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Article

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Contemporary Economics

Provided in Cooperation with:

University of Finance and Management, Warsaw

Suggested Citation: Mošnja-Škare, Lorena (2024) : Financial performance (dis)parity in post-transition Europe, Contemporary Economics, ISSN 2300-8814, University of Finance and Management in Warsaw, Faculty of Management and Finance, Warsaw, Vol. 18, Iss. 1, pp. 1-16, <https://doi.org/10.5709/ce.1897-9254.523>

This Version is available at:

<https://hdl.handle.net/10419/297645>

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Primary submission: 14.10.2023 | Final acceptance: 17.11.2023

Financial Performance (Dis)parity in Post-transition Europe

Lorena Mošnja-Škare 

ABSTRACT

Decades after the transition processes have spread across Central, Eastern, and South-Eastern Europe (CESEE), the former Soviet Union, and the Baltic, it was interesting to perform the post-transition and non-transition advanced European economies comparison to capture the outcomes of the 'catching-up process'. In this analysis, I tried to reach the results of this 'catching process' using the firm-level accounting data, namely, enterprises' annual accounts rather than countries' national accounts. The goal was to evaluate if post-transition countries' enterprises have reached the financial performance of non-transition countries' enterprises across Europe, three decades after the transition processes began. The research captured firm-level financial performance aspects revealing some differentiators, namely, financial report indicators that differed for the enterprises belonging to post-transition countries in comparison with the ones belonging to non-transition countries in Europe. The findings related to the liquidity, solvency, indebtedness, profitability indicators, and labor intensity ratio were derived by logit regression models. The observations for 569 European companies were provided by Orbis Europe for the year 2021 annual accounts. According to the results, enterprises in post-transition countries, characterized by lower total assets and working capital scale, were likely to have lower profit margins, share of employees' costs in operating turnover, current ratio, and gearing, while higher solvency and liquidity ratio. Mild marginal effects indicated the gap narrowed but with still existing significant disparities, particularly in the field of liquidity.

KEY WORDS: financial indicators, annual accounts, financial performance, transition.

JEL Classification: M41, G30, P27.

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1. Introduction

Decades have passed after early transition processes appeared across Central, Eastern, and South-Eastern Europe (CESEE), the former Soviet Union, and the Baltic with high expectations towards strong market and institutional developments, resulting in higher growth rates of economies in transition.

There was numerous research performed upon transition processes that were going on, with screening studies upon the results reached after a

decade or two (section 2), but there is scarce literature studying the post-transition results using the comparative approach among post-transition and non-transition European countries' enterprises financial ratios. Usually, macroeconomic indicators were exploited to analyze the transition economies convergence process with advanced ones, with fewer studies performed at the firm-level, particularly in the field of firms' annual accounts comparative analysis. While macroeconomic analyses have assessed the transition economies convergence results and provided prognostic models for the long

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run, this research aimed to evaluate their catching-up process with developed economies at the firm's level. The goal was to assess if post-transition countries' enterprises have reached the financial performance of non-transition countries' enterprises across Europe. Considering three decades after the transition processes beginnings passed, lower discrepancies were expected, so the following hypothesis was developed:

H1: The financial performance doesn't differ substantially between European post-transition and non-transition countries' enterprises three decades after the transition.

Just like macroeconomic aggregates derived from national accounts served the convergence analysis, the enterprises' annual accounts served as a relevant source for financial indicators comparisons. So, this research was performed based on annual accounts and financial indicators belonging to randomly sampled enterprises operating in post-transition European countries (CESEE and Baltic countries) in comparison with the ones running their business in non-transition European countries. The comparisons and nonparametric binary logistic regressions were based on 2021 annual accounts indicators. Along with descriptive statistics, logit models were developed over financial indicators of profitability, liquidity, solvency, leverage, turnover, and labor intensity of post-transition and non-transition firms from thirteen European countries, derived from the Orbis Europe financial data for 569 enterprises of various sectors and industries, mostly of small and medium size.

The gap between financial reports indicators belonging to enterprises in post-transition vs. non-transition countries, if persisted, was expected to reflect worse financial performance as presented by lower profitability, turnover, liquidity, solvency, and higher leverage and labor intensity. There were significant negative correlations found for profit margin, the share of employees' costs in operating turnover, current ratio, gearing ratio, working capital, and total assets scale, while positive correlation for liquidity and solvency ratios in the post-transition enterprises group. Although there were clear relations derived from the logit models developed, the financial ratios' marginal effects were not

sharp indicating the financial performance gap has narrowed, except it was still evident in the field of liquidity.

The remainder of this paper is organized into five sections. After the introduction, a short literature review is provided in the second section. The third section describes the data source, defines the variables used, and provides descriptive statistics and methods employed.

The empirical results are presented and discussed in the fourth section, followed by conclusions, research limitations, and future research steps in the fifth section.

2. Literature Overview

Did the results meet the expectations, did the transition economies manage to get closer to catch up with developed ones? The questions arising in each phase of the transition process could look for answers in political, legal, social, institutional, macroeconomic, financial, and other spheres. Although the fields were tightly interrelated, I focused on the literature analyzing this topic from a macroeconomic approach as well as based on microeconomic and financial firm-level approaches.

Based on the neoclassical growth model, empirical studies dealt with the problem of convergence, searching how poorer economies caught up with richer economies with convergence analysis findings that „over the long run, poorer countries move around 2% of the remaining distance towards their steady-state growth path per year” (Rassekh et al., as cited in Mihaljek, 2018, p.3).

Among the available post-transition period literature, it was mostly related to macroeconomic aggregates, GDP, GDP per capita, capital stock, labor force, gross fixed capital formation, unemployment rates, growth rates, and less to the firm-level variables.

Some studies (like Neimke, 2003) used macroeconomic indicators for the financial sector to reach insights into the transition process and progress among CEE (Central and Eastern European) countries in approaching Western financial market standards, to raise investment and growth in such a way.

Svejnár (2002) concluded that after more than a decade, „the income gap between transition and advanced economies has widened, ... while countries

that developed a functioning legal framework and corporate governance have performed better than other countries.“ (p. 3)

According to some studies (Gugler et al., 2013), after 20 years, control structure and institutional quality convergence in the West was still largely incomplete.

Similarly, another research has explored legal and institutional framework impacts in CEE countries and their developments, considering their importance for attracting foreign direct investments. Vučković et al. (2020) have identified the business environment factors of influence on foreign direct investments in five CEE emerging economies (Bulgaria, Poland, Romania, Serbia, and Slovenia) in the period 2006-2016, and various impacts of business regulation and institutional factors relevant for foreign investments attraction were found among the analyzed countries.

Also, after a quarter of a century of transition processes, Havrylyshin et al. (2016) found that rapid reformers far outperformed gradual reformers, proved by empirical correlation between the reforms' speed and relevant measures of economic and social results, and that same trends held over 25 years – „early reform leaders still lead, and most of the laggards still lag“ (p. 22).

Ranjbar et al. (2018) investigated income convergence in 29 transition countries and found that in the 2000s income per capita in most of them was catching up with the USA.

Žuk et al. (2018) explored the real convergence in Central, Eastern and South-eastern Europe and their results showed that CESEE economies have narrowed their gaps to the EU average in terms of GDP per capita since 2000 while a few of CESEE countries that have joined the EU have already reached GDP per capita levels close to this average.

As noted above, usually, the researchers were looking for evidence of the convergence of per capita incomes, GDP per capita, and so on. Some authors examined the macroeconomic performance and explored the topic of catch-up and convergence in transition countries by calculations and comparisons of technical efficiency change, technical change, and the total factor productivity growth (Deliktas & Balcilar, 2005, p.14).

Firm-level studies were focused on inefficiency

reduction, technological changes and innovation, factor productivity growth, competitiveness (Brada et al., 1997; Bierut & Kuźniemska-Pawlak, 2017; Botrić, 2021; Botrić et al., 2017; Jakšić et al., 2020; Kravtsova, 2007; Krammer, 2015; Piesse & Thirtle, 2000; Rusu & Roman, 2018; Stubelj et al., 2017) and similar outputs considered to capture the results of transition processes.

The research on the firm-level total factor productivity in post-transition economies revealed that the speed of catching up of different firms within national economies was correlated with the general economic conditions in each economy. (Botrić et al., 2017). The same study also reminded us that transition economies were rather heterogeneous in catching up with developed economies, some of them demonstrating no improvements in productivity (Bah & Brada, 2009), while the reason for such diversities remained unveiled.

This study aimed to enhance existing knowledge by analyzing annual accounts and financial reports indicators from firms in European post-transition countries. The goal was to investigate whether there remained a difference in financial performance compared to enterprises in non-transition European countries.

The ratio analysis is used for financial, economic, and scientific purposes, also here as an assessment tool of the performance achievements toward advanced non-transition countries companies. „Ratio analysis is indispensable part of interpretation of results revealed by the financial statement. It provides users with crucial financial information and points out the areas which require investigation.“ (Suthar, 2018, p. 1)

Suthar (2018) has provided an overview of ratios and their contribution as proposed, explained or used by various researchers from 1965 onwards, like Horrigan, Patton, Chabotar, Leibowitz, Gonzalez-Bravo, Marginean, and many others. Usually, financial ratios are used in financial statement analysis, performance measurement, decision-making purposes, and several analytic or prognostic model building (like in Klietnik et al.) and here I use them to assess the post-transition vs. non-transition countries enterprises' comparative results.

Financial ratios are the most suitable to become the core component of the fundamental index because

of their ability to depict the various fundamental dimensions of a company (Arnott et al., 2005; Jia & Li, 2015, as cited in Nadar & Wadhwa, 2019).

Nadar and Wadhwa (2019, p. 3-8) have given a theoretical review of financial ratios' role and use for various purposes as analyzed by Gibson, Woelfel, Wang and Lee, Teker, Teker, and Güner, Petroska Angelovska and Ackovska, Drew and Dollery, Dulababu, Bansal and Singh, Sueyoshi, Piotroski (F-Score), Hyde, Young, including Du Pont model for financial reports interpretation and benchmarking, then Beaver, Horrigan, Daniel, Altman, Deakin models, Altman Z-Score, that were developed to assess solvency and firm viability problems, Beneish M score and the Montier C score to evaluate earning management, along with many researchers who used them for the share price prediction, capital structure decisions, valuation purposes.

In this research, I employed financial ratios for another purpose – to serve as a tool for the assessment of post-transition countries firms' discrepancies with the ones in non-transition countries. Rather than the macroeconomic performance of post-transition economies, this research is focused on the financial performance of their enterprises analyzed by financial ratios, compared to the ones in advanced non-transition economies in Europe, three decades after the beginnings of transition processes.

Similar research performed for the period 1998-2004, analyzed the financial effect of the EU enlargement by ten Central and East European countries on the firm's business and financial structure using financial ratios and quantitative analytic techniques to discover if new EU members converged with EU-15 companies' financial statements structure. The research explored productivity, indebtedness, and returns versus the cost of debt to examine the gaps and the results revealed that convergence is „still a long way off“ with only returns versus the cost of debt ratios which „exhibit some approximation“, while productivity and indebtedness ratios showed „scant signs of convergence because of the structural differences in the economic systems of the CEECs, where labor regulation, the situation of the financial system, and tax reform prevent firms from catching up“ (Galizzo, 2010, p. 96).

3. Methods

This section describes the data and methods used to assess the differences in financial performance between the enterprises in selected European post-transition and non-transition countries. Under the term post-transition countries, I included CESEE and Baltic companies that entered the transition processes in the early nineties of the last century, taken as a whole, without intention to perform individual country-specific comparisons that would be outside the extent of this paper.

The data empirically analyzed were exported from Orbis Europe data resource, provided by Bureau van Dijk. This database offers relevant, tested, and comparable data enabling cross-border analysis. According to Orbis Internet user guide:

The presentation of the information follows a tried and tested approach, recognized and approved by leading accountancy bodies and practitioners in the field. The layout of the data is designed for ease of comprehension and uses terminology widely accepted in the financial world. The emphasis is on both consistency in the treatment of accounts, and accuracy in the recording of data. The overriding aim is to provide information in a form, which can be compared meaningfully between companies from varying countries, and within the same company, between different years. The data entry procedures include rigorous checking of individual records and updates as they are entered, with many of the data fields subject to automatic validation on entry. Information on financial and performance ratios is calculated automatically using standard formulas. (2007, p.16)

The set of 569 companies was randomly sampled out of 287.802 active companies of all sizes: large, medium, small, very large; in standardized legal form: public limited companies, private limited companies, sole traders/proprietorships, and partnerships; incorporated in the period 2010.-2020, from Austria, Belgium, Estonia, Finland, Germany, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Croatia, Slovakia, Slovenia. The data were derived from 2021 annual accounts as the most recent accounts available on the export data 11/01/2023. The financial searches excluded companies with no recent financial data and public authorities/states/governments.

Firm-level accounting data were used, which included balance sheet and income statement items, as well as the lists of selected financial ratios related to liquidity, solvency, leverage, turnover, profitability, and labor intensity. The number of enterprise employees, total assets, and working capital data were also included.

Financial categories and performance ratios based on ORBIS data and formulas were calculated as follows:

Current ratio (CURR) = Current assets/Current liabilities

Liquidity ratio (LIQR) = (Current assets – Stocks)/Current liabilities

Profit margin (%) (PRMA) = Profit/loss before tax and extr. items/Operating revenue x 100

Solvency ratio – assets based (%) = Shareholders funds / Total assets x 100

Net assets turnover (NAT) = Operating revenue / (Shareholders funds + Non-current liabilities)

Labor intensity = Cost of employees/Operating revenue (%) (SCT)

Gearing (GEAR) = (Non-current liabilities + Current loans)/ Shareholder funds x 100

Total assets (TOAS) = Fixed assets + Current assets (th.USD)

Working capital (WKCA) = (Stocks+Debtors) -

Creditors (th.USD).

The categories and ratios listed above, together with the number of employees (EMPL) presented explanatory (independent) variables in the further model in section 4.

The dependent variable was defined as follows:

Non-transition countries' enterprises 0

Post-transition countries enterprises 1

This two-category response variable was the outcome of two nonparametric binary logistic regression models developed in the next section.

In the sample, most enterprises were small enterprises, followed by medium-sized, while there were a few large and very large entities, according to Orbis Europe company size classification. The enterprises' size in both groups of post-transition and non-transition European countries companies is presented in Table 1.

According to sector classification, most sampled enterprises belonged to the business services sector both in non-transition and post-transition countries enterprises, followed by travel, personal & leisure, then wholesale and retail in post-transition countries enterprises, and by construction, then banking, insurance, and financial services in non-transition countries enterprises.

Table 1

Sampled Enterprises by Size in Post-transition and Non-transition European Countries

	Company Category			
	Large	Medium sized	Small	Very large
Non-transition countries enterprises	9	48	260	3
Post-transition countries enterprises	2	20	227	0

Note: Company size classification on Orbis Europe:

Very large company - matching at least one of the following:

Operating revenue ≥ 100 million EUR; Total assets ≥ 200 million EUR; Employees ≥ 1,000; Listed

Large company - matching at least one of the following:

Operating revenue ≥ 10 million EUR; Total assets ≥ 20 million EUR; Employees ≥ 150;

Not very large company

Medium-sized company - matching at least one of the following:

Not very large or large company

Small company – all other companies not included in another category.

Source: Orbis Europe

Table 2
Sampled Enterprises by Sector in Non-transition and Post-transition European Countries

		Sector						
		Agriculture, Horticulture & Livestock	Banking, Insurance & Financial Services	Biotechnology and Life Sciences	Business Services	Chemicals, Petroleum, Rubber & Plastic	Computer Software	
NTC		5	25	1	103	2	12	
PTC		7	1	1	67	2	11	
		Construction	Food & Tobacco Manufacturing	Industrial, Electric & Electronic Machinery	Information Services	Media & Broadcasting	Metals & Metal Products	Miscellaneous Manufacturing
NTC		37	2	5	1	2	2	0
PTC		18	3	4	0	2	5	1
		Printing & Publishing	Property Services	Public Administration, Education, Health Social Services	Retail	Textiles & Clothing Manufacturing	Transport Manufacturing	Transport, Freight & Storage
NTC		1	21	19	17	4	1	6
PTC		2	13	9	21	2	0	17
		Travel, Personal & Leisure	Utilities	Wholesale	Wood, Furniture & Paper Manufacturing			
NTC		24	2	20	3			
PTC		33	6	21	3			

Note:
NTC – non-transition countries enterprises.
PTC – post-transition countries enterprises.
Source: Orbis Europe

Table 3
Sampled Enterprises by Countries

	Country (Iso Code)												
	AT	BE	DE	EE	FI	HR	LT	LU	LV	NL	PT	SI	SK
Non- transition countries enterprises	19	85	11	0	41	0	0	4	0	88	72	0	0
Post-transi- tion coun- tries enter- prises	0	0	0	40	0	25	24	0	25	0	0	32	103

Note. Austria (AT), Belgium (BE), Estonia (EE), Finland (FI), Germany (DE), Latvia (LV), Lithuania (LT), Luxembourg (LU), Netherlands (NL), Portugal (PT), Croatia (HR), Slovakia (SK), Slovenia (SI)
Source: Orbis Europe

In the random sample, there were 569 entities from 13 European countries included.

Table 4 presents some descriptive statistics for independent (explanatory) variables in the model: current ratio, profit margin, solvency ratio, liquidity ratio, net assets turnover, gearing, natural logarithm of total assets and working capital, as well as the number of employees including the number of observations, mean, standard deviation and median.

Significant differences, that is, unequal medians were found for SCT, EMPL, TOAS, and WKCA (Mann-Whitney, $p < 0,001$), as well as unequal means for SCT (t-test, $p = 0,001$), EMPL (t-test, $p = 0,004$) and TOAS, WKCA (t-test, $p < 0,001$) indicating lower share of cost of employees in operating revenue in post-transition countries enterprises, which disposed with lower assets and working capital in comparison with non-transition countries companies.

In addition to descriptive statistics methods used, in the next section, there were two logit regression models developed based on Orbis annual accounts

data. There were different methods that could be employed for financial performance topics analysis like discriminant, cluster, principal component, or factor analysis (Curea et al., 2019). For the purposes of financial (dis)parity evaluation under this research, the logistic regression method was selected because of its flexibility and robustness since the financial data from the annual accounts contained outliers as it was noticed by the descriptive statistics overview, while other methods were more sensitive regarding the model assumptions (like multivariate normality required for discriminant analysis). Since the logistic regression served as the classification algorithm, it was convenient to use it with already set-up post-transition and non-transition groups instead of employing clustering methods. Also, the dependent variable in the model was categorical, so logistic regression was more suitable than factor analysis, eventually principal component analysis could be combined with logistic regression in further research with more variables employed. The logistic regression not only could identify the specific financial ratios con-

Table 4
Descriptive Statistics

	Count	Mean	Stdev	Median
CURR (NTC)	273,00	7,05	12,73	1,97
CURR (PTC)	226,00	7,89	15,27	1,76
PRMA (NTC)	104,00	13,95	31,20	5,21
PRMA (PTC)	228,00	6,91	30,89	3,15
SOLR (NTC)	303,00	48,48	42,10	54,77
SOLR (PTC)	234,00	47,48	45,20	52,97
LIQR (NTC)	272,00	6,60	12,57	1,58
LIQR (PTC)	210,00	7,42	15,20	1,41
NAT (NTC)	98,00	3,42	6,22	1,60
NAT (PTC)	201,00	8,80	60,45	1,62
GEAR (NTC)	163,00	87,65	176,19	10,60
GEAR (PTC)	174,00	60,40	133,08	0,99
SCT (NTC)	320,00	31,56	21,18	27,87
SCT (PTC)	249,00	22,25	19,60	16,79
EMPL (NTC)	135	8,252	15,8	3
EMPL (PTC)	174	4,172	8,637	2
TOAS (NTC)	320	30.238,571	324.391,029	378,247
TOAS (PTC)	247	446,578	1.916,712	69,188
WKCA (NTC)	162	269,501	2.149,05	11,791
WKCA (PTC)	192	50,061	372,195	1,207

Source: Orbis Europe

tributing to the disparity assessment under this set of data but since it was a scalable algorithm, it could be applied to very large datasets to extend this research in the following steps and to compare its outputs with the ones based on other countries companies' set of accounts or industries they belong to.

4. Results and Discussion

This section provides the empirical results of the analysis of the data presented in the previous section. The research question was: Did post-transition countries' enterprises reach the financial performance of non-transition countries' enterprises across Europe, decades after the transition? The goal was to identify if there were remaining differences between financial report indicators belonging to enterprises in post-transition vs. non-transition countries three decades after transition processes have spread over a considerable part of Europe.

To reach that goal, as it was previously stated, I used financial reporting indicators, under the firm-level approach, as they were consistently used in the accounting literature and ordinary data basis. The selected ratios from several financial indicators groups were already calculated upon balance sheets and income statements of sampled companies for the year 2021, available in the Orbis database.

The independent variable was a dummy variable, set for enterprises belonging to post-transition countries (1) and non-transition countries (0). The financial report analysis indicators used were:

- Current ratio (CURR)
- Profit margin (%) (PRMA)
- Solvency ratio – assets based (%) (SOLR)
- Net assets turnover (NAT)
- Liquidity ratio (LIQR)
- Cost of employees/operating revenue (%) (SCT)

I also included the number of employees (EMPL) and the natural logarithm of total assets (TOAS) in th.USD.

Those were the explanatory variables of the logit regression model as followed:

$$\sum_{i=1}^2 TC = \text{constant} + \alpha \text{CURR}_i + \beta \text{PRMA}_i + \chi \text{SOLR}_i + \delta \text{EMPL}_i + \varepsilon \text{NAT}_i + \phi \text{LIQR}_i + \gamma \text{SCT}_i + \eta \ln \text{TOAS}_i + \epsilon (1)$$

In case there were no significant relation or just

marginal effects found between the TC and financial indicators, it suggested that the enterprises' performances were comparable regardless of belonging to post-transition or advanced non-transition countries. If the gap persisted, significant marginal effects and a negative correlation with current and liquidity ratio could be expected, indicating weaker coverage of short-term liabilities by short-term assets in post-transitional countries because of higher level of short-term indebtedness that stifled operations. As well, short-term indebtedness was expected to be accompanied by higher gearing levels, since indebtedness was among the general features of transition economies. The macroeconomic environments could greatly influence the companies' behavior to suppress the gearing level. According to The EBRD Transition Report 2015-16, the transition region was overleveraged, and „average debt increases in the region have outpaced those observed elsewhere (European Bank for Reconstruction and Development [EBRD], 2016, p. 16) in the period 2007-2014. On the other hand, in the same report based on Dehesa et al. discussion „Macroeconomic instability, which is reflected in higher average inflation rates, is associated with significantly lower levels of domestic corporate debt.” (EBRD, 2016, p. 20) Considering such macroeconomic flows, the opposite were the expectations regarding solvency ratio with greater assets coverage by shareholder funds than by debts under lower gearing ratio.

Regarding the profitability indicators, as previously mentioned, firm-level studies were focused on inefficiency reduction, technological changes and innovation, factor productivity growth and competitiveness, which were finally expected to raise the profitability in post-transitional countries. So, the gap in catching up process regarding inefficiency reduction, factor productivity, innovation was expected to leave profitability levels lower in post-transition countries firms. In that case, I could find lower profit margins in those firms.

Kafouros and Aliyev (2016) have explored the influence of institutional reforms and international openness onto firms' profitability in CEE countries and found that domestic firms' profitability was positively influenced by institutional reforms and negatively affected by international openness.

Another profitability indicator analyzed was net asset turnover which indicated how successfully the capital employed was used to generate operating revenue (sales). According to some studies (Curea et al., 2020, p. 292), post-transition CEE countries companies had good asset utilization efficiency measured by assets turnover, while others (Vitezić, 2005) found low ratio indicating the assets were not efficiently being utilized. Although its higher ratio is related to better use of capital, often it could be accompanied by lower profit margins because of the overtrading (above the sustainable level according to capital employed), but also by lower capital engaged. The latter wasn't rare under the circumstances of instability or low access to external capital, both related to transitional environments.

The share of the cost of employees in the operating revenue should rise with labor intensive industries due to slow technological changes in many post-transition countries if not compensated by lower unit labor costs.

As to changes in real unit labor costs (defined as

the change in the compensation of employees not covered by changes in productivity), they were in principle negative in post-transition countries, meaning that the growth of labor costs (even if the growth of wages was substantial) only partly covered the growth of labor productivity "...so „the growth of the compensation of employees was thus delayed as compared to the results of their work, to the clear advantage of employers. (Lissowska, 2014, p. 12)

That's why lower share of the cost of employees in the operating revenue was expected in those countries.

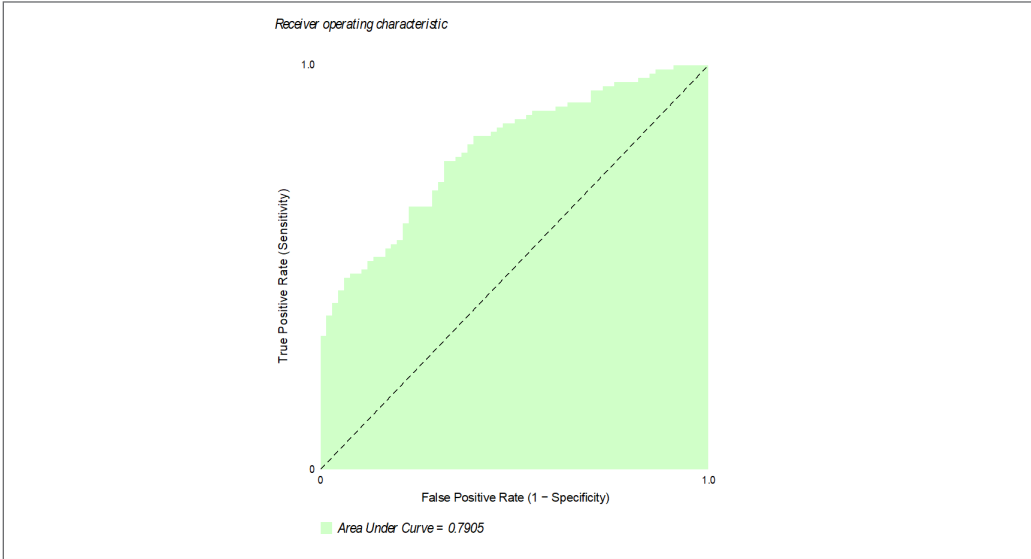
The empirical results presented in Table 5 have unveiled the significant variables – financial reports analysis indicators: CURR, PRMA, SOLR, LIQR, SCT as well as firm-level characteristics: EMPL, ln TOAS. Although 569 companies were sampled, there were 163 companies (out of which 97 were in post-transition countries) with available data for all variables in this iteration of the logit model structuring.

Table 5
Financial Ratios and Firm-level Items in Post-transition vs. Non-transition European Countries Enterprises

Variable	Coefficient	Odds ratio
CURR	0,468* (0,235)	0,626* (0,147)
PRMA	-0,025** (0,01)	0,975** (0,009)
SOLR	0,013* (0,006)	1,013* (0,006)
EMPL	0,03* (0,015)	1,031* (0,016)
NAT	0,01 (0,02)	1,01 (0,02)
LIQR	0,498* (0,236)	1,645* (0,388)
SCT	-0,054** (0,012)	0,947** (0,012)
ln TOAS	-0,695** (0,183)	0,499** (0,091)
constant	5,056** (1,169)	156,95** (183,528)

Note. ROC= 0,7905. Standard errors are stated in parentheses. * p < .05. ** p < .01.

Figure 1
ROC Curve – Model 1



Source: Table 5

The results showed that enterprises in post-transition countries, characterized by lower total assets scale, were likely to have lower profit margins, share of employees' costs in operating turnover, and current ratio since the statistically significant coefficients of PRMA, SCT, CURR, and ln TOAS were negative.

Under this research, for a percentage point increase in profit margin (PRMA), there was a small decrease of 2,5 % in the odds of belonging to the post-transitional enterprises group.

Also, while the number of employees of those enterprises appeared to be higher, the share of the cost of employees in operating turnover (SCT) was lower implying their lower salaries in transition countries enterprises. According to the results, the percentage point increase of employees' cost share in operating turnover was associated with a decrease of 5,3% in the odds of belonging to the post-transitional enterprises group. Although it appeared as a mild marginal effect, around 10 percentage points difference between SCT mean and median in NTC vs. PTC should be considered, in line with the well-known fact „Competitiveness based on labor intensity thus remains the dominant firm strategy in post-transition economies“ (Botrić, 2021, p. 41).

The liquidity and solvency ratio coefficients were also statistically significant but turned to be positive. Current assets in the ORBIS database include stocks, debtors, other current assets, cash, and cash equivalent to calculate the current ratio (in relation to current liabilities), while liquidity ratio is obtained by excluding the stocks from current assets in relation to current liabilities. Given the difference between the current and liquidity ratio in the category of stocks, it appeared higher stocks resulted in higher current ratio in non-transition countries enterprises. In other words, according to the logistic regression results, a unit increase of current ratio (CURR) was associated with a decrease of 37,4% in the odds of belonging to the post-transitional enterprises group, while this odd was raised 64,5% by a unit increase of liquidity ratio (LIQR).

This was also confirmed by higher working capital (ln WKCA) in non-transition countries enterprises as shown below in logit regression (2) which had also a negative coefficient, meaning post-transitional countries enterprises were likely to have smaller working capital (consisting of stock and debtors decreased by creditors), with marginal effect of 32,7%.

Lower stock levels in post-transition country enterprises were not unexpected due to the weak manufacturing sector and growing service sector as it was also pointed out in another research on the firm-level total factor productivity in post-transition economies: „More attention should be devoted to the developments in the service sector, in particular in the post-transition economies, where remarkable dynamics of private entrepreneurship in the service sector has occurred.“ (Botrić et al., 2017, p. 86) Solvency ratio (SOLR) appeared to be a little higher in transitional countries enterprises, with mild marginal effect since a percentage point increase in solvency ratio was associated with a small increase of 1,3% in the odds of belonging to the post-transitional enterprises group. Considering the lower scale of their total assets in comparison to non-transitional countries' enterprises (with a marginal effect of 50,1%), the results showed that smaller-sized transition countries' entities were usually financed by their own, equity capital. That was in line with the negative gearing coefficient (GEAR) as shown below in Table 6, implying that such transition countries' entities with lower total assets levels were less likely to use external financial sources which resulted in a lower gearing ratio in comparison to non-transitional countries enterprises in the model, also with very small marginal effect (0,2%), like the one calculated for SOLR. Volz (2010) has noted that „the proportion of external finance as part of the total financing is rather small in TCs, and that borrowing from banks in general is very low “ and has also pointed out that empirical evidence provided by de Haas and Peeters in 2006

suggested „that the high reliance of firms in TCs on internal finance is sub-optimal. This clearly points to constraints of firms, especially smaller ones, in TCs in accessing external financing.“ (p. 171)

A similar relation was found by Gallizo (2010) who also concluded that „the level of the indebtedness ratios tends to be lower than the average values of EU-15 firms for all of the countries analyzed “... “This lower level in indebtedness in the CEECs is due mainly to foreign direct investment and the small size of their financial systems.” (p.111-112)

Keeping the same dummy variable set for enterprises belonging to transition countries (1) and non-transition countries (0) as the outcome variable, two other explanatory variables were introduced:

- gearing (%) (GEAR)
- working capital (ln WKCA) (th. USD).

with the following logit regression:

$$\sum_{i=1}^2 TC = \text{constant} + \alpha \text{GEAR}_i + \beta \ln \text{WKCA}_i + \epsilon \quad (2)$$

Although 569 companies were sampled, there were 174 companies (out of which 92 were in post-transition countries) with available data for selected variables in this logit model as presented in Table 6.

In addition, considering both profitability margin and working capital had negative coefficients, suggesting their lower levels for post-transition enterprises, it's worth mentioning the study (Botoc & Anton, 2017) which revealed the concave relationship between working capital level and firm profitability in high-growth firms from CESEE region.

There was no significant relation found regarding net asset turnover.

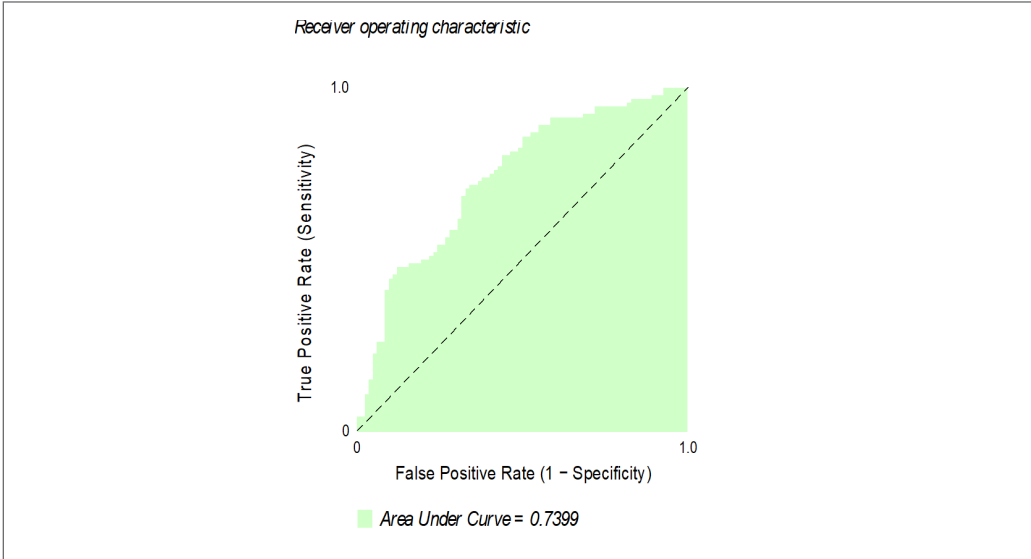
Table 6

Gearing and Working Capital in Post-transition vs. Non-transition European Countries Enterprises

Variable	Coefficient	Odds ratio
GEAR	-0,002* (0,001)	0,998* (0,001)
ln WKCA	-0,396** (0,085)	0,673** (0,057)
constant	1,581** (0,34)	4,858** (1,653)

Note. ROC= 0,7399. Standard errors are stated in parentheses. * p < .05. ** p < .01.

Figure 2
ROC Curve – Model 2



Source: Table 6

Previous research exploring CESEE transition countries' convergence to the EU considered convergence in per-capita income (Matkowski & Prochniak, 2007; Rapacki & Prochniak, 2009; Szeles & Marinescu, 2010; Tsanana & Katrakilidis, 2014; Vojinović et al., 2010), in industrial output, prices, interest rates (Brada et al., 2005; Figuet & Nenovsky, 2006; Kasman et al., 2005; Kutan & Yigit, 2005) and other aggregates or policies according to the overview provided by Nenovsky and Tochov (2014) who also analyzed the income convergence between CEE and the factors of influence on the convergence process. This research focused on the same topic but considered it by employing different approaches and indicators, based on the firm-level annual accounts to complement the vast literature of macroeconomic findings.

Following this idea, it was important to identify the set of financial reporting indicators, that mostly appeared in similar comparative cross-country studies. Previous research (Serrano Cinca et al., 2005) found that financial profitability reflected a country effect among eleven European countries, just like it demonstrated the post-transition vs.

non-transition countries effect in the assessment of their enterprises' financial performance disparity in this research. Profitability was also analyzed for CEE countries by Kafourous and Aliyev in 2016 to identify its linkages with relevant factors of influence.

In addition to profitability, leverage was also determined as the most valuable distinguishing factor among European countries' firms' financial variables evolution over 10-year period (1990-1999) by Gallizo and Salvador (2002). The findings on the lower gearing were in line with Gallizo (2010) and by Volz (2010) who also noticed lower external financing share in transition countries enterprises.

Along with the gearing ratio, some financial ratios used in this research matched the ones used by Gallizo (2010) – profit margin was equivalent to his calculation of return on sales, and he also used a relative share of staff costs to sales. Neither of those variables exhibited observable convergence.

Also, the currency ratio used in this research was in line with Klietnik et al. (2020) research performed over twelve transition European countries based on the use of financial ratios in prognostic

models, which confirmed current ratio, total-liabilities-to-total-assets ratio, and total-sales-to-total-assets ratio as most frequently used ratios in those models, and the authors considered that „educated choices regarding which specific indicators to use within a specific country may be very helpful for academicians in developing models in particular economic conditions“ (p. 87).

Similar to Laitinen (2018) findings, showing that in financial ratios changes, the growth of net sales played a central role, I also used sales-based ratios as profit margin, net assets turnover (like in Curea et al. 2020), and labor intensity.

Curea et al. (2019) analyzed financial performances employing liquidity, solvability, profitability, efficiency, investment performance, and aggregate performance indicators of companies from eleven CEE countries in the period 2008-2016 and derived the less and more performing homogeneous clusters which confirmed that financial ratios were strong differentiators of corporate performance. That was also in line with the motive to use the financial indicators to assess the financial performance (dis)parities between post-transition and non-transition European enterprises under this research.

The model based on the financial indicators derived from annual accounts has indicated still-existing distinctions between post-transition and non-transition enterprises' financial performance in 2021, but with low marginal effects suggesting the gap was narrowed. This was in line with the previous research performed at the macroeconomic level, exploring the real convergence in terms GDP per capita (like in Žuk et al., 2018.) that showed narrowed CESEE economies gaps to the EU average. Earlier, Aghion et al. (2010) also concluded that the gap has been narrowing, particularly in the EU member countries, although the transition region was lagging below technological frontier and productivity levels (in comparison with the United States under their study). Gałgóczi and Drahokoupil (2017) concluded that the trend in CEE was still towards catching up, but not as rapidly as in the pre-crisis years and that low labor costs remained the main base for competitiveness which was not sufficient to catch up with developed countries, in

line with this research findings upon the share of labor costs disparities, supported also by findings revealed by Lissowska (2014).

4. Conclusions

Decades after the transition processes started, it was interesting to explore how post-transition and non-transition advanced European countries compared with each other, and how the 'catching process' was going on. In this analysis, I tried to examine this 'catching process' using firm-level accounting data, namely, enterprises' annual accounts rather than countries' national accounts.

Transition processes as well as the post-transition period have been an attractive research topic, particularly under macroeconomic, growth, and development aspects. Microeconomic aspects related mostly to inefficiency reduction, technological changes, and innovation, factor productivity growth, and competitiveness, analyzed at the firm's level.

By the end of the transition processes, the convergence analyses presented the narrowing gap among post-transition and advanced countries, while diversities still existed depending on the heterogeneous dynamic of the catching process specific for different transition economies, particularly when analyzed at the firm's level. Various firms have been catching up faster or slower in relation to economic environments and institutional developments of a given transitional economy (more on institutional gap and influences in Campos, 2021; Hernández et al., 2022).

This research captures the firm's level of financial performance aspects revealing some differentiators, namely, financial report indicators that differ for the enterprises belonging to post-transition countries in comparison with the ones belonging to non-transition countries in Europe. The findings relate to the liquidity, solvency, leverage, and profitability indicators, as well as to labor intensity ratio, with lower profit margins, current ratios, and gearing, as well as a lower share of employees' costs in operating revenues, while higher solvency and liquidity ratio in post-transition countries enterprises than in non-transition countries. According to the findings, post-transition European countries

enterprises are still less profitable, with fewer current assets disposable to cover current liabilities, while less externally financed and still featured by lower labor costs share in sales implying that the gap in the catching process with firms in advanced European countries still exists, but with mild marginal effects. So, the research findings confirm that financial performance disparities between post-transitional and non-transitional European enterprises are not substantial in general, according to hypothesis 1, but there is still evidence of observable gaps identified, particularly in the field of liquidity. In comparison with similar rare research findings from previous decades, it seems that the performance gap observed at the firm's level has narrowed.

However, the research has certain limitations. It has captured firms from different post-transition CESEE and Baltic countries taken all together, while separate cross-country variations with specific relations regarding the presented models' indicators and their intensity of influence that could be expected for a certain post-transition economy depending on its progress in the transition process remain for further research.

Another limitation that arises whenever comparative analyses are performed is the problem of different accounting frameworks, policies, and methods, that influence the items presented in financial reports, although there are significant efforts invested in harmonization processes worldwide and international financial reporting standards development, with European Directives contributing to the same purpose. To partly overcome this caveat, our analysis rested on the Orbis Europe database which put the emphasis on consistency and provided information that could be compared meaningfully between companies from varying countries.

Future research should apply the models presented to individual post-transition countries separately, to reveal different paths in catching up with advanced European countries firms' financial performances by firms in each post-transition country or group of countries. In addition, future research could make similar comparisons among the enterprises in particular industries in post-transition and

non-transition countries to reveal their specifics in catching up.

Moreover, different financial ratios could be captured by further studies since I used a few from an ordinary group of indicators, not only because of limited observations availability, but too many ratios employed simultaneously could cause misleading and could be resource-consuming for interested users. On the other hand, other researchers could employ a new set of ratios to check the robustness of the outcomes, moreover, new studies could develop some synthetic representative indicator based on financial report items to examine potentially still existing disparities between post-transitional vs. non-transitional firms.

The assessment of post-transition economies catching up with non-transition economies needs continuity, both from the macro-level as well as the firm-level approach in future research. The firm-level studies exploring their technical efficiency, its change, and total factor productivity, when supplemented by analysis of financial indicators generated from their annual accounts, should contribute to the field of better understanding the post-transition catching up of non-transition developed countries. Furthermore, some generally accepted groups or synthetic financial indicators or scores could be established to capture the level of catch-up, such as technical efficiency change served as a convergence level indicator among countries in various research. This could also contribute to broader, dual macro and micro assessments in a comparative perspective not limited only to post-transition developments.

So, future research steps are triple: towards the presented models implementation for selected individual post-transition countries, to reveal the country's specifics in its own catching process with advanced ones, also enabling further comparisons among particular CESEE countries to progress in the same time; also towards new performance (dis)parity indicators inclusion to broaden and enhance the model by other firm's performance aspects; and finally, towards the integration of macro-level and micro-level analyses, considering CESEE countries interweaving economic environments and firm-level performances to provide the comprehensive view of a country's or countries' post-transition developments.

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