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## Article

# Corporate management : capital structure and tax shields

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## Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics  
Düsternbrooker Weg 120  
24105 Kiel (Germany)  
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)  
<https://www.zbw.eu/econis-archiv/>

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**Lucia Michalkova,**


University of Zilina, Slovakia

 ORCID ID, 0000-0002-3072-7396

email: [lucia.michalkova@fpedas.uniza.sk](mailto:lucia.michalkova@fpedas.uniza.sk)

**Vojtech Stehel,**

Institute of Technology and Business in Ceske Budejovice, Czech Republic

 ORCID ID, 0000-0001-6068-6794

email: [stehel@mail.vstecb.cz](mailto:stehel@mail.vstecb.cz)

**Elvira Nica,**

Center for Human Resources and Labor Studies at AAER, USA;

The Bucharest University of Economic Studies, Romania

 ORCID ID, 0000-0002-8368-8028

email: [popescu\\_elvira@yahoo.com](mailto:popescu_elvira@yahoo.com)

**Pavol Durana,**

University of Zilina, Slovakia

 ORCID ID, 0000-0001-5975-1958

email: [pavol.durana@fpedas.uniza.sk](mailto:pavol.durana@fpedas.uniza.sk)

Correspondence author: [lucia.michalkova@fpedas.uniza.sk](mailto:lucia.michalkova@fpedas.uniza.sk)

## CORPORATE MANAGEMENT: CAPITAL STRUCTURE AND TAX SHIELDS

**Abstract.** *Corporate management affects taxable profit through capital structure and tax shields. The reason for these manipulations is primarily to minimize corporate taxes and maximize the corporate market value and shareholder value of both listed and unlisted companies. The study explores the relationship between the tax shield and the capital structure and the influence of earnings management on it. Secondly, it evaluates which of the known models of capital structure best suits the conditions of the analyzed countries concerning tax and non-tax profit optimization. These effects were examined on panel data of more than 5,000 non-financial Slovak and Czech companies from 2014 - 2017. Three variants of the leverage ratio (total short-term and long-term) were used as proxies for the capital structure. Tax shields were examined at the level of the effective tax rate, profit manipulation at the level of discretionary accruals by checking firm-level factors and country-level factors (GDP and inflation). The negative dependence of profitability and leverage indicated that companies follow the conclusions of the Pecking order theory modified for emerging economies. Slovak and Czech profitable companies use tax interest and non-interest benefits only to a small extent since it is being replaced by non-tax profit manipulation (earnings management). Instead, indebted businesses tend to increase accounting profits to obtain cheaper long-term debt. Moreover, accounting manipulations have a negative impact on short-term debt as a high degree of indebtedness enhances debt holders' demands for quality accounting profit. The authors proved that conclusions could be improve theoretical knowledge of the capital structure in Czech and Slovak companies. Besides, developed approach could be useful in the decision-making of all stakeholders (managers, equity holders, and debt holders/creditors).*

**Keywords:** capital structure decision, tax effects, earnings quality, modified Pecking order theory, emerging economy.

**Introduction.** Capital structure is one of the keys and most discussed topics of financial management. Debt is generally considered less risky and less expensive than equity. Debt holders have a guaranteed debt repayment over a specified period, for which they require a lower yield. Equity holders, although, put their capital in an enterprise without any security and face high corporate risk. From this premise,

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companies should maximize their leverage and minimize the cost of capital (Kliestik et al., 2018). However, the growth of leverage emphasizes the default risk and thus the cost of debt. The suitable choice between equity and debt can ensure the growth of key financial performance indicators: corporate market value, cash flow, and earnings (Lehutova et al., 2013). In emerging countries, especially in the Slovak and Czech Republic, capital structure decisions have not been central and systematically done under significant economic changes over 30 years. So far, so-called golden rules have been used (Kliestikova et al., 2017). First of all, a golden rule of financing states that equity and long-term debt should fund non-current assets; current assets by short-term debt. In addition, there are four other financial rules as follows:

- the risk compensation golden rule (debt to equity ratio equal to one at least);
- two liquidity golden rules: golden rule 1:1 and 2:1 (cash and cash equivalents are equal at least to value of short term debt and/or short term debt is at least twice lower as current assets);
- the gold ratio rule (investment growth should not be higher than turnover growth) (Konecny, 2013).

The risk compensation golden rule is sometimes modified to a 2:1 ratio (the debt should be a maximum of two-thirds of total capital). However, this modification applies only to riskier industries.

Economists in developed countries, especially Anglo-Saxon economies, have created a coherent system of capital structure theories. Modigliani (1958) and Miller (1963) used the first widely accepted model, whose theory was based on strict assumptions like information symmetry and no taxes. Subsequently, Myers (1984) introduced capital structure as a compromise between the advantage of debt and the cost of financial distress (trade-off theory). On the contrary, Ross's (1977) signaling theory or Pecking Order Theory by Myers and Majluf (1984) examine the role of information on capital decision. These theories opposed to funding rules take into account other factors affecting the capital structure. The most discussed studies, particularly Titman and Wessels (1988), Frank and Goyal (2003), Jensen and Meckling (1976) or Rajan and Zingales (1995), examined the impact of firm-specific factors like tangibility, liquidity, profitability, risk, business growth, business size, and tax aspects.

Theories and determinants of capital structure have been tested in many ways in developed economies. There are much fewer research studies in emerging economies (e.g., Nivorozhkin, 2003; Booth et al., 2001; Bas et al., 2009; Lucey and Zhang, 2010). It should be pointed out that these studies have taken into account various emerging countries. The Slovak and Czech economies have been minimally studied. Czech companies investigated by Krauseova (1995), Weill (2004), Bauer (2004a) Pinkova (2012), Stekla and Gryerova (2017), Stryckova (2017), Nadirov et al. (2021). The ratio between equity and debt in the Slovak economy was addressed by Polavkova (2000), Kanderova (2003), Reznakova et al. (2010), Hrabovska (2007) or Belas et al. (2018). The studies mentioned above mainly examined SMEs.

Tax deductibility of interest and other expenses result in the tax shield. The tax shield resulting from the company's tax policy has a direct effect on leverage (debt tax shield). Its value is the purpose of a large number of studies that use different assumptions about the company's debt policy: fixed debt, constant leverage, or an optional approach allowing flexible capital management (Myers, 1963; Harris and Pringle, 1985; Miles and Ezzell, 1985; Couch et al., 2012; Molnar and Nyborg, 2011). The correct use of these methods is conditional on sufficient evidence of the capital structure given in the economy/enterprise under investigation. There is still considerable uncertainty concerning other factors of capital structure. One of them is earnings management. As McKee (2005) noted, profit manipulation, like the tax shield, is legal and purposeful financial management to report stable results within accounting rules (GAAP or IFRS). Profit manipulation techniques have a broader sphere of influence than the tax shield; a positive view of the business is provided regardless of profit maximization or minimization. Along with the tax shield, earnings management can be a decisive determinant of the capital structure and explain why corporate leverage and the number of high-risk transactions such as Leveraged Buyout (LBO) are increasing. Nonetheless, there is very little empirical evidence of profit manipulation as a capital structure determinant;

it was reported by An et al. (2016), Nikoomaran et al. (2016), Naz et al. (2011), or Tahir et al. (2011). Moreover, these studies have focused primarily on listed companies in non-European economies without sufficient depth examinations of other firm-specific factors.

Tax shield and Earnings management are two complementary aspects of the capital structure. The tax advantage of the debt has been sufficiently explored in developed countries, while in the emerging markets, capital structure theories are only gradually verified. Research on the capital structure and earnings management is insufficient and focused primarily on listed enterprises, excluding control financial variables (tangibility, profitability, liquidity, etc.). Notably, the tax shield and earnings management have not yet been investigated together as determinants of capital structure in developed and emerging economies. The study explores the relationship between the tax shield and the capital structure and the influence of earnings management on it. Secondly, it evaluates which of the known models of capital structure best suits the conditions of the analyzed countries concerning tax and non-tax profit optimization. The sample contained 5339 Czech and 2043 Slovak listed and unlisted companies for 2014-2017. Panel data regression analysis was chosen as a suitable statistical method as it can include both time and crossover variant variables. The one-way fixed model and random model were tested based on the Hausman test. The leverage ratio in three forms was tested as a dependent variable: total, short-term and long-term leverage. The tax shield was quantified based on an effective tax rate. The proxy for accrual-based earnings management was a modified Jones model. In addition, other determinant capital structures have also been investigated: tangibility, liquidity, profitability, firm size, and growth. At the country level, two macroeconomic indicators were tested: Inflation and GDP growth.

The paper is structured into five sections. The first part provides a literature review to examine the main theories of capital structure, their verification in the emerging economies, and the major determinants of capital structure. The second section describes the regression analysis of panel data and selected dependent and independent variables. The discussion part compared the results for both countries. It determined whether the companies are following the Trade-Off or the Pecking Order theory or their combination and how tax and non-tax manipulations with profit affect leverage decisions. Furthermore, the impact of IFRS 16 Lease on the selected financial indicators is described. The conclusions are drawn in the final section.

**Literature Review.** Major theories of capital structure and empirical findings. The following chapter provides an overview of theoretical approaches to capital structure and some empirical findings from developed economies. Also, it presents the results of studies of emerging markets, including the results of Slovak and Czech companies. As mentioned above, Modigliani and Miller (1958) introduced The Irrelevance Proposition. It does not matter whether the enterprise is funding by equity or debt. The corporate market value remains unchanged. However, this theory had many unrealistic assumptions that were modified in 1963 (Modigliani and Miller, 1963). The corporate market value is growing as a consequence of debt growth and tax interest deductibility. Tax shield increases debt financing preference, increasing the financial distress risk of financial and default (Stiglitz, 1972). The financial distress cost depends on many factors. Deari and Deari (2009) stated that their value is proportional to the correlation between corporate risk management, default costs, and agent costs. Warner (1977) estimated that the cost of financial distress is on average 2.5% of the company's market value 3 years before the bankruptcy. Graham and Harvey (2000) reported that the direct financial distress cost is relatively low. Therefore, the leverage is much lower than optimal. Andrade and Kaplan (1998) argued that for high levered businesses, these costs are higher and estimated at 10-23%. The capital structure is a mutual compromise of the debt tax shield, financial distress, and agency costs (Huang and Song, 2006). Therefore, this approach is called the Trade-Off theory. Schwartz and Aronson (1967) or Taggart (1977) verified the Trade-Off theory. They confirmed the assumption that businesses have constant and target leverage that should be optimal. Auerbach (1985), Opler and Titman (1994), Marsh (1982), and Jalilvand and Harris (1984) have confirmed

these results. Miglo (2010) stated that high corporate tax rates imply higher debt ratios; notwithstanding, he claims that the Trade-Off theory is unable to explain some empirical findings on this issue as an inverse interrelationship between debt and ROA. As the answer to the Trade-Off theory shortcomings, it was created Pecking Order Theory. Firstly, it was proposed by Donaldson (1961). Myers and Majluf (1984) also considered information asymmetry between stakeholders (shareholders and managers). This approach divides funding sources into several groups, and equity is issued only when equity is overestimated. The issuance of shares is considered a bad signal and says that the company no longer has any other possibility of raising capital. The first option is internally generated resources such as depreciation or retained earnings. If these resources are not available, a debt is considered a suitable resource (from risk-free to the riskier). The last option is to issue new shares.

The main motive behind Pecking Order support is the inverse relationship of debt and profitability. Such results have been obtained, for example, by Kamath (1995), Rajan and Zingales (1988), or Titman and Wessels (1988). The latter found that over eighty percent of listed companies use internal resources, three-quarters of businesses use debt in the second place. The least preferred type of financing is the issue of shares for more than eighty percent of businesses. This theory explains many of the Trade-Off Theory deficiencies, but most studies only partially support this theory. Shyam-Sunder and Myers (1999) tested both mentioned theories. Pecking Order theory better explains businesses' financial decisions with higher explanatory power than other theories studied.

Frank and Goyal (2003) corroborated the theory for large enterprises with lower information asymmetry. However, for SMEs, the theory is not proven. Fama and French (2005) critically assessed this theory and reported that more than half of the companies had issued shares each year, despite not being financially distressed. It follows that the Pecking Order Theory is unable to explain the full capital structure of these enterprises. Similarly, Leary and Roberts (2010) found only timely support for this approach. Only more than thirty percent of the businesses surveyed are in line with the assumptions of this theory. Galpin (2004) explained equity preference over a debt. Thus, the cost of debt can often exceed the cost of issuing new shares. This finding may be a more negative image of the debtholders about the business versus equity holders. Seifert and Gonenc (2008) tested a sample of the US, British, German, and Japanese businesses. Their results show that only the Pecking order theory explained the behavior of Japanese businesses during the 1980s. However, some studies have produced ambiguous results. Haan and Hinloopen's (1999) study reported that both theories are important in financial decision-making. Similar results have also been reported by Gaud et al. (2007). Antoniou et al. (2008) investigated the capital structure of enterprises by panel data. Their results supported both of these theories; debt ratio is directly correlated with enterprise size and tangibility, nevertheless negatively correlated with profitability, business growth, and equity price developments. The trade-off theory is also supported since businesses have target leverage. All in all, both theories are substantial in identifying the capital structure. Likewise, Farhat et al. (2009) found that businesses, on the one hand, may have some optimal leverage, but individual financials can make decisions with Pecking Order theory. Alternatively, the company can combine both of these approaches. Eldomiaty and Ismail (2008) reported that ambiguous company behavior might be affected by a change in the conditions in which they operate. At high tax rates, the company increases its debt and thus the tax benefits. Oppositely, if the tax shield is not so strong, internal resources are more advantageous for businesses. In an emerging market environment, especially in Central and Eastern Europe, these theories have been more extensively explored for the past twenty years. Booth et al. (2001) explored the capital structure in advanced and emerging countries, too. The same effects sway the capital structure in the two areas. However, the different capital structure is caused by country-level conditions such as capital market development or GDP growth. Nivorozkin (2005) evaluated leverage in five European economies (Poland, Czech Republic, Estonia, Bulgaria, and Romania). Research suggested that corporate leverage is lower than in developed European countries, and inflation is negatively

correlated with leverage. Conversely, GDP growth is positively correlated. Delcours (2007) presented determinants of capital structure in so-called transition economies. She emphasized that no theory would in enough depth explicate the capital structure of Russian, Polish, Czech, and Slovak companies. Managers choose equity because it is believed that equity is a free source of capital, and equity costs are not considered. There are financial and other barriers to the banking system, lack of sufficient protection of equity and debt owners' rights, or underdeveloped capital markets. These conditions, in a substantial manner, sway corporate financial decisions.

Weill (2004) found that low profitability is associated with higher debt, while growth opportunities increase debt. A negative correlation was found between tangibility and leverage, while in four countries, the size of the business has no significant impact. Bauer (2004a) used a sample of listed companies in Visegrad Four. Subject to the findings, the leverage is directly related to the size of the business but inversely correlated with tangibility, profitability, and non-interest tax shield. These results indicated that these companies' management prefers the Pecking Order theory and internal resources. In another study, Bauer (2004b) used a sample of only Czech-listed enterprises. As in the previous case, the author stated that the results support the Pecking Order theory, but there are some contradictory results from the theoretical assumptions. On the contrary, the results confirmed that high growth opportunities imply more equity and internal resources in capital structure. Jindrichovska et al. (2013) stated that both theories help to explain the capital structure in Czech businesses and specify the major capital structure determinants. Stryckova (2017) surveyed Czech businesses through a questionnaire. An interesting finding was about the tax advantage. A tax shield is not considered to be very important, and businesses do not have target leverage. These results reject, to some extent, the Trade-Off theory. They have not previously been found in any similar research yet. In terms of Slovak enterprises, Polavkova's (2000) paper brings similar results to those of Czech companies. She has identified a direct relationship between enterprise size and leverage, an indirect correlation between leverage and profitability, as well as tangibility. The sample contained large joint-stock companies. Kanderova (2003) clarified determinants in industrial enterprises. She used a similar model to Titman and Wessels (1988). However, her results do not match the theoretical and empirical results of this model. The reason for these findings should be negative profit (loss) and low importance of internal resources (depreciation) on financing. Notwithstanding, the need to improve the functioning of the capital market and increase the availability of bank loans is highlighted.

Reznakova et al. (2010) used panel data from more than a thousand Slovak enterprises for 2002-2007. The main findings are in accordance with the Trade-Off theory, but the authors stressed no approach that can utterly explain the capital structure.

The previous text shows that many microeconomic and macroeconomic factors influence the capital structure. In the following, some key factors and their impact on equity preference will be clarified.

An enterprise may use assets, particularly fixed assets, as collateral. The fixed asset value represents an inverse value to the bankruptcy cost; asset growth increases debt capacity. According to Pecking Order theory, a large number of tangible assets lead to lower information asymmetry. Such businesses can issue equity without sending negative signals about the status of the business. All in all, there is a negative correlation between tangibility and debt.

Liquid assets may represent a source of capital for an enterprise and significantly impact financial decisions. High liquidity indicates financial health, as seen in many bankruptcy models (Altman, 1966). A financially healthy company has a higher debt capacity and lower debt cost. Moreover, high-liquid (current) assets can be used as an internal source of funding. Therefore, high liquidity could enable less leverage for the company. The profitability of the company has a positive effect on leverage. Profitable businesses are considered to be risky to a lesser extent. Thus, they can borrow a higher debt with lower debt costs and minimum financial distress costs. Such businesses optimize their capital structure in favor of debt to maximize their interest tax shield. Nevertheless, profitable companies have a negative debt preference in

conformity with the Pecking Order theory. Profitable enterprises have sufficient internal resources as retained profits that could be used. Enterprise size is positively related to leverage. Larger companies have better access to debt, lower cost of debt, which talks about higher interest tax benefits. Such a measure also discourages managers from wasting free cash flow. From another perspective, larger enterprises, especially listed companies, provide a great deal of information, reducing information asymmetry. Equity financing is much easier and does not reduce the market value. In addition, large businesses are often older, have fewer growth opportunities and a higher percentage of retained earnings.

Generally, companies with lower growth opportunities require less capital than those with higher growth. High-growth companies are riskier because a portion of their assets should not be used as collateral. Corporate growth should be financed by debt as per Pecking order theory. Internal resources are seldom sufficient to finance all investment opportunities.

The interest tax shield is a tax advantage on paid interest. The company will increase its debt and thus the tax benefit until the marginal increment of the interest tax shield is equal to the marginal increase in the financial distress cost. Therefore, the Trade-Off theory assumes a positive relationship between leverage and interest tax advantage. A non-debt (non-interest) tax shield represents a tax advantage for all expenses except for interest paid. Since depreciation is commonly the dominant source of it, it is called a depreciation tax shield. However, it can also be based on the tax-deductibility of R&D costs in a broader context. DeAngelo and Masulis (1980) reported that debt and non-interest tax shields are mutually offset. If the depreciation tax advantage is large enough, the interest tax shield may be lower. It follows that higher leverage reduces the need for a non-debt tax shield and vice versa.

Earnings management means different use of different accounting techniques to achieve the desired business image. This phenomenon is a proxy for information asymmetry between shareholders and managers. Consequently, earnings management is directly linked to the agency theory of free cash flow and the Pecking Order theory. Higher earnings management activity indicates increased demand for debt. Consistent with the Pecking Order theory, business executives strive to apply earnings manipulation to reduce the cost of debt information asymmetry compared to equity. Therefore, more indebted businesses will apply more earnings management.

Inflation influences reducing the cost of debt and real interest rates, increasing the tendency to invest and finance investments by new debt. At the same time company can repay its debt easier as it increases its revenues. The growth of the tax shield also makes debt growth more attractive. However, Beck et al. (2008) stated that inflation increases earnings volatility, increasing costs of financial distress. Enterprises in a high-inflation environment use equity more than debt. If they use debt, they prefer short-term instead of long-term debt.

If GDP growth is developing positively, this is a signal of improved macroeconomic conditions and risk reduction, a prerequisite for profit growth. In such conditions, a business may be more levered and use the interest tax shield more. Nonetheless, higher profits lead to higher free cash flow and larger internal sources preferable to interest-bearing debt.

Finally, the influence of the individual factors on the leverage is summarized in Table 1. In some cases, the capital structure theory is not clear, so the correlation from previous studies is unknown.

**Table 1. Theoretical correlation between leverage and selected capital structure determinants**

Variable	Predicted correlation	
	Trade-Off Theory	Pecking Order theory
Tangibility	+	-
Liquidity	+	-
Profitability	+	-
Size	+	-
Growth	-	+

Continued Table 1

Variable	Predicted correlation	
	Trade-Off Theory	Pecking Order theory
Debt tax shield	+	unknown
Non-debt tax shield	-	unknown
Earnings management	unknown	+
Inflation	+	unknown
GDP growth	+	-

Sources: developed by the authors.

**Methodology and research methods.** This chapter looks at methods and variables necessary for build the capital structure model. Amadeus database was chosen as a suitable source of study data. Several sampling criteria were subject to the fulfillment of the objective of the study. In the first place, the companies had to be registered in Slovakia or the Czech Republic, then the value of pre-tax profit of more than 100,000 Euros and assets of more than 2,000,000 Euros in 2014 - 2017. It is assumed that in such enterprises tax shield is obtained, and managers use earnings management techniques. 5339 Czech and 2043 Slovak enterprises met these criteria. Data covers 2014 - 2017. Given the subject matter of this paper, leverage was used as a dependent variable. However, debt is divided into short-term and long-term. Therefore, three proxies for the capital structure were used: Total leverage (TLEV), Short-term leverage (STLEV), and Long-term leverage (LTLEV). This breakdown was used because of the different influence of capital structure determinants on different types of debt (Hall et al., 2000). Enterprises are in different proportions financed by short-term and long-term debt. Thus it helps precise results of this study. The formulae for quantifying the dependent variable are as follows:

$$TLEV = \frac{\text{Total debt}}{\text{Assets}} \quad (1)$$

$$STLEV = \frac{\text{Short-term debt}}{\text{Assets}} \quad (2)$$

$$LTLEV = \frac{\text{Long-term debt}}{\text{Assets}} \quad (3)$$

Studies mentioned in the Literature review chapter showed several important capital structure determinants, particularly tangibility, profitability, liquidity, and others. Thus, 10 (eight firm-level and two country-level) variables were selected (Table 1). The algorithms for calculating the firm-specific determinants are proven in Table 2.

Table 2. Formulae of firm-level variables

Variable	Label	Formula
Tangibility	TANG	Tangible Fixed Assets/Total Assets
Liquidity	LIQ	Current Ratio
Profitability	PROF	EBITDA Return on Assets
Size	SIZE	ln(Turnover)
Growth	GROWTH	Percentage change of Total Assets
Debt tax shield	DTS	Effective tax rate
Non-debt tax shield	NDTS	Depreciation/Total Assets
Earnings management	EM	Discretionary accruals quantified by the modified Jones model

Sources: developed by the authors.



Earnings management can be detected by Discretionary Accruals (DA), part of Total Accruals (TA) influenced by business managers. The Jones (1991) model is most commonly used to quantify DA. However, the model is limited by Type I and Type II errors (Bernard and Skinner, 1996). Dechow et al. (1995) remodeled it to the well-known modified Jones model. It is necessary to run a regression with the dependent variable Total accruals to estimate Discretionary accruals. The total accrual is estimated using the formula by Hoglund (2012). This model can be applied to cross-sectional data and time series, too. The regression model estimated Non-discretionary accruals (NDA), residuals were Discretionary accruals. In summary, the DA estimate is given in equations (3-5).

$$TA = \Delta CA - \Delta CL - \Delta Cash + \Delta STD - Dep \quad (4)$$

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 \frac{1}{A_{it-1}} + \alpha_1 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad (5)$$

$$TA = NDA + DA \quad (6)$$

where  $\Delta CA$  – change Current assets;  $\Delta CL$  – change in Current liabilities;  $\Delta Cash$  – change in Cash;  $\Delta STD$  – change in Short-term debt;  $Dep$  – Depreciation;  $TA_{it}$  – Total accruals in year  $t$ ;  $A_{it-1}$  – Assets in year  $t-1$ ;  $\Delta REV_{it}$  – change in Revenues between years  $t$  and  $t-1$ ;  $\Delta REC_{it}$  – change in Receivables between years  $t$  and  $t-1$ ;  $PPE_{it}$  – Property, Plant & Equipment in year  $t$ .

Two country-level factors were used: inflation (INFL) and GDP growth (GDPGROW). For comparability, Harmonized Index of Consumer Prices (HICP) was applied as an appropriate inflation rate. Data for both indicators were obtained from Eurostat. The Mahalanobis distance approach detected extreme values by Tabachnick and Fidell (2007) as they could considerably reduce the reliability of the model. The panel (longitudinal) data model was considered as an appropriate model to estimate the impact of these factors on leverage since data were cross-sectional and time-series, too. Ajmani (2009) reported that panel data has several advantages: panel data increases sample size. If there are  $n$  subjects,  $T$  time periods, there are total  $nT$  data points. These can control unobserved heterogeneity. Hsiao (2014) also emphasized that it allows increasing degrees of freedom and reduces multicollinearity.

There are two fundamental types of longitudinal data models: fixed effect and random effect model. Using the notation given in Greene (2011), the fixed effect panel model is given, as follows:

$$y_{it} = \alpha_i + x_{it}^T \beta + \varepsilon_{it} \quad (7)$$

where  $i = 1, \dots, n$  and  $t = 1, \dots, T$ .

Intercept captures the subject (company) specific, unobserved, constant time effect. In the case of simple regression, a different intercept would result in parallel regression lines for different subjects (Ajmani, 2009). By way of contrast, some assumptions distinguish the random effect model from the fixed effect model. The selected subjects represent the entire population, and the model results can be generalized to the whole population. One of the key and necessary assumptions is zero correlation between intercept (unobserved effects) and independent variables. To determine which model is appropriate, the Hausman test is applied. The null hypothesis suggests that random effects are uncorrelated with independent variables (a random effect model is preferred) versus the fixed effect model's alternative hypothesis. However, Wooldridge (2010) stated it is very unlikely that an intercept (e.g., an industry effect) is uncorrelated with an independent variable as tangibility.

We used Regression Analysis of Panel Data Task in SAS Enterprise Guide. The model was tested at the 0.05 level, the F-test, the t-test, respectively. As mentioned above, very low collinearity is in panel data models> Thus, the correlation matrix verified collinearity. The model is specified by the Hausman test (Cipra, 2013). The purpose of these procedures is to verify the capital structure model in the Slovak and Czech Republics, to examine the impact of earnings management and tax shield on the business leverage.

**Results.** Initially, all firm-level variables (financial ratios and other indicators) were quantified. Businesses that had incomplete financial statements were removed. It was identified 1,037 outliers according to Mahalanobis distance, which was removed. Finally, after this procedure, the net sample contained 3753 Czech and 1305 Slovak enterprises. The overall sample contained 4 observations for each enterprise. However, based on Table 2, the financial indicators for only three years could be used. Overall, the net sample contained 11259 (3753x3) data points for the Czech Republic and 3915 (1305x3) data points for Slovakia. These financial indicators cover the three years from 2015 to 2017. Table 3 shows the descriptive statistics of firm-specific factors.

**Table 3. The summary statistics for Slovak and Czech companies**

The Slovak republic					The Czech republic				
Variable	Mean	Std Dev	N	Median	Variable	Mean	Std Dev	N	Median
TLEV	0,4934	0,2355	3915	0,5044	TLEV	0,3963	0,2303	11259	0,3713
STLEV	0,4016	0,2293	3915	0,3737	STLEV	0,2779	0,2051	11259	0,2262
LTLEV	0,0918	0,1307	3915	0,0305	LTLEV	0,1185	0,1773	11259	0,0373
TANG	0,3557	0,2713	3915	0,3245	TANG	0,3900	0,2620	11259	0,3660
LIQ	2,3832	3,7004	3915	1,4800	LIQ	3,6487	4,8954	11259	2,2280
PROF	0,1620	0,1010	3915	0,1425	PROF	0,1538	0,0824	11259	0,1387
SIZE	9,3676	1,3064	3915	9,3085	SIZE	9,3543	1,3129	11259	9,2462
GROWTH	0,0655	0,1814	3915	0,0420	GROWTH	0,0907	0,1526	11259	0,0720
DTS	0,2362	0,0773	3915	0,2265	DTS	0,1936	0,0898	11259	0,1922
NDTS	0,0444	0,0336	3915	0,0386	NDTS	0,0419	0,0274	11259	0,0377
EM	0,0022	0,1345	3915	0,0065	EM	0,0025	0,1032	11259	0,0037

Sources: developed by the authors.

The table above shows that the average leverage of Czech enterprises is lower than Slovak enterprises. The average Slovak enterprise leverage is almost 50%. It is the maximum allowable leverage according to the golden rule of risk compensation. On the other hand, the average Czech sample company has only about 40% leverage. Slovak enterprises have a significantly higher share of short-term debt; more than 40% of the total capital is short-term debt.

In contrast, Czech businesses use only 28% of short-term debt. This rather significant contrast in financing is explained by the inefficiency of the capital market (Gandolfi et al., 2018). There is a small, fairly underdeveloped capital market in both countries. The Prague Stock Exchange has several times higher market capitalization than the Bratislava Stock Exchange (Eurostat, 2019). The higher volume of trades enables Czech companies to obtain capital more easily and efficiently (both equity and debt), which is reflected in more than 70% of the long-term capital in total capital. Slovak companies make greater use of short-term debt. Banks are the primary source of long-term bank loans, bound by high debtor demands and capital adequacy. These standards have been high since the last financial crisis in 2009 (Kovarnik and Hamplova, 2018). Liquidity in both countries is higher than the general standard for the current ratio (1.5 - 2). The values indicate that average businesses in both countries are financially sound and have enough liquid assets. In terms of Czech companies, it should be noted that higher liquidity implies a higher percentage of internal resources. This assumption is demonstrated in the higher value of equity versus debt. Business growth and growth opportunities are expressed in GROWTH. There is a significant

difference between the median enterprise and the average enterprise. The average Czech company grew by more than 9% yearly, while the Slovak company only grew by 6.5%. This finding is in line with GDP growth; the average year-on-year GDP growth in the Czech Republic was 4.04% compared to 3.50% in the Slovak economy in the years under review.

The debt tax shield, measured by an effective tax rate, shows that Slovak businesses do not use the potential of their leverage. The Slovak corporate tax rate is 21%. However, an effective tax rate says that businesses pay the government much more than their legal duty. The importance of a tax shield as a value generator is suppressed. Conversely, both average and median Czech companies pay the government approximately as much as its legal obligation. It means that despite imputable tax items, the company pays a similar tax as if there was no tax shield. In contrast, the non-debt tax shield is similar in both countries.

Discretionary accruals (the proxy for earnings manipulation) indicate that managers of companies in both countries increase their accounting profits. Chi and Gupta (2009) found that this situation is associated with an overvalued enterprise. Earnings management in overvalued businesses is much more applied than in undervalued businesses (Kothari et al., 2006). Managers are more encouraged to overvalued company value since both managers and equity holders profit from high equity prices. Equity holders can sell their shares at a higher price. Managers may obtain bonuses, stock options, or job security as business value increases. Furthermore, the high business value is an advantage in obtaining debt at a lower debt cost since that company seems to be high creditworthy.

Before the model was created, the absence of multicollinearity in the model was assumed. The basic tool for verification is the correlation matrix. Given the interdependence of economic data, the existence of complete independence of explanatory variables is not possible. The permissible limit is the value of the correlation coefficient 0.75. If the correlation coefficient is higher than a given value, then collinearity (multicollinearity) is considered to be harmful. Two correlation matrices of explanatory variables were created for each country. The findings showed that, in both cases, all correlation coefficients are less than 0.75 or, more specifically, less than 0.6. It means that low collinearity occurs between data, but the estimation of regression coefficients is not significantly biased (Soltes, 2008).

Subsequently, the regression model of panel data, one-way fixed, and one-way random model were formed. Three models concerning leverage ratios (Total leverage, Short-term leverage, and Long-term leverage) were created for both countries. There were ten independent variables: 8 firm-specific and 2 country-specific variables. Table 4 shows the regression coefficients t-test and p-values for models of Slovak companies.

**Table 4. Results of fixed effects panel data models (Slovak companies)**

Table 1: Results of mixed effects panel data models (10000 companies)					
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Pr >  t
Dependent variable: TLEV					
TANG	1	0.00080	0.02650	0.03000	0.97590
LIQ	1	-0.00976	0.00075	-13.03000	<.0001
PROF	1	-0.32363	0.02790	-11.59000	<.0001
SIZE	1	0.06047	0.00902	6.70000	<.0001
GROWTH	1	0.06060	0.00746	8.12000	<.0001
DTS	1	0.04245	0.01990	2.13000	0.03300
NDTS	1	-0.39024	0.13460	-2.90000	0.00380
EM	1	-0.07199	0.00912	-7.89000	<.0001
Inflation	1	-0.67026	0.13030	-5.14000	<.0001
GDP growth	1	0.93174	0.22760	4.09000	<.0001

Continued Table 4

Variable	DF	Estimate	Standard Error	t Value	Pr >  t
<b>Dependent variable: STLEV</b>					
TANG	1	-0.23364	0.02790	-8.38000	<.0001
LIQ	1	-0.01167	0.00079	-14.83000	<.0001
PROF	1	-0.21028	0.02940	-7.16000	<.0001
SIZE	1	0.06384	0.00948	6.73000	<.0001
GROWTH	1	0.04330	0.00784	5.52000	<.0001
DTS	1	0.04246	0.02090	2.03000	0.04250
NDTS	1	-0.19055	0.14150	-1.35000	0.17810
EM	1	-0.12748	0.00959	-13.29000	<.0001
Inflation	1	-0.58547	0.13700	-4.27000	<.0001
GDP growth	1	0.49332	0.23920	2.06000	0.03930
<b>Dependent variable: LTLEV</b>					
TANG	1	0.23444	0.02320	10.09000	<.0001
LIQ	1	0.00192	0.00066	2.92000	0.00350
PROF	1	-0.11335	0.02450	-4.63000	<.0001
SIZE	1	-0.00337	0.00790	-0.43000	0.66980
GROWTH	1	0.01730	0.00654	2.65000	0.00820
DTS	1	-0.00001	0.01740	0.00000	0.99950
NDTS	1	-0.19969	0.11790	-1.69000	0.09040
EM	1	0.05548	0.00799	6.94000	<.0001
Inflation	1	-0.08479	0.11420	-0.74000	0.45790
GDP growth	1	0.43841	0.19940	2.20000	0.02800

Sources: developed by the authors.

All three models are significant at a 0.05 level and 0.01 with a p-value <.0001. Adjusted R<sup>2</sup> is higher than 88% in all models, namely 95.40% for TLEV, 94.64% for STLEV, and 88.54% for LTLEV. Both indicators state that the models correctly detected the determinants of capital structure. Furthermore, a one-way random effect model was created for comparison. The model specification was verified with Hausman Test. In all cases, Hausman Test had a p-value less than .0001. Test the null hypothesis is rejected. The fixed-effects model is preferable. Table 5 shows a similar model for Czech businesses.

Table 5. Results of fixed effects panel data models (Czech companies)

<b>Parameter Estimates</b>					
Variable	DF	Estimate	Standard Error	t Value	Pr >  t
<b>Dependent variable: TLEV</b>					
TANG	1	0.05314	0.01560	3.40000	0.00070
LIQ	1	-0.00322	0.00023	-13.85000	<.0001
PROF	1	-0.36280	0.01830	-19.80000	<.0001
SIZE	1	0.06422	0.00554	11.60000	<.0001
GROWTH	1	0.10870	0.00460	23.61000	<.0001
DTS	1	-0.00007	0.00886	-0.01000	0.99340
NDTS	1	-0.05231	0.06680	-0.78000	0.43330
EM	1	-0.08804	0.00649	-13.57000	<.0001
Inflation	1	-1.42851	0.06500	-21.98000	<.0001
GDP growth	1	0.21676	0.04350	4.99000	<.0001
<b>Dependent variable: STLEV</b>					
TANG	1	-0.19079	0.01730	-11.04000	<.0001
LIQ	1	-0.00594	0.00026	-23.12000	<.0001
PROF	1	-0.21042	0.02020	-10.40000	<.0001

**Continued Table 5**

Variable	DF	Estimate	Standard Error	t Value	Pr >  t
SIZE	1	0.05437	0.00611	8.89000	<.0001
GROWTH	1	0.08346	0.00509	16.41000	<.0001
DTS	1	0.00333	0.00979	0.34000	0.73340
NDTS	1	-0.03829	0.07370	-0.52000	0.60350
EM	1	-0.18682	0.00716	-26.08000	<.0001
Inflation	1	-0.83431	0.07180	-11.63000	<.0001
GDP growth	1	0.14576	0.04800	3.04000	0.00240
<b>Dependent variable: LTLEV</b>					
TANG	1	0.24393	0.01650	14.75000	<.0001
LIQ	1	0.00272	0.00025	11.05000	<.0001
PROF	1	-0.15238	0.01940	-7.87000	<.0001
SIZE	1	0.00985	0.00585	1.68000	0.09250
GROWTH	1	0.02524	0.00487	5.19000	<.0001
DTS	1	-0.00341	0.00937	-0.36000	0.71610
NDTS	1	-0.01401	0.07060	-0.20000	0.84260
EM	1	0.09878	0.00686	14.41000	<.0001
Inflation	1	-0.59420	0.06870	-8.65000	<.0001
GDP growth	1	0.07100	0.04590	1.55000	0.12220

Sources: developed by the authors.

Similarly, as the models for the Slovak Republic, all three models by F-test are significant as p-values were less than .0001. The Hausman test showed that the fixed effect model is more appropriate than the random effect model, as Wooldridge (2010) stated. Compared to the model for the Slovak Republic, adjusted R<sup>2</sup> is slightly higher, on average, 94% (96.31% for TLEV, 94.33% for and 93.05% STLEV for LTLEV). In summary, tax shields (debt and non-debt), earnings management, and control variables (liquidity, size, growth, etc.) significantly influence capital structure decisions. The interrelationships between the variables and their effects on leverage are described in the following section.

Tangibility is negatively associated with short-term leverage and, conversely, is directly correlated with long-term debt. In terms of regression coefficients, TANG has a more significant impact on the debt of Slovak enterprises. The nature of the TANG indicator explains the different influences on short-term and long-term debt. Fixed assets are collateral that provides debt. From the perspective of the Slovak and Czech economies, bank loans are the most frequent source of debt. However, the need to secure debt is more pronounced for long-term debt than for short-term debt. Nivorozkin (2003) mentioned another reason why short-term leverage is negatively linked to TANG. Thus, non-current fixed assets are generally funding by long-term debt matching maturity in the balance sheet. This statement corresponds to the golden rule of financing mentioned in the Introduction. It is a traditional indicator of the capital structure of Slovak and Czech businesses. For example, Booth et al. (2001), Cornelli et al. (1996), Joeveer, (2006), Bauer (2004a), Kalusova and Fetisovova (2015), or Reznakova et al. (2010) have found a negative effect of tangibility on debt ratios. Conversely, long-term debt is positively associated with tangibility. This result corroborates most existing studies and assumptions of Pecking Order theory. Studies of developed markets, as well as reported by Bevan and Danbolt (2002), Jensen et al. (1992), Titman and Wessels (1988), or Rajan and Zingales (1995), have achieved the same results. In the case of TLEV, the results showed a non-significant relationship with minimal positive impact.

An inverse correlation between liquidity and short-term debt was revealed to correspond to the Pecking Order theory. A significant portion of short-term debt leads enterprises to prefer internal resources to external ones. Sarlija and Harc (2012) discussed the relationship between leverage and liquidity and, in more detail, reaching similar conclusions. In addition, they argued that cash growth leads to a reduction

in both long-term and short-term debt. Internal financing as the retained earnings is more preferred. Conversely, long-term leverage is positively associated with liquidity. Liquidity is one of the main indicators of business health, and banks have strict requirements for this indicator. Therefore, higher liquidity makes it easier to obtain long-term debt against low liquidity. Similar results as we had also Anderson (2002), Akdal (2010), De Jong et al. (2008), or Kalusova (2015).

Profitability is inversely correlated with all types of debt. The results are consistent with most previous studies of both developed and underdeveloped markets (e.g., Rajan and Zingales, 1995; Frank and Goyal, 2009; Nivorozhkin, 2003; Prasilova, 2012; Bauer, 2004a). Pecking Order theory predicts that they fund profitable firms with more internal resources instead of debt. In terms of regression coefficients, profitability has a more significant impact on long-term leverage than short-term leverage. This result follows from the nature of a short-term debt that is more flexible to maintain liquidity and absorbs and mitigates changes in profitability. Opposite results would indicate trade-off theory as suggested by Jensen (1986), which stated that high debt reduces agency costs and costs of financial distress. Similar results were obtained by Downs (1993) or Reznakova et al. (2010).

Trade-off theory assumes that smaller businesses have less leverage than larger businesses. In this sample, both TLEV and STLEV are positively correlated with company size. Relatively smaller enterprises prefer short-term debt. In terms of the Slovak and Czech banking markets, obtaining short-term loans is less strict than for long-term loans. Enterprise size is an inverse indicator of default probability (Emerling and Wojcik-Jurkiewicz, 2018). Larger companies with higher turnover are more creditworthy. They can secure the long-term debt with collateral. Collateralized debt is less prone to default growth and has lower debt costs. An inverse relationship was discovered, notably by Titman and Wessels (1988) or Munro (1996). In contrast, most studies are consistent with our findings on positive correlation, such as Rajan and Zingales (1995), Bauer (2004b), or Kalusova and Fetisovova (2015).

Factor Growth is positively correlated with all leverage indicators in both countries surveyed. It contradicts the results of Rajan and Zingales (1995) or Hall et al. (2000). A positive correlation is considered a prerequisite for Pecking Order theory. Internal resources cannot sufficiently cover a business's growth potential. Therefore, a growing business uses more debt. A negative correlation has been reported mainly in developed countries, as demonstrated by the extensive study by De Jong et al. (2008), while positive correlation occurs mainly in emerging markets. The reason for this relationship is the less developed capital and banking markets. A deeper analysis of samples showed that total debt consists largely of trade credits. Thus, trade credits mainly finance the growth of enterprises in these countries. On the one hand, trade credit has a lower debt cost than a bank loan. On the other hand, a high percentage of trade credit increases the risk of insolvency. Bank loans or bonds are a more convenient form of financing business growth. As Nivorozhkin (2003) stated, a developed capital market linked to sufficient economic environment reforms in emerging economies leads to broader availability of capital. Nonetheless, these conditions can still not be considered to be fully met in the countries analyzed.

Inflation has a negative impact on all three leverage levels except for LTLEV in Slovak enterprises. It means that the rise in inflation results in a decline in debt. As mentioned above, the greater part of the debt is made up of trade credits. These are more sensitive to changing inflation than bank loans and bonds. The sensitivity to the price level changes decreases with increasing maturity. (Singh and Rao, 2018). By way of contrast, most studies link increasing price level with long maturity (Frank and Goyal, 2009) since inflation favors borrowers whose income is rising against a fixed repayment of principal. GDP growth is linked to business growth. GDP growth is positively correlated with all types of leverage. This matches with previous conclusions of the Trade-off approach. The improvement of macroeconomic indicators should result in debt growth. However, in the case of Slovak and Czech companies in the sample, it should be noted that GDP growth means growth in the company's economic activity and growth in trade credits.

The debt tax shield is positively associated with TLEV and STLEV in the sample of Slovak enterprises. In other cases, it is insignificant. These results are surprising as a meaningful impact of the tax shield on debt proportion is assumed. The authors propose several justifications for this relationship. First, the interest tax deductibility generates the tax benefit. However, the sampled enterprises have a predominance of short-term debt and a higher percentage of trade credits. Therefore, the impact of the debt tax shield is weak. Secondly, an effective tax rate is marginally affected by tax advantage since debt ratios are not formed on a one-off basis but result from long-term decisions (Mackie-Mason, 1990). Antoniou et al. (2008) argued if the company does not focus on optimizing the taxes paid, then the importance of the tax is weak concerning the debt ratio. In addition to the factors mentioned above, the tax advantage is not important or very important for businesses when deciding on the debt proportion (Stryckova, 2017). The non-debt tax shield is significantly negatively correlated with TLEV. Other indicators are also negatively correlated but not significantly. This result indicates a weak offset between debt and non-interest tax advantage, as DeAngelo and Masulis (1980) reported. Besides, similar results were obtained by Allen and Mizuno (1989). However, it is worth noting that the non-interest tax shield, as measured in the study, only takes into account depreciation. However, depreciation constitutes a significant but not the only component of the debt tax shield. Research and development costs are also a significant component. Nevertheless, Amadeus did not provide this information for Czech and Slovak companies. The last component of the capital structure model is Earnings management. LTLEV only confirmed the Pecking Order theory assumption. Many earnings management practices such as cookie-spring reserve, change in accounting methods, change in depreciation, sale of fixed assets, leaseback, or early repayment of debt are available to business management (McKee, 2005). An et al. (2016) and Nikoomaran et al. (2016) came to the same findings using a sample of listed companies. A debt supply for quoted companies is wider and includes traded debt such as bonds and other long-term instruments. A higher risk of debt default explains a positive impact on long-term debt. Enterprises use these techniques to send positive signals about their financial health, and debt holders are misled. They reduce their expected return on investment and hence debt costs for the enterprise. Similar results were found by Beatty and Weber (2003). Conversely, short-term leverage is negatively associated with accrual-based earnings manipulation. This result indicates that the debt monitoring hypothesis is true. Debt can reduce agent costs through credit monitoring. Jelinek (2007) and Fung and Goodwin (2013) found a similar result investigating how earnings manipulation affects short-term creditworthy debt decisions. Conversely, Gupta and Fields (2006) found that growth in short-term debt increases earnings management in the enterprise concerning earnings management.

Earnings management uses many of the techniques mentioned above. One of the most common methods of acquiring property is a lease. Since 1 January 2019, enterprises must implement Lease IFRS 16, which substitutes IAS 17 Leases. It changes the accounting for leases to low-value assets and short-term leases. The operating lease was charged as an off-balance sheet under the original standard. However, under IFRS 16, all leases (both financial and operating) are accounted for as assets and liabilities. Similarly, operating lease expense is charged under the new standard as depreciation, together with other operating costs and interest expense as part of the financial costs (PwS, 2016).

IFRS 16 will affect key indicators. It will increase the value of financial liabilities, reduce equity and increase asset value. This change will affect EBITDA, operating profit, financial costs (mainly interest paid), cash flow from operating, and financing activities in terms of the income statement. On the contrary, it does not change the value of pre-tax profit. These changes in accounting will significantly affect debt ratios as Gearing, asset ratios such as asset turnover or current ratio, as well as all EBITDA profitable ratios will be greater than those of the original standard (PwS, 2016). Ultimately, this change will also affect the value of the interest tax shield based on the value of debt and interest paid and the depreciation tax shield. However, a very small number of businesses are affected by this change in the emerging market

environment. Most businesses in the European Union (over 99%) are SMEs, where IFRS adoption for SMEs is not allowed (PwS, 2016). For this reason, only a small percentage of businesses will be affected by these changes in European emerging markets. Still, they may have a significant impact on further research of the tax shield and its impact on earnings management on capital structure. The adoption of this regulation also shows that leasing is an important tool for manipulating accounting as it is not a balance sheet item and is not observable for non-corporate stakeholders. Therefore, it is possible that leasing may be another significant source of debt, and its accounting practice is the uncontrolled influence of leverage decisions.

**Conclusions.** Capital structure management is one of the key corporate finance topics. Choosing the appropriate ratio between relatively more expensive equity and cheaper debt can improve key financial indicators such as profit, market value, and return on equity. However, in addition to the tax shield, earnings management and income smoothing have an undeniable impact on the leverage.

Therefore, the study explores the relationship between the tax shield and the capital structure and the influence of earnings management on it. Secondly, it evaluates which of the known capital structure models best suits the analyzed countries' tax and non-tax profit optimization conditions. The econometric model was quantified using financial information about 5339 Czech and 2043 Slovak listed and unlisted businesses. The sample covered 2014-2017. The model was created in three leverage levels (total, short-term, and long-term) for eight firm-level factors and two country-level indicators.

The models indicate that the corporate capital structure in both countries is similar. Three control variables (growth, liquidity, and profitability) corroborate the Pecking Order theory, while size, debt, and non-interest tax shields determine the Trade-Off theory. However, interest and non-interest tax shields have low explanatory power or are insignificant as interest-free trade credits are the primary source of debt. Earnings management explains the capital structure (long-term leverage) under the Pecking Order theory. Empirical findings of short-term leverage supported the Debt monitoring hypothesis.

Based on these results and empirical funding rules, we can conclude that both theories are valid in the conditions of Slovak and Czech businesses with stronger support for the Pecking order theory. Profitable companies make less use of the tax benefits associated with the capital choice. Internal resources (retained earnings) and/or short-term trade credits are used to a greater extent. This combination of findings supports the conceptual premise that the capital structure of profitable Czech and Slovak companies follows a modified version of the Pecking order approach similar to Delacoure (2007). The selection of resources is conditioned by «free» in the first place and maturity in the second place, in order: retained earnings, equity, free short-term debt/liabilities (mainly trade credits), short-term bank loans, long-term debt/liabilities (non-interest bearing and bank loans) and market debt. The difference compared to the original modified Pecking order is the emphasis on the role of trade credits in the capital structure. The suppressed role of tax shields is being replaced by earnings management, which focuses on a wider range of profit optimization techniques. Regardless of it, the role of tax shields may be more considerable owing to more extensive funding by interest-bearing debt and/or market debt. The study approach proves that the interconnectedness of capital and corporate tax policy of Slovak and Czech profitable companies is weak. Other forms of profit optimization are more preferred by managers, which reduces the clarity of financial statements and the availability of short-term capital.

It is believed that the study conclusions can improve theoretical knowledge of the capital structure in Czech and Slovak companies. Besides, this approach could be useful in the decision-making of all stakeholders (managers, equity holders, and debt holders/creditors).

Finally, several potential weak points of the study need to be considered. First, the non-interest tax shield was examined based on depreciation, making the indicator insignificant. Second, the choice of the proxy for earnings management was conservative and could overestimate the occurrence of profit



manipulation. Leasing as the off-balance sheet item was not taken into account. Last but not least, this study focused only on Czech and Slovak companies.

These shortcomings provide some insights for further research. Titman and Wessels (1988) or Schallheim and Wells (2006) more comprehensive proxies for the non-interest tax shield could be used. Likewise, other earnings management models such as Kasznik (1999), Margin model by Peasnell et al. (2000), or DeAngelo (1986) may be a more suitable alternative to the approach used. Last but not least, the study could be extended to other developing countries than other Visegrad countries (Poland and Hungary) and for a longer period.

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**Люсія Міхалкова**, Жилінський університет, Словаччина

**Войтех Стехель**, Техніко-економічний університет в Чеській Будейовиці, Чехія

**Ельвіра Ніка**, Центр людських ресурсів та економіки праці AAER, США; Бухарестський університет економічних досліджень, Румунія

**Павол Дурана**, Жилінський університет, Словаччина

**Корпоративний менеджмент: структуризація капіталу та податкові щити**

У практиці корпоративного управління оподатковуваним прибутком застосовуються методи структуризації капіталу та податкових щитів з метою зменшення податкових платежів, максимізації ринкової та акціонерної вартості компаній, незалежно від котирування їх акцій на фондовій біржі. У рамках даного дослідження проаналізовано взаємозв'язок між податковим щитом, структурою капіталу та ефективністю управління прибутками. Визначено ефективну модель структуризації капіталу для оптимізації податкових та неподаткових надходжень у досліджуваних країнах. Емпіричне дослідження проведено на основі панельних даних, сформованих для вибірки з більш ніж 5000 нефінансових компаній у Словаччині та Чехії за 2014-2017 роки. Практичну реалізацію дослідження здійснено з використання трьох варіантів коефіцієнта кредитного важеля (загальний, короткостроковий та довгостроковий). У роботі досліджено податкові щити за рівнем фактичної ставки податку, за умови маніпулювання прибутками за дискреційними нарахуваннями на основі аналізу корпоративних на національних показників (ВВП та інфляція). За результатами негативної залежності між рівнем прибутку та кредитним важелем, встановлено, що компанії слідують модифікованій теорії ієрархії для країн, з перехідною економікою. Прибуткові компанії Чехії та Словаччини використовують податкові та неподаткові пільги в незначній мірі. При цьому широке застосування отримали методи маніпулювання, що не пов'язані із податками на прибуток (управління прибутками). Як правило, компанії, які мають заборгованість, можуть підвищувати бухгалтерський прибуток для полегшення боргової ситуації. При цьому маніпуляції з бухгалтерським прибутком негативно впливають на короткостроковий борг, оскільки значна заборгованість посилює вимоги до якості бухгалтерського прибутку позичальника. Авторами наголошено, що розроблений підхід може бути використаним при прийнятті рішень усіма зацікавленими сторонами (менеджерами, власниками акцій та власниками боргів/кредиторами) компанії.

**Ключові слова:** структуризація капіталу, податковий вплив, надходження, модифікована теорія ієрархії, перехідна економіка.