already provided a more accurate picture of the impact on corporate profits. These authors chose determinants such as size, age, liquidity, long-term debt, and R&D expenditure.

The use of not only firm-specific but also industry-specific factors as well as macroeconomic factors in this article is based on research conducted by Pervan et al. (2019). This structure was found to be very appropriate, as it is also necessary to become aware of the differences in profitability of companies from other countries and other sectors. These authors emphasize the importance of such studies, as many sectors lack empirical models of dynamic analysis. The limited number of studies which have been conducted in the countries of Central and Eastern Europe include firm-specific, industry-specific and macro-economic variables as determinants of firm profitability using dynamic panel analysis. Unlike the selection of factors by Pervan et al. (2019), this article will also focus on the Leverage Effect, as it is an important factor in profitability, especially from the banking point of view, according to many authors (Chen & Anh, 2020; Catania & Nonejad, 2020). The following paragraphs will deal with the rationale for individual factors, with the information broken down into firm-specific, industry-specific and macroeconomic determinants.

Especially financial leverage can be included as a corporate determinant, a position which is based on the fact that increasing the share of foreign capital in the total capital (i.e. higher indebtedness) of the company has a positive effect on the return on capital, provided that the company can increase the value of each additional unit of debt more than the debt interest rate amounts to. Asset turnover and financial leverage tend to lead to an inverse relationship (a company with a low asset turnover uses debt financing). Evidence of the inverse relationship between the profit margin and asset turnover is mentioned, for example, by Duričová & Myšková (2010). The researchers use the decomposition of the profitability ratio of total capital, or more precisely, of total assets (ROA, Return on Assets) and note that it is necessary to realize that higher debts are reflected both in the profit margin (a profit may decrease due to a higher interest attributable to the increase in the loan capital) as well as in the asset turnover (the denominator value rises by the rise in the loan capital). Based on the analysis of Dutch SME firms, Degryse et al. (2010) have revealed a negative relationship between profitability and leverage and have also shown that more Dutch SME firms use long-term financing compare to short-term financing. Pan & Liu (2018) provide evidence that the leverage effect for the short-term volatility component plays a more important role than the leverage effect for the long-term volatility component in terms of influencing performance. In addition, Huang et al. (2020) observed a strong relationship between short-term financing and financial performance in small and medium enterprises.

The amount of personnel costs (or labor costs) can also be included among the corporate factors. This factor is used in the research, for example, by Beyer & Hinke (2018), who came to it by decomposing the ROA ratio. These authors state that "National economic policies usually emphasize the aspects of tax rates and labor costs, assuming they are the most important sources of competitive advantages". At the corporate level, it can be assumed that there will be a direct connection between the increase in the unit labor costs and the reduction in corporate

profitability. Pervan et al. (2019) have shown that labor costs play a significant role in determining firm's profitability (with negative sign) in the case of the Croatian manufacturing industry.

Corporate liquidity is another essential factor from the corporate determinants. Permanent solvency is one of the preconditions for the successful existence of a company; therefore, the probability of its preservation is a part of the overall characteristics of company's financial soundness. This may explain the existence of many studies (Rico et al., 2020), which link liquidity to long-term corporate performance and the probability of company's survival. In the 90s of the 20th century, mainly due to the influence of the US banking circles, there was a trend to use as a benchmark for company's creditworthiness (the security of provided loans and their repayment) the condition when this ratio was at least 2:1 - i.e., a situation where one unit of current liabilities is covered by two units of current assets. However, many publications (Vijayakumaran & Vijayakumaran, 2019) refute this ratio and point to the need to assess this factor in terms of a particular company or sector.

The length of company's activity may also be included among the corporate determinants. The reason for the positive effect of the factor may be the company's experience and reputation, which will also facilitate financing, but, on the other hand, bureaucracy and lower flexibility of older companies may have a negative effect, which may hinder innovations (Pervan et al., 2019). Many authors have noted the significance of this factor for corporate performance in their research. Still, some demonstrate a positive relationship between the company's age and its profitability (Maity et al., 2019), while some show that the corporate profitability decreases with the company's age (Hirsch et al., 2014).

Capital intensity, defined as the amount of capital needed to generate a given volume of sales, belongs to the industry-specific factors. Capital-intensive sectors must obtain initial financial resources for investments in fixed assets. Still, if this equipment is at a sufficient technological level, higher productivity and thus higher profitability can be expected in the long term (von Auer et al., 2019). Empirical evidence shows rather inconclusive results concerning the effect of capital intensity on firm's value performance. Operating profitability could be positively impacted by capital efficiency (Palazzi et al., 2020) that can be achieved, for example, by standardizing operations (Arora et al., 2020). Contrary to it, capital investment to excess capacity (typically related to the mature phase of the industry) could lead to a negative relationship (Dickinson & Sommers, 2012; Lee, 2010).

Especially the country's economic potential can be labeled as a macroeconomic factor, and it occurs in connection with the quantitative increase (growth) of potential gross domestic product. GDP measures the performance of the economy. It is an indicator summarizing newly created values. Therefore, it can be deduced that a change in the economic performance of the economy will also affect the performance of individual entities of the national economy, which is confirmed by numerous studies. For example, Killins (2020) or Alsaleh & Abdul-Rahim (2018) show on panel models that GDP can be considered a significant factor in profitability. So, studies demonstrating that the demand for corporate performance grows in times of economic growth, which has a positive effect on profitability, predominate, e.g., Pereira et al. (2019) or Kilinc & Berberoglu (2019).

The general price level of goods and services in the economy (inflation) can be regarded as another macroeconomic indicator. Soukhakian & Khodakarami (2019) give evidence that inflation is significantly related to economic added value. Rising prices of goods and services increase input costs for businesses, and there is a rise in interest rates and taxes. Businesses with fixed income (contracted orders) can reduce their purchasing power or demand. This will reduce the economy's performance (Li, 2012).

Last but not least, PRIBOR 3M (Prague Interbank Offered Rate) can be included in the macroeconomic indicators as a reference value of interest rates on the interbank deposit market, which is fixed for the Czech National Bank and the Czech Forest Club from reference bank quotations for sale. Credit products provided by commercial banks to companies are usually tied to the announced PRIBOR rate. These rates affect not only short-term loans but also long-term loans because of relatively new loan products. Previously, contractual interest rates were fixed for a certain period (for 1, 3, 5 years, etc.), but in the last few years, it is also possible to obtain a loan with the so-called variable interest rate. This rate is then usually derived from the reference rates of 1M PRIBOR or 3M PRIBOR, and the interest is in the given amount above these rates. Pribor 3M is considered a crucial interest rate, e.g., in studies by Kocisova (2015).

Having a unique dataset in hand, the authors aim to provide a comprehensive empirical analysis of profitability determinants in the Czech trading sector. Our goal is to test the dichotomy between Retail and Wholesale sub-sectors and between equity holders and other stakeholders. This can be particularized into the following three hypotheses, which will be further verified by the authors:

H1: Historical profitability (in terms of margin) and current financial indebtedness are significant determinants of trading companies' profitability both in terms of ROA and ROE.

H2: Wholesale companies tend to be more levied and achieve lower profitability.

H3: Financial leverage has a positive effect on returns on equity both in the retail and wholesale segments.

3. RESEARCH OBJECTIVE, METHODOLOGY AND DATA

Since it is assumed that besides lagged profitability, the financial indebtedness is one the most crucial determinants/contributor of/to overall firm's profitability (Stierwald, 2010), we decided to test it. The authors chose those sectors that tend to rely more on external financing in line with the idea of capital structure differentiated across industrial sectors (Talberg et al., 2008; Vithessonthi & Tongurai, 2015). Therefore, our sample focuses on trading firms and consists of two predefined sectors 1) Wholesale trade ("Wholesale") and 2) Retail trade ("Retail") (both excluding motor vehicles and motorcycles trade) corresponding to NACE code G46 and G47 respectively.

This study is based on a unique data sample composed of individual complete financial statements (audited where available) of companies conducting their business in the Czech Republic from 2008 to 2018. Data were predominantly collected from the Commercial Register and internal sources of Česká spořitelna, a.s. Raw data set has been adjusted following the approaches

suggested by Bena & Ondko (2012) and Vithessonthi & Tongurai (2015), i.e., removing firms i) with a detected very high leverage (the ratio of the total senior long- and/or short-term debt to the total assets) above one and/or ii) with the ratio of net worth to the total assets less than 10%. No cut-off points were imposed in terms of total assets or turnover (sales) since it could deprive of the overall complexity of the Czech real economy. Financial statements of foreign parent companies and consolidated and group financial statements were removed to avoid potential double counting.

The final unbalanced data set (after all adjustments) contains 447 Czech firms (including locally established branches of foreign companies) with complete annual financial statements from 2008 to 2018, thus consisting of 4,637 firm-year observations.

To capture potential differences in profitability, the determinants' magnitude (across the selected sectors of the national economy) of the following variables were employed (including the industry and firm-specific ones). For the comprehensive overview, please see Table 1.

Variables	Abr.	Unit	Description	
		ROA		EBIT and
	Return on Assets		n.a.	EBITDA/Total
Endogenous variables				Asset
	Return on Equity	ROE		EBIT and EBIT-
			n.a.	DA/Equity
Exogenous variables				
T 1		CI		Fix Assets/Sales
Industry specific	Capital Intensity	CI	n.a.	(Turnover)
		CD		Current Assets/
Firm specific	Current ratio	CK	n.a.	Current Liabilities
	Labor Cost ratio LC	LC	n.a.	Labor Cost/Sales
				(Turnover)
	Working Capital	WCE		WC financing/
	Financing ratio	WCF	n.a.	Total Assets
	Long Term Fi-	TATE		LT financing/
	nancing ratio	LIF	n.a.	Total Assets
	D . C 1	DOC		EBIT and
	Return on Sales	ROS	n.a.	EBITDA/Sales
	A	ACE		Number of years
	Age of the firm	AGE	years	in the business
	Firm size	ТО	CZK	Turnover
				Earnings Before
	Profitability I	EBITDA	CZK	Income Tax and
				Depreciation

Tab. 1 - Overview of used determinants. Source: own research

	Profitability II	EBIT	CZK	Earnings Before Income Tax
Macroeconomic	GDP growth	GDP	% p.a.	Annual GDP growth
	Inflation	СЫ	% p.a.	Customer price index
	3M Pribor	3MPRI- BOR	% p.a.	Annual 3M PRI- BOR average

Prior to the actual regression-based quantitative analysis of selected determinants on the overall sectoral profitability, we have carefully inspected our data sample for potential inconsistencies and analyzed statistical properties of variables of our interest (the results are in Table 2).

The minimum values (equal to zero) of Capital Intensity represent firms with very low fixed assets share (in line with the wholesale and retail segments). In contrast, the zero values of Labor Cost are caused by relatively low personnel costs predominantly outsourced (thus reflected in the item of services cost in the firm's P&L statement). The company Age variable corresponding to zero value reflects the company's 1st year of business operation. The financial/banking leverage ratios, both long-term (LTLF) and short-term (WCF) ones amounting to zero, correspond to debt-free firms from the perspective of long-term and/or short-term bank loans. Financial leverage is predominantly represented by senior bank loan financing since the Czech Republic, with its underdeveloped capital markets, is a rather bank-driven economy. Thus, other forms of financing such as intragroup loans (usually subordinated to senior bank debts, and therefore evaluated by the bank as "quasi-equity"), corporate bonds, etc. represent only a minor fraction of external financing of the Czech companies in the selected sectors (the average value is calculated for 0.76% of the total balance sheet in our sample, the year-to-year average value varies between 0.5-1.4% of the entire balance sheet). The effect of trade credit (in the form of account receivables and payables) is demonstrated by the Current Ratio (CR).

G46	Mean	Std. Dev.	Min.	Median	Max.	MAD	IQR	CV
X3MPRIBOR	0.01130	0.01033	0.00	0.01	0.04	0.01	0.01	0.91
Age	15.70242	6.01185	0.00	16.00	37.00	5.93	9.00	0.38
CI	0.44938	3.12587	0.00	0.11	129.14	0.13	0.20	6.96
СРІ	0.01943	0.01622	0.00	0.02	0.06	0.01	0.02	0.83
CR	7.54061	305.45276	0.01	1.38	18302.00	0.55	0.91	40.51
GDP	0.01711	0.02665	-0.05	0.02	0.05	0.01	0.04	1.56
LC	0.07980	0.08570	0.00	0.07	3.00	0.05	0.07	1.07
LTLF	0.05355	0.10172	0.00	0.00	0.88	0.00	0.06	1.90
ROA.I	0.06527	0.08942	-1.00	0.05	0.85	0.04	0.08	1.37
ROA.II	0.08967	0.09165	-1.00	0.07	0.86	0.06	0.08	1.02
ROE.I	0.18402	0.25994	-3.58	0.13	1.84	0.13	0.21	1.41

Tab. 2 - Statistical properties of variables. Source: own research

ROE.II	0.25752	0.28395	-3.58	0.20	2.16	0.18	0.26	1.10
ROS.I	0.02946	0.32071	-17.33	0.02	2.04	0.03	0.04	10.89
ROS.II	0.05264	0.33093	-17.33	0.04	2.04	0.03	0.05	6.29
WCF	0.15095	0.15447	0.00	0.11	0.86	0.16	0.26	1.02
Equity ratio	0.43031	0.21559	0.10	0.39	1.00	0.23	0.32	0.50
G47	Mean	Std. Dev.	Min.	Median	Max.	MAD	IQR	CV
X3MPRIBOR	0.01095	0.01006	0.00	0.01	0.04	0.01	0.01	0.92
Age	17.14836	7.77313	1.00	17.00	61.00	5.93	9.00	0.45
CI	0.37291	0.65397	0.00	0.17	5.34	0.18	0.28	1.75
СРІ	0.01898	0.01584	0.00	0.02	0.06	0.01	0.02	0.83
CR	2.29604	12.24568	0.07	1.32	389.60	0.70	1.17	5.33
GDP	0.01728	0.02659	-0.05	0.02	0.05	0.01	0.04	1.54
LC	0.14801	0.26047	0.00	0.11	4.39	0.07	0.09	1.76
LTLF	0.10197	0.14238	0.00	0.02	0.81	0.03	0.18	1.40
ROA.I	0.06511	0.09180	-0.22	0.05	0.77	0.04	0.07	1.41
ROA.II	0.10242	0.10365	-0.16	0.08	1.13	0.06	0.08	1.01
ROE.I	0.17760	0.25866	-0.65	0.11	2.49	0.13	0.21	1.46
ROE.II	0.28758	0.31880	-0.55	0.19	2.54	0.16	0.28	1.11
ROS.I	0.03522	0.08433	-0.68	0.02	0.84	0.03	0.04	2.39
ROS.II	0.06292	0.10846	-0.47	0.04	0.86	0.04	0.05	1.72
WCF	0.08753	0.11702	0.00	0.03	0.64	0.04	0.15	1.34
Equity ratio	0.44626	0.20942	0.10	0.44	1.00	0.25	0.35	0.47

Note: MAD - Mean of absolute deviation, IQR - Interquartile range, CV - Coefficient of variation

The profitability variable itself can be defined in many different ways and measured by a whole set of indicators, such as Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS), Return on Capital Employed (ROCA), etc. For our analysis, ROE and ROA ratios are selected as the most relevant indicators since these two predominantly employed concepts represent the expectation dichotomy between firm's equity holders and senior debt providers concerning profitability. Both ratios will alternatively be calculated based on the Earnings before Income Tax (EBIT) and the Earnings before Income Tax and Depreciation and Amortization (EBITDA) in order to cover potential discrepancies (alternative depreciation and amortization schemes) when assessing the corporate performance resulting from the accrual and cash flow approach. The ROS characteristic serves as a control variable representing historically achieved profitability and will not be explicitly stressed throughout the following text.

As expected, the calculated profitability both for ROA and ROE characteristics is higher for EBITDA than EBIT (it is valid for mean and median values as well). The average of ROA II (based on the EBITDA calculation) is higher by 14.6% in Retail than Wholesale (0.102 versus 0.089). Differences in the ROA II figures are driven by the substantial CAPEX level discrepancies across the selected sectors, which leads to a notable dissimilarity in tangibility (accompanied by different depreciation and amortization volumes). The achieved average tangibility ratio (fixed assets scaled by total assets) is almost 52% higher in Retail as compared to Wholesale (0.4 versus

0.27). This difference is valid throughout all years.

The variety in the asset structures on balance sheets is also accompanied by differences in the respective capital structures. In terms of the total leverage (the senior bank debt scaled by the book value of total assets), different average values are obtained in Wholesale (0.204) and Retail (0.151). To better understand the capital structure, we analyze the indebtedness further - current assets financing the leverage (working capital financing typically with up to one-year availability period) and fixed assets financing the leverage (long-term financing typically with the availability period above one year) are defined. Analyzing the summary statistics of the two financing indicators across the Retail and Wholesale sub-samples reveals interesting differences. The average WCF in Wholesale is higher by approximately 67.8% (0.141 versus 0.084 in Wholesale and Retail, respectively). At the same time, the calculated average LTF ratio is higher in Retail by approximately 92.5% (0.053 versus 0.102 in Wholesale and Retail, respectively). Interestingly enough, we observe the WCF ratio lower and the LTF ratio to be higher for Retail than for Wholesale in every single year of the analyzed period.

The average labor cost ratio follows a growing trend in the analyzed period jointly for both segments, and it increased between 2008 and 2018 by 12.5% in Wholesale and by 27.1% in Retail. As expected, the Retail segment seems to be more labor-intensive regardless of new trends (E-commerce, home deliveries, etc.), with the average labor costs being higher by approximately 85.7% (0.079 versus 0.147 in Wholesale and Retail, respectively).

An interesting development can be observed when comparing capital intensity. Until 2011, the average annual capital intensity in Wholesale was higher than in Retail (the annual average since 2011 was 0.368 versus 0.313). Shortly after that, the capital intensity was reversed (the annual average from 2012 was 0.381 versus 0.430 in Wholesale and Retail). In 2017, it turned around again (the annual average was 0.393 versus 0.377 in Wholesale and Retail). The non-synchronous development of Turnover (TO) as well as Total Assets (TA) over the respective period of time are the main drivers behind this change.

The given ratio produced a relatively stable growth over the observed period of time, showing an increase in annual average by 53% and 8.7% in Wholesale and Retail, respectively.

To summarize, the authors collected a 10-year panel dataset including firm-specific and economywide variables to detect determinants of profitability concerning assets (i.e., ROA) as well as efficiency of a company to generate returns on equity of its owners' investments (i.e., ROE). The authors use panel ordinary least squares regression to estimate both stakeholders' perspectives. The former is examined using the following equation:

$\begin{aligned} ROAit &= WCF_{it} + LTLF_{it} + CI_{it} + CR_{it} + LC_{it} + Age_{it} + \\ Age_{it}^2 + TOmn_{it} + EBITDAmn_{it} + ROS_{it-1} + GDP_t + 3MPRIBOR_t + CPI_t + i + \nu_i + \varepsilon_{it} \end{aligned}$ (1)

where ROA refers to the return on assets being defined as EBITDA to total assets, WCF to the weight of working capital financing on the balance sheet (i.e., working capital financing related to total assets), LTLF showing the weight of the long-term financing on the balance sheet. Further, we also include the (sub)sector-specific variable, i.e., the capital intensity (CI), to examine possible differences driven by a specific business model (e.g., e-commerce versus traditional retail companies). The current ratio (CR) and labor cost ratio (LC) are included to check firm-specific liquidity and operating cost structure, respectively, which proved to be significant determinants of corporate profitability as found by Pervan et al. (2019). Further, the authors include the firm's age both at the level and in the square to find a possible non-linear effect of age on profitability since one additional year of business activity might have a different impact on the performance of new companies as compared to stable and well-established companies. Turnover (TO) to control the company's size. The remaining firm-specific variables, EBITDA and last year's profitability (ROS), control the amount of relevant profit (since ROA is defined as EBITDA to total assets in this case), and last year's profitability approximates the efficiency of the company with converting one unit of sales to EBITDA. Finally, multiple macroeconomic variables such as the GDP growth, 3-month PRIBOR, and the inflation rate filtering out effects of the business cycle are included.

Since the authors are also interested in determinants affecting returns for equity holders, the regression of the return on equity (defined as EBITDA to total equity) on the same set of the independent variable as in Equation 1 is calculated:

 $ROE_{it} = WCF_{it} + LTLF_{it} + CI_{it} + CR_{it} + LC_{it} + Age_{it} + Age_{it} + Age_{it}^{2} + TOmn_{it} + EBITDAmn_{it} + ROS_{it-1} + GDP_{t} + 3MPRIBOR_{t} + CPI_{t} + v_{i} + \varepsilon_{it}$ (2)

Since the authors use panel data for our analysis, they follow the standard process of choosing the appropriate methodology for the longitudinal data set. First, the authors test for fixed effects comparing the pooled OLS and fixed effects showing clear supremacy of the fixed-effects model (the F-test p-value is significantly below 0.001). The zero hypothesis is rejected for both specifications as outlined in Equation 1 and Equation 2. The inconsistency of the random effects model is in both model modifications detected by the Hausman test (p-value < 0.01). Therefore, panel OLS regressions of both models using individual fixed effects model and employ robust standard errors are estimated, namely panel-corrected standard errors as proposed by Ikpesu et al. (2019). R statistical software has been used for analysis.

Further, the potential multicollinearity issue is also examined. As expected, the variance inflation factor (VIF) remains safely below 2 for all regressors except for age, EBITDA and turnover. But still, the VIF of these variables is well below 10, being the rule-of-thumb threshold value for the potential multicollinearity issue.

4. RESULTS AND DISCUSSION

Table 3 summarizes the estimation results of Equation 1. The entire sample shows that there is a significantly negative effect of both variables related to financing, i.e., the weight of working capital financing and long-term financing on the company's balance sheet. The proportion of labor costs to total revenues (a negative effect), EBITDA and last year's profit margin (a positive effect) rank among other variables that significantly affect ROA. Concerning the macroeconomic variables, a significantly positive effect can be observed on the GDP growth as well as on the 3-month PRIBOR.

When examining Wholesale and Retail separately, our analysis has revealed interesting differences between the sub-samples. In the case of Wholesale similar to Pervan et al. (2019)

on Croatian manufacturing industry, a powerful negative effect of labor cost intensity on the operating performance can be observed, while the Retail companies do not demonstrate this effect. Despite the fact that Retail is more labor-intensive than Wholesale, there is observed no significant impact of the relative change in personnel costs on the cost structure of Retail companies since they are most likely more flexible in transferring the increase in input prices (in this case, a larger portion of revenues expended on labor costs) than Wholesale. On the other hand, it is clear that the operating performance of companies in Retail is significantly negatively affected by the capital intensity of their business models, as suggested by Dickinson & Sommers (2012) or Lee (2010) in the context of the US restaurant industry, while the capital intensity in Wholesale remains insignificant. The importance of capital intensity suggests that the general CAPEX-lighter business models (such as e-commerce) report higher returns on their assets. When examining the last year's profitability, the significantly positive effect was detected only in the case of Retail. The authors, therefore, assume that Retail can generate stable profitability given by the defined distribution channels and its local oligopoly/monopoly position of its business, which enables it to be more flexible in keeping stable prices/margins by reflecting cost changes in final expenses, while Wholesale trades more in standardized commodities accompanied by lower flexibility (long-term contracts with predefined parameters, such as price, payment conditions and so on), which considerably limits its ability to adjust prices/margins in the short term.

When looking at the effect of the importance of financing on the balance sheet structure, the significant and negative impact in both sub-samples in the case of working capital financing is evident (the difference of the respective slope parameters is not statistically significant). On the other hand, an interesting difference in the effect of long-term financing weight on return on assets can be observed. It has been discovered that significance holds only for the Retail sub-sample, which suggests that Retail needs higher LT financing for investments into equipment that is fully amortized within five years (the majority of equipment would fall into the property class with a 5-year recovery period according to the cost recovery system applied in the Czech Republic) and has a more considerable year-to-year impact on the development of total balance sheet and thus on the return on assets. In contrast, in the case of Wholesale, the effect cannot be distinguished from zero.

ROA	All	Wholesale	Retail
Age	-0.003 * (0.002)	-0.001 (0.002)	-0.006 (0.003)
Age_sq	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
CI	0.000 (0.001)	0.000 (0.001)	-0.074 *** (0.012)
CR	0.000 (0.000)	0.000 (0.000)	-0.001 *** (0.000)
LC	-0.030 * (0.014)	- 0.163 *** (0.038)	-0.016 (0.015)
WCF	-0.061 *** (0.017)	-0.055 ** (0.018)	-0.082 * (0.038)
LTLF	-0.052 ** (0.019)	-0.042 (0.022)	-0.086 * (0.034)
GDP	0.125 * (0.052)	0.115 (0.060)	0.039 (0.096)

Tab. 3 – Determinants of operating performance (ROA): estimation results (standard errors in parentheses). Source: own research

СРІ	0.031 (0.111)	0.100 (0.121)	-0.150 (0.258)
X3MPRIBOR	0.896 *** (0.193)	0.842 *** (0.230)	0.908 ** (0.342)
EBITDAmn	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)
TOmn	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
ROS2_lag	0.028 * (0.011)	-0.034 (0.017)	0.352 *** (0.053)
Adj. R² (in %)	48.5	46.8	58.6

*** p < 0.001; ** p < 0.01; * p < 0.05.

Another interesting difference was detected in the case of the effect of last year's profitability on ROA in this year. In the case of Retail, a strong positive impact is demonstrated, whereas in the case of Wholesale, the last year's profitability has no effect on this year's operating performance. This is accompanied by the ability of Retail to create a local oligopoly/monopoly position, which enables it to keep stable selling prices and/or transfer higher input costs on the customers. Retail is, therefore, able to keep relatively stable profitability/margins in the long-term period.

Second, the authors analyze returns attributable solely to equity holders, i.e., the return on equity (ROE). Table 4 sets forth estimation results of the model presented in Equation 2.

ROE	All	Wholesale	Retail
Age	-0.028 *** (0.005)	- 0.024 *** (0.006)	-0.034 *** (0.009)
Age_sq	0.001 *** (0.000)	0.001 ** (0.000)	0.001 ** (0.000)
CI	-0.002 (0.002)	-0.002 (0.002)	-0.089 ** (0.034)
CR	0.000 (0.000)	0.000 (0.000)	-0.002 ** (0.001)
LC	-0.076 (0.041)	-0.570 *** (0.112)	-0.041 (0.044)
WCF	0.192 *** (0.049)	0.156 ** (0.053)	0.370 *** (0.111)
LTLF	0.388 *** (0.056)	0.341 *** (0.067)	0.421 *** (0.098)
GDP	0.249 (0.152)	0.317 (0.171)	-0.301 (0.305)
СРІ	0.120 (0.296)	0.427 (0.324)	-1.000 (0.751)
X3MPRIBOR	1.753 ** (0.621)	1.561 * (0.732)	2.602 * (1.154)
EBITDAmn	0.001 *** (0.000)	0.001 *** (0.000)	0.001 ** (0.000)
TOmn	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
ROS2_lag	0.028 (0.032)	-0.189 *** (0.052)	0.647 *** (0.150)
Adj. R ² (in %)	51.5	48.9	63.1

Tab. 4 – Determinants of returns on equity (ROE): estimation results (standard errors in parentheses). Source: own research

*** p < 0.001; ** p < 0.01; * p < 0.05.

Compared to the analysis based on ROA, we have found a significant negative effect of age on the return on equity, similar to Pervan et al. (2019), confirming performance deterioration over the firms lifetime. Moreover, these authors have found that this effect is non-linear, with a bending point of approx. 21.9 years in Wholesale and 27.5 years in Retail. As in the case of ROA, capital intensity has a significant and negative effect on ROE; in addition, ROE in Retail is negatively affected by the liquidity ratio. As for Wholesale, it is evident that the impact of labor cost weight is significant and negative in the case of the ROE analysis as well.

However, the most interesting discrepancy between the ROA and ROE determinants is in the variables related to financing. There is significant evidence of different effects of long-term and working capital financing on performance related not to total assets but equity. A significantly positive impact of the financing weight on the company's balance sheet is revealed. These mixed results correspond to the findings of other authors such as de Jong et al. (2008), Frank & Goyal (2009) and Vithessonthi & Tongurai (2015).

These results are similar to Pan & Liu (2018), who stressed the importance of the effects on short-term volatility components on operating performance, as well as Huang et al. (2020), who observed a strong relationship between short-term financing and financial performance of small and medium enterprises. It has also been found that the effect of working capital financing is significantly more robust in the case of Retail as compared to Wholesale, whereas the hypothesis of the slope coefficients being equal for the sub-samples cannot be rejected in evaluating the effect of long-term financing. This shows the main goal of entrepreneurs who aim to increase the return of invested equity. Higher working-capital funding leads to higher profits without any additional use of an entrepreneur's financial resources, thus it also leads to higher ROE.

As in the case of ROA analysis, a significantly positive effect of 3-month PRIBOR and EBITDA was found. Kocisova (2015), for example, provides evidence of the crucial role of 3MPRIBOR. At the same time, the local economic environment had been experiencing a period of decreasing, consequently stable and low annual average interest rates (the 3-month PRIBOR dropped from 2.25% p.a. in 2006 to 0.76% p.a. in 2017). The difference in the impact of the previous year's profitability on the following year's returns is even more evident in analyzing ROE, since significant effects showing opposite signs were found. This fully corresponds with assumption that, while Retail operates in a defined market with a unique product and can create a local oligopoly/monopoly due to the distribution channels which enable it to maintain stable prices or to increase them in the case of increasing costs of inputs, Wholesale operates in a market with relatively standardized products and commodities under predefined conditions (typically set for one year/season) outlined in a general contract, thus these firms face limited prices/cost transferability. The results confirm the hypothesis of the different perspectives of individual stakeholder groups. More specifically, financing can generate attractive returns to shareholders who aim to achieve as high return as possible on their own resources invested as on all assets employed.

Robustness checks

First, the definitions of ROA and ROE have been changed to the ones more frequently used in the literature. As discussed, the authors primarily use the "cash" definition of returns with EBITDA instead of EBIT. Thus, the models with return indicators based on operating profit (EBIT) are also used. The determinants of operating performance (ROA) – ROA based on EBIT (estimation results with standard errors) are available on request. It has been revealed that the same conclusions

regarding the effects of labor costs and capital intensity also apply to the amended definition of ROA based on EBIT. In the current ratio showing the company's liquidity, no significant effects were found, the same result as observed by Sur & Chakraborty (2011). Contrary to this, in Retail in the initial analysis, a negative relationship was detected similar to Nguyen et al. (2020). Macroeconomic variables, as well as the size and profit, show similar results as in the previous case. An interesting difference was found in the effect of past profitability (in this case, defined consistently with the dependent variable as the EBIT margin). A significantly negative impact on the Wholesale sub-sample can be observed, whereas Retail reported an enormously positive effect, making the effect on the entire sample insignificant. Compared to the original analysis, the authors have also discovered a significantly negative impact of age on ROA as defined based on EBIT. The authors presume this might be caused by extensive depreciation and amortization of traditional retail companies as compared to asset-lighter concepts of younger companies on the market, accompanied by the ability of new e-commerce concept to target higher numbers of potential customers, and therefore to generate better fixed-cost-coverage ratio.

The conclusions regarding the effect of financing variables on ROA do not differ substantially from the original case. However, a significant difference was found between the effect of long-term financing in Retail and Wholesale, which means that the negative effect of LTLF on the operating performance is significantly more significant in Retail.

The determinants of return on equity (ROE) – ROE based on EBIT (estimation results with standard errors) are available on request. As in the case of the original ROE analysis, a significantly negative effect of labor cost intensity was found in Wholesale as well as a positive effect of size (measured by turnover) has been detected in both sub-samples. In the case of financing, no significant effect was found. The authors presume this might be driven by the intention of entrepreneurs to optimize operating profitability and to use fixed assets depreciation/amortization methods as the most common tax shield. Therefore, EBIT can be negatively influenced by the applied accounting methodology and does not represent the real profitability of the company.

To summarize the key takeaways concerning our hypotheses, they are outlined above. The results corroborate that past profitability is a significant determinant of profitability (except for the Wholesale for ROA calculation – Equation 1). Still, interestingly enough, the effect was found to be the opposite in Retail and Wholesale companies. As far as leverage (current financial indebtedness) is concerned, the analysis has revealed important discrepancies as well, mainly in terms of different importance of long-term and short-term leverage (only LTLF insignificance of Wholesale for ROA calculation) in the examined sub-samples due to essential differences in the business models of Retail and Wholesale companies. Therefore, the proposed hypothesis H1 can be confirmed only partly. Concerning hypothesis H2, it was found that Wholesale is on average a less profitable and more leveraged sector than Retail. Therefore, this hypothesis can be confirmed. Finally, it can be confirmed that the impact of leverage on returns is substantially different for company stakeholders in general and for pure equity holders. Although leverage has a negative effect on return on assets, it has a significant positive impact on return on equity, thus leading to confirmation of hypothesis H3.

The regional scope of this study, caused mainly by the fact that only the data of Czech companies were available in terms of completeness and consistency (e.g. concerning the debt classification into short-term and long-term debt), is a particular limitation. Nevertheless, the authors believe that findings may also be applied to other markets.

5. CONCLUSION

This analysis has shown that the determinants of the operating performance of Czech trading companies differ considerably when measuring the performance by returns on assets and returns on equity. This fact demonstrates evident discrepancies in the interest of equity holders to maximize their returns compared to that of other stakeholders.

Specifically, we have found that the leverage (both in terms of working capital and long-term financing) is detrimental to returns on assets. On the other hand, it has a positive impact on returns for the company's equity holders both in the Wholesale and Retail sub-samples. Interestingly, other determinants of operating performance such as the capital intensity, labor cost ratio, historic profitability and macroeconomic variables showed comparable significance in terms of the nature of the effect (in terms of sign coefficients) both in the ROA and ROE analyses.

Apart from the opposite effect of leverage on returns when measured concerning the entire balance sheet or merely the owner's equity, which is a common finding both in the Retail and Wholesale segments, there are interesting differences between these two caused by structural differences of the respective business models. Specifically, even if we have determined a similar impact of working capital financing in both sub-samples, there are differences in long-term financing on the return on assets caused by the completely different structure and frequency of required investments into equipment that is necessary for operating the business. Further, the retailers' performance was found to be impacted by the capital intensity of their business as well as the liquidity in terms of the current ratio, whereas neither of these effects were significant for wholesalers. On the other hand, finding that the labor cost ratio significantly affects the performance of wholesalers but not that of retailers confirms the fact that retail companies are more flexible in transferring the growing input prices into output prices.

To sum up, it has been concluded that the determinants of profitability primarily dependent on the nature of the business of either retail or wholesale impact ROA and ROE in a similar way. On the contrary, financial leverage protects returns for equity holders, whereas it is generally detrimental to profitability in relation to its overall resources (i.e. assets). We believe that a broader and deeper understanding of profitability determinants and their mutual interactions is crucial and essential for any decision-maker, as this would lead to potential improvements of overall firm competitiveness both in domestic and international markets.

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