8. CENTRAL AND EAST EUROPEAN CORPORATE FINANCE: BETWEEN COMMONALITY AND HETEROGENEITY[1]

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Abstract

In order to reveal the corporate finance characteristics, we conduct a panel data study on companies located in five countries within the CEE area (the Czech Republic, Hungary, Poland, Romania and Slovakia). We identify common features in terms of capital structure and financial indicators interdependencies, but also country specific elements, which strengthen the assumptions of heterogeneity at the level of corporate finance. We reveal that both firm specific and common factors have an impact on CEE corporations; nevertheless, compared to similar papers, the degree of heterogeneity is lower, confirming the theories of CEE inter-country high correlation.

In comparison with similar previous approaches, our research develops a more extended perspective on CEE corporate finance peculiarities. We emphasize the interactions across a wider range of financial indicators relating to profitability, asset management and capital structure ratios in the light of the country and firm-level characteristics.

We point out that in the light of the macroeconomic stabilization process (encompassing the catching up period and subsequently the EU integration), heterogeneity degree lowers.

Keywords: CEE, corporate finance, capital structure, performance.

JEL Classification: E22, G31, G32, G39

I. Introduction

This paper investigates the mix of common and heterogeneous (country-specific) features in terms of capital structure at the level of the CEE countries. Using firm-level panel data from five East European countries (Czech Republic, Hungary, Poland, Romania and Slovakia), we investigate the interconnections between financial indicators in the light of the financial mixture theories (De Haas and Peeters, 2006). We emphasize the relationships between capital structure and a wide range of financial ratios including profitability and asset management indicators. The research focuses on the mixture between common and individual factors in explaining companies' performance. Macroeconomic and, maybe, social structures give incentive to commonality at the level of the corporate sector, generating common features of financial indicators, while firm-related fundamentals reflect peculiar features that shed light on heterogeneity. Under the assumptions of a developed capital market, a stabilized macroeconomic environment and a well founded institutional and regulatory framework, the financial performance of different companies located in the same country may improve, determining financial indicators to display similarities in terms of level and dynamic and providing evidence for commonality; on the other hand, structural features of a company reflected into the sector, marketing and investment strategies, ownership structure and age lay the grounds for heterogeneity.

This paper can be useful for both academics and practitioners. In the light of the financial globalization, where capital flows have been directed towards the most attractive locations in terms of return, academic literature contains intensive research on new models aimed at assessing risk more accurately, while practitioners are deeply preoccupied with the identification and management of the impact deriving out of new factors that have an influence on company's overall risk level and performance. In this context, we consider that our study complements both academics and practitioners' efforts; a comparative analysis between companies' main financial characteristics from different countries can offer a clue for the dominant set of factors – national or international.

This study represents a development of a modern theory – corporate finance at the intra-regional level, providing insight into the company's performance in the light of the mixture between commonality and heterogeneity dimensions. We define CEE corporate finance as a complex concept, enclosing the financial peculiarities of the corporations located in European emerging countries. In line with this concept, we consider that corporations are perceived as open systems, which absorb and propagate influences that have become more and more interdependent lately. Therefore, corporate finance has to switch from a firm-level approach to a global one, developed at the country and even region level. This new approach is to integrate the multiple interdependencies that appeared at the level of the inter-company network as well as at the level of the impact of macroeconomic environment on corporate segment. The rationale of this approach derives from the experience of the present financial crisis as well, where rating agencies have been accused of not being able to predict in an anti-cyclical manner corporate default; once the crisis appeared,

downgrade of debtors has been initiated and self-fulfilling expectations combined with a domino effect and herd behavior have become predominant (De Marzo *et al.,* 2007). Thus, a deeper interest in risk assessment and, implicitly, in capital structure analysis is required, especially from the perspective of the implementation of powerful prediction models, able to integrate enough significant financial information from the internal but also from the external environment of the company.

II. Literature review

Previous studies on CEE corporations have concentrated on capital structure [Colombo (2001), Dević and Krstić (2001), Estrin *et al.* (2001), Nivorozhkin (2002), Dragotă *et al*. (2008a), Dragotă *et al*. (2008b), Dragotă and Semenescu (2009)]. Analysts have been concerned about identifying the financial structure characteristics of companies located in CEE area. Banerjee, Heshmati and Wihlborg (2004) elaborated on the concept of dynamic endogenous target leverage, while De Haas and Peeters (2006) examined the capital structure dynamics of Central and Eastern European firms to get a better understanding of the quantitative and qualitative development of the financial systems in this region. They find that during the transition process, companies generally increased their leverage, lowering the gap between the actual and the target leverage. Profitability and age of the company are the most robust determinants of capital structure targets. Although the banking system development has in general enabled firms to get closer to their leverage targets, information asymmetries between companies and banks are still relatively large. As a result, companies prefer internal finance above bank debt and adjust leverage only slowly.

Nivorozhkin (2003) simultaneously endogenizes the adjustment factor and the target one and analyzes the determinants of target leverage in Bulgaria and the Czech Republic. The author concludes that Bulgarian companies adjust much faster to the target leverage than Czech companies because of conservative policies of Czech banks and exposure control.

As for CEE financial structure characteristics, analysts revealed mainly pecking order behavior (Estrin *et al.* (2001) in the case of Hungary, Poland and Romania; Dragotă and Semenescu (2009) in case of Romania), high volatility of the profitability indicators, especially during transition (Klapper *et al.* (2006) in the case of Slovakia, Poland, Czech Republic and Hungary), size positively related to profitability, indebtedness and liquidity indicators (Devic and Krstic (2001) in the case of Poland and Hungary). Moreover, a negative relationship has been figured out between debt and profitability (Colombo, 2001, in case of Hungary).

This paper concentrates on the capital structure peculiarities of the corporations located in CEE. It continues similar approaches initiated by Rajan and Zingales (1995), Jalilvand and Harris (1984), Banerjee *et al.* (2004), Myers (1999) or Nivorozhkin (2003). Ever since 1995, Rajan and Zingales performed cross-country analysis at the level of corporate capital structure, revealing important commonality for the G-7 countries, reflected by similar leverage. They identify institutional context (bankruptcy law, fiscal treatment, ownership structure and accounting standards) to

be main determinant of capital structure. Later, Booth *et al.* (2001) analyzed companies from ten developing countries, underlining lower long-term debt in comparison with corporations based in developed countries. Nevertheless, they find similar common factors exerting a deep impact on financial resources mixture. Recently there have been developed theories on dynamic financial structure, characterized by an adjustment process to target debt-to-assets ratio. Kremp *et al.* (1999) found the dynamic adjustment process at the level of a sample of German and French companies, with a deep impact exerted by the institutional framework (*Hausbank* system in Germany and the tax policy in France). De Miguel and Pindado (2001) highlighted the same features at the level of Spanish companies.

Our paper develops the academic literature on CEE corporate finance, providing a new insight on the classic capital structure theories. In comparison with previous approaches (Colombo, 2001; Dević and Krstić, 2001), this research proposes a more extended perspective in terms of corporate finance indicators interconnections at the level of CEE countries; we do not limit ourselves only to leverage, but we extend the perspective also towards profitability and asset management ratios, bringing forth country and firm-level peculiarities in terms of capital structure. We extend the period of observation until 2008, which in conjunction with previous four years, implied a macroeconomic stabilization process encompassing the catching up period and, subsequently, the EU integration (Llorca and Redzepagic, 2008), with deep implications at the level of the corporate segment, which lowered the heterogeneity degree.

In line with practitioners' present concern, this paper sets forth the idea of a more complex perspective on risk management strategies, capable of integrating both idiosyncratic risk – that captures firm level dimension - as well as systemic risk – that captures fundamentals-related dimension. Elaborating risk management strategies that integrate both types of risk enables the company to counteract the fluctuations triggered by the economical cycle, generating a higher degree of stability within its internal environment (Roman and Roman, 2006).

Research permits us to draw some important conclusions regarding the validation of capital structure theories at the level of the CEE countries. We tested pecking order and trade-off theories by a series of book financial indicators relating to leverage (debt to equity, long-term debt to total assets) and profitability (gross margin, return on equity).

The aim of this study is to identify potential common features in terms of capital structure and financial indicators interdependencies as well as specific elements at country level, which strengthen the assumptions of heterogeneity at the level of corporate finance. We consider that an extension of the observation period to 2008 brings novelty in this research area; we point out that several modifications take place, which diminishes the heterogeneity degree.

III. Methodological issues

Our empirical approach integrates a panel data analysis that is supportive of the mixture between heterogeneity and commonality features at the level of the CEE

corporate sector. We customize the approach initiated in a previous study (Triandafil and Brezeanu, 2010) at the level of the CEE countries, developing an intra-regional perspective on the peculiarities of the enterprises located in this geographical area. In line with Triandafil and Brezeanu (2010), we used Generalized Least Squares Method (GLS) at the level of 50 cross-section units. The sample includes companies located in CEE countries (the Czech Republic, Hungary, Poland, Romania and Slovakia). Financial data has been extracted from the www.corporateinformation.com site and cover fourteen years (1997-2010). The sample includes 10 private companies per country, selected in order to fulfill some conditions. These companies are characterized by a turnover of EUR 100,000 – 800,000 per year, a number of about 300-1300 employees and an age of about 10-15 years; we have not applied any filter in terms of field activity except for the exclusion of financial services firms because of their characteristics in terms of capital structure. In order to avoid negative effects of outliers and missing data, we restrained our database to companies that disclosed financial information in a continuous period of 14 years (1997-2010). The selection criteria applied at the level of CEE companies integrated business continuity as well. We approached companies that displayed a continuous activity during the time period of 14 years.

The sample of companies covers a large area in terms of field activity. There are five companies activating in the energy field, four in trade, seven in manufacturing, ten in transport, three in mining, five in food industry, five in constructions, four in IT and seven in real estate (see Annex 1).

Myers (2000) and Cole (2008) unveiled that capital structures are not designed to be ''general" so that "testing them on a broad, heterogeneous sample of firms can be uninformative." In line with these findings, our database, including a limited sample of privately held companies, which do not issue publicly traded securities, fits the purpose of capital structure analysis using the panel data methodology; cross-sectional units that capture firm level effects account for the heterogeneity part in the mixture between commonality and peculiarity features. The correlation matrix revealed the fact that variables lack in multicollinearity.

After performing the Hausman test, we figured out the core model to be the random effects panel regression of the form:

$$Y_{it} = \alpha + \beta^* x_{it} + \omega_{it}, \text{ with } \omega_{it} = \varepsilon_i + v_{it}$$

where: t = 1….T (time period), i=1….n cross-sectional observation unit in the sample;
x_{it} is a vector of explanatory variables;
α is a common intercept to all the cross-sectional units and over time;
ω_{it} is the error term;
ε_i is the cross-sectional error term (assumed to have 0 mean and constant variance);
v_{it} is the individual observation error term.

Besides the Hausman test, we develop our empirical approach using the random effect model based on an expert judgment rationale[4]. According to Cheng (2003), this

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[4] Once passed the Hausman test, then the lack of correlation between residual errors is confirmed (Arrelano, 2003).

model is more appropriate when the entities in the sample have been randomly selected from the population while the fixed effect model is more convenient when the entities in the sample represent the entire population. In line with this assumption, we consider the composition of our database to be more adequate for this model. Moreover, Arrelano (2003) revealed that the intercepts for each cross-sectional unit are assumed to arise from a common intercept (α variable) plus a random variable (ε_i) that varies cross-sectionally, but is constant over time. ε_i quantifies the random deviation of each entity's intercept term from the global intercept term α.

Literature showed that random effect model is assimilated to a variance components model (Ronald, 2002). In fact, this model encompasses a transformation in the GLS procedure by the subtraction of the weighted mean of the y_{it} over time (part of the mean rather than the whole mean).

If we define a dependent variable y^*_{it} as

$$y^*_{it} = \overline{y_i} - \theta \overline{x_i}$$

where: $\overline{y_i}$ and $\overline{x_i}$ are the means over time of the y and x variables,

then θ is a function of the variance of the observation error term, σ^2_v, and of the variance of the entity specific error term, σ^2_ε:

$$\theta = 1 - \frac{\sigma_v}{\sqrt{T\sigma_\varepsilon^2 + \sigma_V^2}}$$

As revealed by Cheng (2003), this transformation prevents cross-correlations.

We applied this general model for the specific case of financial indicators. Thus, in order to reveal the relationship between profitability and capital structure under the impact of a wide range of financial indicators (covering asset management efficiency, debt service burden, financial structure and size), we propose the following regression:

$$G\_m_{it} = \alpha_i + \text{ß}_1 * TAN_{it} + \text{ß}_2 * SIZE_{it} + \text{ß}_3 * Debt\_ebit_{it} + \text{ß}_4 * Inv\_cash_{it} +$$
$$+ \text{ß}_5 * Tca\_ns_{it} + \text{ß}_6 * Ltd\_ta_{it} + \omega_{it} \qquad (1)$$

where: G_m = Gross margin

TAN_t = The weight of tangible assets into total assets

SIZE = log(Assets)

Debt_ebit = Total Debt to Earnings before interest and taxes

Inv_cash = Inventory to Cash

Tca_ns = Total Current Assets to Net Sales

Ltd/ta = Long-term debt to Total assets

Similar to Triandafil and Brezeanu (2010), we expect profitability to be positively related to size, asset management indicators and debt service ratio. In line with previous studies (Delcoure, 2007; Booth *et al.,* 2001), we consider that current ratio captures the operational equilibrium of the company, enclosing its ability to meet the current obligations and to ensure proper asset management strategies. Nevertheless, our approach is more analytical; apart from the general current liquidity indicator (i.e. Total current assets to Net Sales), we include inventories (the current assets item

characterized by the lowest liquidity) related to cash and equivalents (the current asset item characterized by the highest liquidity) as well in order to highlight the company's ability to manage its business cycle (both in terms of production and sales) from the perspective of liquidity.

The second equation integrates profitability as a dependent variable as well. In line with the literature (Nivorozhkin, 2002; De Haas and Peeters, 2006), we approach profitability from a more complex perspective, selecting both net and gross profit as relevant indicators.

In comparison with the first equation, we propose a more specialized profitability indicator capturing precisely the equity return:

$$ROE_{it} = \alpha_i + \beta_1 * L_{it} + \beta_2 * Inv\_cash_{it} + \beta_3 * SIZE_{it} + \beta_4 * Debt\_ebit_{it} + \beta_5 * Tca\_ns_{it} + \omega_{it} \quad (2)[5]$$

where: ROE = Return on equity

   L = Financial leverage

   Inv_cash = Inventory to Cash

   SIZE = log(Assets)

   Debt_ebit = Total Debt to Earnings before interest and taxes

   Tca_ns = Total Current Assets to Net Sales

Related to the contribution of the financial structure to return on equity; our study highlights the cross-country characteristics using two classic alternative measures, frequently used in the literature (Banerjee *et al.,* 2004; Colombo, 2001; Dević and Krstić, 2001), which reveal the company's capacity to cover long-term financial obligations – financial leverage and the long-term debt to total assets ratio. These two indicators capture the mixture between internal and external financial resources.

Since we focus on the multiple interdependencies between financial indicators at a cross-country level, our study integrates capital structure ratios under the form of independent variables as well as under the form of dependent variables. For this purpose, in the third equation financial leverage is integrated as independent variable:

$$L_{it} = \alpha_i + \beta_1 * G\_m_{it} + \beta_2 * Tca\_ns_{it} + \beta_3 * TAN_{it} + \beta_4 * SIZE_{it} + \beta_5 * Debt\_ebit_{it} + \omega_{it} \quad (3)$$

where: L = Financial leverage

   G_m = Gross margin

   Tca_ns = Total Current Assets to Net Sales

   TAN_t = Tangible Assets/Total Assets

   Size = log(Assets)

   Debt_ebit = Total Debt to Earnings before interest and taxes

In this manner, financial structure is conceived from a bi-dimensional perspective, both as cause and effect in relation to profitability.

In order to strengthen the focus on the connections between capital structure and profitability indicators, we extend our approach at the level of the Debt to EBIT ratio. We consider that this ratio brings new insight into the company's ability to cover the

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[5] According to the correlation matrix, Debt to EBIT and Financial Leverage are not simultaneously determined.

financial obligations through the surplus value generated by the operational activity. Therefore, we propose the last regression under the form of:

$$Debt\_ebit_{it} = \alpha_i + \text{\ss}_1 {}^*TAN_{it} + \text{\ss}_2 {}^*Size_{it} + \text{\ss}_3 {}^*ROA_{it} + \text{\ss}_4 {}^*L_{it} + \text{\ss}_5 {}^*Tca\_ns_{it} + \omega_{it} \quad (4)$$

where: Debt_ebit = Total Debt to Earnings before interest and taxes

TAN_t = Tangible Assets/Total Assets

Size = log(Assets)

ROA = Return on assets

L = Financial leverage

Tca_ns = Total Current Assets to Net Sales

The reason for concentrating on these variables relies on the level of complexity corresponding to the captured financial information. We selected indicators that cover a large area in terms of financial information, with implications for the company's financial and economic dimensions. In the fundamental corporate finance literature (Brealey and Myers, 2000), the financial dimension explains the company's ability to cover its financial obligations while the economic one reveals a proper market position, which lays the grounds for profitability. A good level of solvency, profitability and liquidity captures a well-balanced company from both dimensions. Our focus is oriented towards the dynamic relationships between financial indicators at the country and firm-level; we consider these dynamic relationships to be strongly supportive of the mix of common and heterogeneous features. Regressions are conceived bi-dimensionally: on one hand, they focus on explaining the impact of liquidity, solvency and indebtedness on the capital structure; on the other hand, they study the influence of capital structure indicators on profitability. The key point consists in capturing the corporate cross-country heterogeneity at the level of main financial indicators; we figure out important differences at country level, emphasizing the interactions across various indicators.

First, we elaborate a firm-level approach, captured by means of 50 cross-section identifiers; then the financial data are aggregated, turning to a global perspective, where the cross-section identifiers underlie at the country level. Frank and Goyal (2006) identify a series of difficulties implied by panel-data studies: leverage definition (market versus book data), outliers and missing data treatment. As for leverage definition, our database integrates both listed and non-listed companies; therefore, we approach only book values of debt and equity in order to lay a consistent and robust ground at the level of the whole database.

Moreover, Graham and Harvey (2001) conducted a survey on US executives, revealing that wherever the executives are in the position to elaborate appropriate financing policies, they ground on book values. Gaud *et al.* (2005) highlighted that book values should be used in case of random effects models. In case of outliers and missing data, we approached companies that exhibit a continuous activity during the analyzed time period and we eliminate those activating in the financial services field. The regressions aim at revealing characteristics of the connectivity and interdependencies between capital structure, profitability and asset management indicators corresponding to 50 cross-sectional units. We assume CEE corporate finance both to vary cross-sectionally, but also to reveal important commonality

derived out of similar patterns in terms of macroeconomic volatility and capital market development (Nivorozhkin, 2003; Korol and Korodi, 2010). In comparison with similar previous approaches (Klapper *et al.,* 2006; Stancu, 2006), our research proposes a more extended perspective in terms of corporate finance indicators interconnectivity at the level of CEE countries; we do not limit only to leverage, but we extend the perspective also towards profitability and asset management ratios. Moreover, our perspective is highly actual: we extend the period of observation until 2010 and we point out that a deep restructuring process occurred at the macroeconomic level, lowering the heterogeneity degree.

IV. Empirical results

First, the research concentrates on descriptive statistics at the level of the corporate finance indicators characteristic of companies located in the five CEE countries (see Annexes 2-7). The high degree of commonality is revealed by similar values of mean and median corresponding to the liquidity, solvency and profitability indicators. Moreover, even standard deviation appears to be quite similar. The highest volatility is recorded in case of capital structure ratios (leverage, debt to EBIT ratio, total debt to total assets). At the level of the whole sample, with few exceptions, the mean is superior to the median, revealing the positive skewness of the series integrating financial data. The analysis of the descriptive statistics points out a consistent homogeneity across countries, in opposition to previous studies that identified strong differentiations in terms of CEE corporate financial indicators (Nivorozhkin, 2003). In fact, the strong commonality displayed by the financial indicators can be explained by the similar restructuring processes that CEE countries were in the position to follow up in the '90s after the collapse of the communism regime. Although the timing of the transition process was slightly different from one country to another, the macroeconomic fundamentals reacted similarly; we consider that during 2004-2007 and in the first part of 2008, CEE countries recorded an important macroeconomic stabilization process, subsequent to the transition from the centralized to the market economy and consisting of an improvement in general macroeconomic indicators. The macroeconomic stabilization process implied unemployment, inflation rate and budget deficit decrease and an accelerated economic growth, supported by an intensive consumption. Moreover, in 2004 (the Czech Republic, Hungary, Poland and Slovakia) and in 2007 (Bulgaria and Romania), the CEE countries integrated into the EU. We assume that this process influenced in a positive manner the corporate financial performance (Rugraff, 2010), inducing the skewness characteristics at the level of the financial indicators.

The second part of 2008, and 2009 and 2010 marked the beginning of the economic downturn for CEE, especially from the perspective of the high dependence on external financing; accelerating inflation rate, credit contraction, depreciation in national currencies triggered certain instability at the level of the corporate segment.

The dynamics of macroeconomic indicators reflected in the peculiarities of companies' financial indicators reveal a transmission effect from the macroeconomic fundamentals to the corporate sector.

The characteristics of the interconnectivity of financial indicators are studied by the GLS method. The first and second equations integrate measures of profitability (i.e. gross margin and return on equity) as dependent variables. The results are consistent across most of the five surveys. For many of the independent variables, in line with previous findings (Triandafil and Brezeanu (2010)), the coefficients are statistically significant at 1% level.

As for Slovakia (see Annex 9), the gross margin appeared to be significantly correlated with management indicators measured by total current assets to net sales and tangibility captured by the weight of tangible assets in the total assets, pointing out that an important volume of operational activity is to give incentive to profitability. Several studies highlighted that having exceeded the break-even point, the company is likely to become profitable and generate an important return on equity that could reward shareholders' expectations; meanwhile, touching the break-even point is likely to occur especially in the context of a significant operational activity, reflected into enhanced asset management strategies (Banerje *et al.*, 2004).

Other important correlations were revealed in the case of size (measured by the natural logarithm of total assets) and weight of long-term debt into total assets. According to the database, 1% variation in the debt to EBIT ratio and size determined a gross margin variation of 4.325% and of 1.147%, respectively. According to our sample, the factors that had the strongest effect on gross margin are tangibility and weight of long-term debt into total assets (-1.19% and -8.3%, respectively). In accordance with Nivorozhkin (2003), size was correlated positively with gross margin, confirming the assumption that larger firms have higher profit perspectives while long-term debt contributes negatively, underlining the idea that debt service acts as a burden on profitability. The same negative effect of long term-debt and tangibility is revealed by the Hungarian survey.

Except for Romania (see Annex 11), tangibility had a negative impact on gross margin. Analysts pointed out that a high weight of tangible assets triggered important depreciation expenses which influenced profitability negatively (Cole, 2008). Others highlighted the importance of tax shields that impact in a favorable manner profitability from the perspective of tax savings that are gradually accumulated and exert a positive influence on company's cash-flow (Bunn and Young, 2004). In this case, we could conclude that deductibility of depreciation expenses did not impact the profitability positively, this being caused by the volatility and even unpredictability of the fiscal legislation; the important restructuring of the institutional framework has determined significant changes in the fiscal framework, which rendered the company sensitive to the fluctuations of the legislative framework.

The interesting point consisted in the fact that, at the level of our sample, size was the only factor that exerted a negative effect on return on equity. Previous approaches underlined that small firms were mainly equity financed (i.e. pecking order behavior), which determines lower return on equity ratios and consequently a positive correlation with size. This assumption was not validated for the Slovakian sample of enterprises. Financial leverage descriptive statistics revealed, in the Slovakian case, lower median and mean (0.419 and 0.543 in comparison with 0.517 and 0.678 in the case of

Romania and 0.496 and 0.585 in the case of Poland), reflecting lower equity, which explained the negative correlation with size.

Theory suggests that indebtedness impacts positively profitability in case of highly profitable firms (Modigliani and Miller, 1958, 1963; Davydenko, 2005), which have also the opportunity to obtain important advantages in terms of tax savings; on the other hand, once the companies are highly leveraged, profitability is endangered since its risk level increases. The latter assumption was validated at the level of the Slovakian, Hungarian and Polish samples (see Annexes 9, 11 and 12). This aspect could be construed by the investors' perception of risk, revealed especially in the context of financial turbulences; in the case of companies located in CEE countries, risk aversion is essential as for the relationship between leverage and profitability. Investors perceive companies located in emerging countries as riskier in comparison with companies from developed countries, which leads to the idea that an additional indebtedness layer may place investors in the position to impose a higher risk premium and to determine the increase in the financing costs, with negative effects on profitability.

Our statistical output shows that debt to earnings before interest and taxes ratio is the factor that determines a highly negative effect on profitability in case of the Czech Republic and Poland, confirming our assumption that encompassed profitability is strongly supported by the company's ability to cover its financial obligations.

The opposite effect is revealed in the case of Slovakian, Hungarian and Romanian companies (see Annexes 9, 10 and 11). The coefficient corresponding to the debt to earnings before interest and taxes ratio was not significant in the case of Hungary and Poland. This finding is consistent with previous studies that highlighted either a positive relationship (Myers and Majluf, 1984; Cornelli *et al.,* 1996; Nivorozhkin, 2003), either a negative one (Dragotă and Semenescu, 2009).

The Czech survey revealed highly significant coefficients in the case of the first and the second equation. Gross margin was highly impacted by inventory to cash and equivalents, long-term debt to total assets as well as by tangibility. A 1% variation in inventory to cash and equivalents, long-term debt to total assets and tangibility determines a 63.90%, 13.40% and -12.64% change in gross margin. Lower impacts were exerted by debt to EBIT ratio and size. 1% variation of size determined a modification of 0.20% of return on equity and 1.50% of gross margin.

Literature agreed that profitability expressed as Net Profit to Turnover is positively correlated with leverage, especially from the perspective of the tax shields. Nevertheless, other studies highlighted that as long as companies identify other tax shields (e.g. amortization/depreciation expenses), the relationship becomes negative (Köke *et al.,* 2000). This assumption was not validated in the case of the present paper since tangibility was negatively correlated with profitability; this finding reveals that a high level of tangible assets, apart from the beneficial accounting treatment encompassed by the amortization expenses, could bring an excessive financial burden for the company due to the need to finance them.

Leverage was correlated positively with return on equity in the case of the Czech Republic, Romania and Hungary. As for Romanian companies (see Annex 10), both gross margin and return on equity were impacted negatively by debt to earnings

before interest and taxes ratio and positively by long-term debt to total assets and financial leverage, in opposition to Dragotă and Semenescu (2009) who identified mainly negative relationships. This difference can be explained by the fact that the database was a more restricted one in the case of the present study and that the individual effects at the firm level were stronger. In the case of Romania, both equations that integrated profitability as an independent variable did not display significant coefficients.

Size had a positive effect on profitability while tangibility had a negative effect in most cases. Theory according to which size is positively correlated with growth and lending opportunities (Klapper *et al.,* 2006) was validated as well.

At the level of the Hungarian survey (see Annex 11), inventory to cash and equivalents ratio as well as total current assets to net sales ratio had the strongest impact on gross margin. A 1% variation in inventory to cash and equivalents and in total current assets to net sales ratios triggered a modification of 2.491% and 1.334%, respectively, of gross margin.

As for financial leverage, coefficients corresponding to tangibility and size were mostly positive (except for Hungary in case of tangibility and for Slovakia in case of size). Previous researches (Haas and Peeters, 2006), referring to liquidity, depth and legal framework of the collateral market, revealed that tangibility was negatively correlated with debt in case of emerging countries and positively in case of developed ones. Our finding reflects an improvement of the companies' asset secondary market at the level of CEE countries, determined, for example, by the implementation of the Basel II framework, which regulates strictly collateral valorization as credit risk mitigation technique (Dragotă *et al.*, 2009).

The Slovakian survey pointed that size influenced both leverage and debt to EBIT ratio. 1% variation in size determined a variation of -1.786% in leverage and of 1.163% in debt to EBIT ratio. As for the Czech Republic, size impact on leverage was lower (0.586%), but higher on debt to EBIT ratio (1.084%). In the case of the Romanian companies, size and tangibility had a positive effect on financial leverage. 1% variation in size triggered a modification of 1.021% of financial leverage and a

-1.835% variation in debt to EBIT ratio.

The statistical output relative to companies located in Romania reveals important aspects of the dynamic recorded by macroeconomic fundamentals.

The beginning of the transition process was characterized by an important disequilibrium of the macroeconomic environment determined mainly by hyperinflation, with negative implications for the living standards of the population, for the global demand and, subsequently, for the corporate sector ability to attract external financing resources and to generate a positive financial leverage.

In the light of the severe macroeconomic deterioration, the prudential regulatory framework was strengthened, even prior to the inception of the Basel II process transposition; this led to tight lending policies that placed a special focus on the company tangibility as well as on the company's size as main criteria on which the credit extension depended.

The same positive impact of size and tangibility was revealed in the case of the Poland survey, with a differentiation in terms of impact magnitude. A size variation of 1% determined a 1.975% modification of financial leverage while a similar dynamics of tangibility triggered a modification of 2.9%. An opposite effect of tangibility was highlighted in the case of Hungary where leverage varied by -0.7%.

The positive size impact on financial leverage has been revealed mainly in the case of publicly traded companies (Rajan and Zingales, 1995; Frank and Goyal, 2006); as for privately held firms, with concentrated ownership, the impact was considered to be a negative one (Cole (2008)) due to the lower informational asymmetry and to the orientation towards internal financing. Our finding is consistent with Črnigo and Dušan's (2009) analysis revealing the same positive impact on Slovenian companies' capital structure. Size acts as an incentive to leverage from the perspective of the higher access of large companies to lending opportunities. In the CEE countries, the banking system has developed lately, but meanwhile a prudential regulatory framework imposed tight credit policies, with conservatory requirements in terms of guarantees/collateral, which impacts negatively the small firms' access to funding (Grum, 2007).

This aspect has been enlightened by the experience of the recent financial turbulences that determined the need for the banking regulatory system to adopt macro-prudential tools in order to preserve the financial stability. Among the macro-prudential instruments, the set-up of credit limits is likely to impact further in a significant manner the capital structure and financing policies of CEE companies.

Asset management indicators (i.e. inventory to cash and equivalents, and total current assets to net sales) had a positive influence on profitability and leverage except for Romania and Poland. Based on previous studies (Cornelli *et al.,* 1996; Klapper *et al.,* 2006; Köke *et al.,* 2000), we expected efficient asset management strategies, reflected in good values of liquidity indicators, to support profitability. In essence, an accelerated turnover of accounts receivables provides incentive for profit accumulation. Meanwhile, the few exceptions can be explained by the fact that business cycle management (including both production and sales) implies high costs that diminish the profitability perspective (Dragotă *et al.,* 2009).

As for the impact exerted on financial leverage, the degree of heterogeneity is higher. In the case of the Czech Republic, total current assets to net sales ratio impacted negatively leverage, while for Slovakia the same impact was exerted on debt to earnings before interest and taxes ratio. In the case of Poland and Hungary, the coefficient corresponding to the total current assets to net sales ratio was not significant.

The statistical output unveils that leverage is a key financial indicator that impacts to a high extent the financial structure of the company, its risk profile as well as its financial performance.

In the context of the current turbulences in the EU countries, the leverage characteristic of private sector has become extremely important. Since major imbalances have occurred due to the high degree of public indebtedness, the danger of a potential spiral, with negative effects propagating from corporate towards the public sector and reciprocally, results in a global disequilibrium. From this perspective,

the private leverage gained a new dimension, anchored in the mixture between micro and macroeconomic environments.

The random effects revealed a high degree of heterogeneity at the level of CEE enterprises (see Annex 13).

The firm-specific effects were important in explaining the dynamics of the interactions between financial CEE corporate financial indicators (Dragotă *et al.,* 2009). Nevertheless, there is still a consistent commonality in terms of corporate finance interdependencies at the level of CEE countries, highlighting out that some of characteristics derive out of systemic factors, originating in macroeconomic structures (Triandafil and Brezeanu, 2010).

V. Conclusion

This paper revealed CEE corporate finance characteristics. We identified potential common features in terms of capital structure and financial indicators interdependencies as well as specific elements at country level that strengthened the assumptions of heterogeneity at the level of corporate finance.

The high degree of commonality was revealed by similar values of mean and median corresponding to the liquidity, solvency and profitability indicators. The maximum value corresponding to the profitability indicator was identical in the case of Poland and Slovakia. Moreover, even the standard deviation appeared to be quite similar. The highest volatility was recorded in the case of capital structure ratios (leverage, debt to EBIT ratio, total debt to total assets ratio).

We conceived capital structure indicators both as dependent and independent variables and we concluded that leverage exerted the highest positive effect on return on equity in the case of the Czech Republic, Romania, Hungary and Poland. As for Romanian companies, both gross margin and return on equity were impacted negatively by debt to earnings before interest and taxes ratio and positively by long-term debt to total assets and financial leverage ratio. Size contributed positively to profitability while tangibility negatively in most cases. As for financial leverage, coefficients corresponding to tangibility and size were mostly positive (except for Hungary in case of tangibility and for Slovakia in case of size). Asset management indicators (i.e. inventory to cash and equivalents and total current assets to net sales ratios) contributed positively to profitability and leverage except for Romania and Poland. As for the impact exerted on financial leverage, the degree of heterogeneity is higher. In the case of the Czech Republic, total current assets to net sales ratio impacted negatively leverage while for Slovakia, the same impact was exerted on debt to earnings before interest and taxes ratio.

We discovered a certain degree of variety in terms of financial indicators, strengthened by the random effects, which pointed out important firm-specific influences, in line with previous findings of Črnigoj and Dusan (2009) who revealed that Slovenian firms' capital structure characteristics varied during the transition process under the impact of the change in economic system and corporate governance mechanisms.

This research permits us to draw some important conclusions regarding the validation of the capital structure theories at the level of the CEE countries. We tested pecking order and trade-off theories by a series of book financial indicators relating to leverage (debt to equity, long-term debt to total assets ratios) and profitability (gross margin, return on equity).

The trade-off theory has been confirmed in a diluted/partial manner mainly by means of the positive impacts exerted by gross margin on leverage in four out of the five cases. A similar effect derived from the effect of financial leverage on return on equity. We appreciate the trade-off theory confirmation as a partial one from the perspective of the inverse relationships. Classical trade-off theory assumes a positive contribution from debt towards profitability while our research validates the inverse effect. This result may be explained by the fact that good profitability level creates the opportunity of wealth accumulation which determines the creditors to perceive the company as more creditworthy from one period to another, providing it with higher leverage. We consider the correlation between gross margin and leverage to be a consistent one but we appreciate the effect of financial leverage on return on equity as artificial. Since companies resort more frequently to external financing, the percentage of equity into total capital tends to decrease; thus net income will be reported to a lower equity which triggers return on equity increase in an artificial manner. Apart from these two relationships, the contribution of long-term debt to gross margin is negative in most cases, confirming the pecking order theory.

The empirical part of the research highlighted the importance of financial leverage in the system of financial indicators characteristic of the microeconomic environment of the company due to its interdependence with a wide range of variables that encompass liquidity, solvency or profitability of the enterprise. The study revealed that

private leverage gained a new dimension lately, anchored in the mixture between micro and macroeconomic environments. Since major imbalances have occurred due to the high degree of public indebtedness, the danger of a potential spiral, with negative effects propagating from corporate towards the public sector and reciprocally, results in a global disequilibrium. In light of this finding, the private leverage needs a special monitoring.

The statistical output revealed several degrees of magnitude as for the impact exerted by the explanatory variables; some variables proved to be less significant than the others in determining the variation of the dependent ones.

In order to reveal a certain differentiation of the impact factors at the country level, in Annex 14 the research results are highlighted in the form of a synoptic table revealing the impact factors at the level of every country; the dependent variables are analyzed in the light of the influences exerted by the various financial indicators that are conceived as explanatory variables.

We define an impact factor as the variable that exerts an important influence on the dependent financial indicator that is conceived as a receptor of influences originating in a system of various financial indicators.

With few exceptions, the impact factors display a certain degree of homogeneity at the level of the whole sample of countries; as such, gross margin is impacted in case of all countries by asset management indicators and except for Romania and Poland, by

leverage. Other indicators that influence profitability in a significant manner consist of tangibility and size.

The interesting point is represented by the fact that precisely in the case of Romania and Poland that are in the position to have the lowest and, respectively, the most developed financial system, profitability is not impacted by leverage; as for Romania, the finding is not surprising since an underdeveloped financial market does not give incentive to a positive leverage effect reflected in external financing supported growth. In opposition, in the context of well developed finance mechanisms as it might be the case of Poland, leverage is likely to encourage profitability.

As regards the inverse relationship, meaning a profitability effect on leverage, this is confirmed in case of companies located in Romania while Polish companies lack in displaying such an impact; in this case, leverage is influenced significantly by asset management indicators and size. This finding can be interpreted as an indirect effect of profitability on leverage since an enterprise with efficient asset management strategies and an important business volume is likely to be profitable and to qualify as solvent in the creditors' perception.

Tangibility is an important impact factor in the case of all countries. A special mention has to be made as for Romania; except for return on equity, tangibility influences significantly gross margin, financial leverage and debt to earnings before interest and taxes ratio. Moreover, in the case of gross margin, it represents the only impact factor, revealing the dominant prudential behavior that characterized the financial system, with deep implications for the companies' access to external financial resources and, subsequently, on profitability.

Further research will keen on integrating macroeconomic variables in order to get a deeper insight into the mixture between commonality and heterogeneity characteristic of CEE corporate finance.

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Companies structure according to the localization criteria

	Energy	Trade	Manufacturing	Transport	Mining	Food	Construction	IT	RE
Czech Republic	1	1	2	2	1	1	1		1
Hungary	1	1	2	2		1	1	1	1
Poland	1		1	1	1	1	1	1	3
Romania	1	1	1	3		1	1	1	1
Slovakia	1	1	1	2	1	1	1	1	1

List of financial indicators

Financial indicator	Relationship	Source	Acronym
Gross margin	Gross Income/Turnover	Balance sheet and Profit and Loss Account	G_m
Total Current Assets to Net Sales	Total Current Assets/Net Sales	Balance sheet and Profit and Loss Account	Tca_ns
Inventory to Cash	Inventory/Cash	Balance sheet	Inv_cash
Long term debt to Total assets	Long term debt/Total assets	Balance sheet	Ltd/ta
Total Debt to Earnings before interest and taxes	Total Debt/Earnings before interest and taxes	Balance sheet and Profit and Loss Account	Debt_ebit
Financial leverage	Debt/Equity	Balance sheet	L
Return on equity	Net Profit/Equity	Balance sheet and Profit and Loss Account	ROE
Return on assets	Net Profit/Total Assets	Balance sheet and Profit and Loss Account	ROA
Weight of tangible assets into total assets	Tangible Assets/Total Assets	Balance sheet	TAN
Size	Log(Assets)	Own computation	SIZE

Annex 3

Descriptive Statistics of the financial indicators characteristic to Czech companies

	Median	Mean	Standard deviation	Minimum	Maximum
Gross Margin	0.117	0.143	0.123	-0.082	0.569
Total current assets to Net Sales	0.227	0.250	0.130	0.050	0.455
Inventory to cash and equivalents	0.160	0.251	0.194	0.000	0.628
Size	0.451	0.689	0.631	-0.097	2.218
Tangibility	0.811	4.937	8.928	-0.233	40.250
Long term debt to total assets	0.077	0.081	0.066	0.003	0.226
Debt to Earnings before Interest and Taxes	1.760	2.994	3.130	0.029	10.546
Leverage	0.258	0.336	0.331	0.005	1.414
Return on equity	0.081	0.159	0.612	-0.095	4.000
Return on assets	0.051	0.257	1.017	-0.037	6.000

Annex 4

Descriptive Statistics of the financial indicators characteristic to Hungarian companies

	Median	Mean	Standard deviation	Minimum	Maximum
Gross Margin	0.111	0.158	0.143	-0.222	0.544
Total current assets to Net Sales	0.302	0.423	0.502	0.004	3.505
Inventory to cash and equivalents	0.171	0.211	0.151	0.004	0.556
Size	0.499	0.620	0.670	-0.078	3.600
Tangibility	0.649	7.858	34.709	-0.452	255.514
Long term debt to total assets	0.031	0.981	4.815	0.002	26.674
Debt to Earnings before Interest and Taxes	0.936	2.511	4.524	0.002	26.674
Leverage	0.256	0.379	0.358	0.001	1.300
Return on equity	0.082	0.136	0.519	-0.207	4.000
Return on assets	0.111	0.158	0.143	-0.222	0.544

Annex 5

Descriptive Statistics of the financial indicators characteristic to Polish companies

	Median	Mean	Standard deviation	Minimum	Maximum
Gross Margin	0.119	0.153	0.152	-0.486	0.472
Total current assets to Net Sales	0.407	0.459	0.224	0.107	1.485
Inventory to cash and equivalents	0.108	0.202	0.189	0.001	0.665
Size	0.231	0.465	0.586	-0.561	2.649
Tangibility	0.517	3.217	7.217	-1.320	39.925
Long term debt to total assets	0.080	0.762	4.125	0.002	26.674
Debt to Earnings before Interest and Taxes	1.851	4.123	7.934	0.000	53.419
Leverage	0.496	0.585	0.529	0.004	2.335
Return on equity	0.161	0.167	0.229	-0.797	0.951
Return on assets	0.080	0.091	0.100	-0.293	0.440

Annex 6

Descriptive Statistics of the financial indicators characteristic to Romanian companies

	Median	Mean	Standard deviation	Minimum	Maximum
Gross Margin	0.257	0.295	0.149	0.002	0.581
Total current assets to Net Sales	0.590	0.723	0.452	0.286	2.525
Inventory to cash and equivalents	0.208	0.216	0.132	0.019	0.541
Size	0.256	0.323	0.317	-0.079	1.473
Tangibility	0.436	1.400	4.037	-1.783	22.759
Long term debt to total assets	0.126	0.145	0.127	0.000	0.512
Debt to Earnings before Interest and Taxes	2.615	4.404	5.236	0.039	29.207
Leverage	0.517	0.678	0.649	0.011	2.814
Return on equity	0.155	0.163	0.122	-0.080	0.497
Return on assets	0.079	0.087	0.065	-0.040	0.265

Descriptive Statistics of the financial indicators characteristic to Slovakian companies

	Median	Mean	Standard deviation	Minimum	Maximum
Gross Margin	0.085	0.051	0.118	-0.486	0.174
Total current assets to Net Sales	0.437	0.448	0.134	0.217	0.832
Inventory to cash and equivalents	0.086	0.152	0.165	0.012	0.670
Size	0.254	0.471	0.591	-0.104	2.000
Tangibility	0.543	507.613	2.094.430	-0.321	9.596.000
Long term debt to total assets	0.002	0.049	0.062	0.000	0.182
Debt to Earnings before Interest and Taxes	0.566	3.121	5.804	0.000	27.728
Leverage	0.419	0.543	0.587	0.000	2.000
Return on equity	0.061	0.110	0.227	-0.436	0.896
Return on assets	0.091	0.082	0.085	-0.125	0.293

Annex 8

Statistic output corresponding to the Czech companies

Equation / Indicator	Equation I	Equation II	Equation III	Equation IV
Gross Margin	Dependent variable		-5.175 * (1.211) 0.421	
Return on equity		Dependent variable		
Return on assets				-5.292* (3.814) -1.387
Financial Leverage		0.165* (2.880) 0.005	Dependent variable	1.123** (2.190) 0.032
Debt to EBIT	-0.004*** (2.584) 0.001	0.002 (1.567) 0.001	0.006 (0.635) 0.009	Dependent variable
Long Term Debt to Total Assets	13.4* (7.154) 0.134			
Inventory to cash and equivalents	6.49* (1.253) 0.051	2.083* (1.919) 0.108		
Total current assets to Net Sales	0.946 (1.055) .896	0.293 (0.541) 0.542	-4.995 (3.795) -1.316	1.938* (4.437) 4.369
Size (log (sales))	1.5** (2.893) 0.001	0.2** (2.011) 0.001	0.586* (4.330) 0.130	1.084* (7.851) 1.380
Tangible Assets to Total Assets	-12.64* (8.553) 0.014		0.047* (7.515) 0.006	-0.356*(-3.929) 0.090
No. of observations	100	100	100	100
Adjusted R-squared	0.401	0.341	0.276	0.452

*= Significant at 0% **= Significant at 5%   ***= Significant at 10%
-T statistic in brackets and standard errors below . Source: own computations

Statistical output corresponding to Slovakian companies

Equation\Indicator	Equation I	Equation II	Equation III	Equation IV
Gross Margin	Dependent variable		1.181*** (2.695) 4.384	
Return on equity		Dependent variable		
Return on assets				3.534 (4.529) 0.780
Financial Leverage		-0.161*** (2.741) 0.058	Dependent variable	-4.141** (2.084) (0.986)
Debt to EBIT	4.325* (5.726) 0.075	0.000177 (1.297) 0.0001	-0.001** (3.201) (0.0004)	Dependent variable
Long Term Debt to Total Assets	-8.3* (-4.816) 0.017			
Inventory to cash and equivalents	0.183 (1.111) 0.165	0.028420 (1.509) 0.018		
Total current assets to Net Sales	0.284*** (2.594) 0.109	7.735 (5.074) 1.524	1.848* (5.332) 3.467	-1.970 (7.638) 0.257
Size (log (sales))	1.147*(4.758) 0.0241	-1.231* (5.393) 0.228	-1.786 ** (5.512) 0.324	1.163** (3.874) 0.001
Tangible Assets to Total Assets	-1.19** (-3.139) 0.006		0.404 (1.336) 0.302	1.970 (7.638) 0.257
No. of observations	100	100	100	100
Adjusted R-squared	0.232	0.321	0.289	0.432

*= Significant at 0% **= Significant at 5%   ***= Significant at 10%
 -T statistic in brackets and standard errors below
Source: own computations

Statistical output corresponding to Romanian companies

Equation Indicator	Equation I	Equation II	Equation III	Equation IV
Gross Margin	Dependent variable		0.325** (2.248) 0.144	
Return on equity		Dependent variable		
Return on assets				-5.735** (3.015) 1.902
Financial Leverage		4.621*(8.267) 5.516	Dependent variable	-9.237 * (3.009) 0.306
Debt to EBIT	-0.0001 (-0.384) 0.0003	-1.061 (1.181) 0.898	-0.073* (1.018) 0.007	Dependent variable
Long Term Debt to Total Assets	0.099 (1.989) 0.049			
Inventory to cash and equivalents	0.448 (1.311) 0.342	-5.071 (1.545) 3.215		
Total current assets to Net Sales	-0.030 (-1.281) 0.023	5.311 (1.315) 0.398	1.125** (7.888) 0.142	1.583* (5.176) 0.305
Size (log (sales))	0.083 (1.526) 0.054	1.061* (6.040) 1.755	1.021** (2.142) 0.477	-1.835* (1.703) 0.77
Tangible Assets to Total Assets	0.040** (1.971) 0.020		1.246* (5.951) 0.209	1.979* (4.816) 0.410
No. of observations	100	100	100	100
Adjusted R-squared	0.302	0.419	0.289	0.275

*= Significant at 0%   **= Significant at 5%   ***= Significant at 10%
  -T statistic in brackets and standard errors below
Source: own computations

Annex 11

Statistical output corresponding to Hungarian companies

Indicator \ Equation	Equation I	Equation II	Equation III	Equation IV
Gross Margin	Dependent variable		1.396*** (1.385) 1.008	
Return on equity		Dependent variable		
Return on assets				2.655* (6.854) 2.655
Financial Leverage		0.211* (1.523) 0.013	Dependent variable	0.037*** (1.360) 0.02
Debt to EBIT	0.01 ** (1.277) 0.0008	0.000113 (0.1464) 0.0007	-2.165 (1.745) 1.240	Dependent variable
Long Term Debt to Total Assets	-0.151* (7.645) 0.019			
Inventory to cash and equivalents	2.491** (3.436) 0.725	0.144*** (0.683) 0.212		
Total current assets to Net Sales	1.334* (3.666) 0.364	0.587 (1.543) 0.380	9.779** (3.463) 2.823	1.917 (5.568) 0.344
Size (log (sales))	1.334* (3.666) 0.364	-0.182* (8.373) (0.021)	2.165 (1.745) 1.240	7.216 (7.326) 0.985
Tangible Assets to Total Assets	-0.151* (7.645) 0.019		-0.070 (0.841) 0.2077	8.782* (4.784) 1.835
Adjusted R-squared	0.389	0.284	0.216	0.423

*= Significant at 0%   **= Significant at 5%   ***= Significant at 10%
 -T statistic in brackets and standard errors below
 Source: own computations

Statistical output corresponding to Polish companies

Equation / Indicator	Equation I	Equation II	Equation III	Equation IV
Gross Margin	Dependent variable		2.072 (1.564) 1.324	
Return on equity		Dependent variable		
Return on assets				2,670 (0.535) 0.004
Financial Leverage		0.000276 (0.055) 0.005	Dependent variable	1,380 (0.535) 0.084
Debt to EBIT	-0.008 (4.897) 0.001	0.003 (1.575) 0.001	0.058 (1.332) 0.043	Dependent variable
Long Term Debt to Total Assets	-0.148 (1.585) 0.093			
Inventory to cash and equivalents	0.049* (0.099) 0.076	-0.002 (0.535) 0.004		
Total current assets to Net Sales	-0.007 (0.099) 0.076	0.083 (0.986) 0.084	3.304** (2.170) 1.522	5,08 (1.756) 0.001
Size (log (sales))	0.585* (1.379) 0.042	0.030 (0.738) 0.041	1.975*** (1.650) 1.196***	3,150 (0.738) 0.041
Tangible Assets to Total Assets	-0.005 (1.315) 0.004		2.9 (0.239) 0.121	0,951 (0.055) 0.005
Adjusted R-squared	0.421	0.285	0.386	0.452

*= Significant at 0% **= Significant at 5%   ***= Significant at 10%
 -T statistic in brackets and standard errors below   Source: own computations
Annex 13 – Random effects

Czech Republic

Equation / Company	Equation I	Equation II	Equation III	Equation IV
Company I	-0.254	9.327	-27.114	-11.015
Company II	73.979	-1.097	9.196	30.857
Company III	-29.443	-4.058	57.141	-80.577
Company IV	24.520	5.511	15.938	-35.217
Company V	-22.510	4.903	-51.564	-38.291
Company VI	12.525	-2.576	22.558	-22.773
Company VII	-9.557	1.364	-28.436	35.081
Company VIII	-11.413	1.106	-54.387	-38.040
Company IX	-4.836	5.103	-77.736	10.423
Company X	12.674	7.896	65.342	16.786

Slovakia

Equation / Company	Equation I	Equation II	Equation III	Equation IV
Company I	35.949	31.541	55.972	-14.421
Company II	19.599	14.114	66.358	-16.976
Company III	77.930	18.200	31.907	-15.435
Company IV	-46.804	-95.135	17.834	-22.706
Company V	99.781	-93.084	-84.480	37.258
Company VI	39.068	66.116	57.725	-64.676
Company VII	-11.473	-86.327	-30.401	-41.426
Company VIII	80.4475	90.421	-49.577	-40.378
Company IX	13.4427	22.170	91.182	44.385
Company X	11.9023	70.490	83.975	-82.325

Hungary

Equation / Company	Equation I	Equation II	Equation III	Equation IV
Company I	-21.938	-84.323	-16.236	48.443
Company II	61.629	87.198	88.012	29.992
Company III	-57.247	11.331	-16.276	21.811
Company IV	31.903	60.110	23.721	93.772
Company V	31.604	12.633	35.952	42.116
Company VI	-12.487	12.696	97.348	93.776
Company VII	49.231	-32.542	-12.757	11.001
Company VIII	70.220	-77.507	-18.398	13.796
Company IX	-38.286	16.710	-32.435	-31.518
Company X	-77.990	19.428	55.060	76.428

Romania

Equation / Company	Equation I	Equation II	Equation III	Equation IV
Company I	3.899	-1.388	-1.711	-7.950
Company II	-2.239	2.356	2.741	-5.921
Company III	-2.270	2.362	2.701	9.898
Company IV	-2.272	1.417	2.711	2.214
Company V	2.148	6.164	8.401	-2.688
Company VI	-7.256	1.164	3.721	13.330
Company VII	-3.276	-10.411	-1.101	-8.903
Company VIII	-2.742	-1.033	-9.421	13.487
Company IX	-2.058	7.124	-1.791	-1.734
Company X	3.012	5.507		-2.939

Poland

Equation Company	Equation I	Equation II	Equation III	Equation IV
Company I	-1.599	3.602	-8.602	5.461
Company II	-7.693	-5.187	8.862	3.372
Company III	3.569	-6.190	-9.301	8.875
Company IV	1.821	9.617	-1.245	1.173
Company V	3.773	3.137	3.919	-2.282
Company VI	8.045	3.902	-1.258	1.142
Company VII	8.299	-2.466	3.032	2.189
Company VIII	-4.705	3.526	-6.226	-1.226
Company IX	-7.852	1.040	-1.894	-8.464
Company X	-7.852	1.040	-1.894	-8.461

Source: own computations

Annex 14

Impact factors at the level of CEE countries

	Gross margin	Financial Leverage	Return on Equity	Debt to EBIT
Poland	Inventory to cash and equivalents, Size	Total current assets to Net Sales, Size		
Czech Republic	Debt to EBIT Long Term Debt to Total Assets Inventory to cash and equivalents Size Tangible Assets to Total Assets	Gross Margin Size Tangible Assets to Total Assets	Financial Leverage Inventory to cash and equivalents Size	Return on Assets Financial Leverage Total current assets to Net Sales Size Tangible Assets to Total Assets
Slovakia	Debt to EBIT Long Term Debt to Total Assets Total current assets to Net Sales Size Tangible Assets to Total Assets	Gross Margin Size	Financial Leverage Size	Financial Leverage Size
Romania	Tangible Assets to Total Assets	Gross Margin Debt to EBIT Size Tangible Assets to Total Assets	Financial Leverage Size	Return on Assets Financial Leverage Tangible Assets to Total Assets
Hungary	Debt to EBIT Long Term Debt to Total Assets Inventory to cash and equivalents Total current assets to Net Sales Tangible Assets to Total Assets	Gross Margin Total current assets to Net Sales	Financial Leverage Inventory to cash and equivalents Size	Return on Assets Financial Leverage Tangible Assets to Total Assets