Impact of Selected Determinants on the Choice of Sources of Financing in the Energy Companies of the Visegrád Group

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Abstract
Decision-making about capital structure is one of the basic decisions in each company, and therefore its analysis is the subject of this article. The importance of this theme corresponds to countless literature. This article aims to assess the impact of four determinants, selected by a review of earlier studies, on the choice of funding sources. The examined sample contains the energy companies of the Visegrád Group during the period 2009–2017. The data was obtained from Orbis and Eurostat database. The main research methods are correlation analyses and Generalized Method of Moments that are performed using EViews. The debt-equity ratio is used as the dependent variable. The independent variables are the growth rate of GDP, profitability, asset structure, and liquidity. For all countries, the influence of profitability on indebtedness was found. For Hungary, this relationship was negative, for remaining countries positive.

Keywords: capital structure, profitability, asset structure, liquidity, GDP.

Introduction
Since the beginning of the last century, the analysis of capital structure has become the part of many studies. This concept has become so important that discussions and analysis are still ongoing today, and new models are being developed with many other determinants trying to explain the companies’ decision to finance their activities by certain resources. The work “The Cost of Capital, Corporation Finance and Theory of Investment” (1958), which was written by Modigliani and Miller, is considered to be the basis of modern theories. Since then, two basic theories have arisen, which are subsequently developed. Brealey et al. (2011) and their trade-off theory seek optimal capital structure with the help of a balance between the cost of financial distress and tax shield.

On the contrary, Myers (1984) and his pecking order theory stand on the premise that companies prefer to use their sources of funding. From the outset, the study concerned with large companies in developed countries (Toy et al., 1974; Shleifer and Vishny, 1992; Rajan and Zingales, 1995; Wald, 1999; Antoniou et al., 2002; Anderson, 2002; Gaud et al., 2003). But over time, the studies have begun to be dedicated to all enterprises, regardless of size and nationality (Bokpin, 2009; Handoo and Sharma, 2014; Yinusa et al., 2017).

Literature overview
Some in-house and external determinants influence companies’ decision whether to fund their business by equity or debt sources. Because of the inclusion of both groups of determinants, the impact of the main and most widely used factors – profitability, asset structure, liquidity, and macroeconomic development – is being examined. Therefore, it is worth to mention the studies that deal with these determinants. Knowledge of V4 countries is important since in some cases individual countries have different relationships than other countries.

Expectations concerning profitability differ according to the two main theories mentioned above. Trade-off theory considers the cost of financial distress, among other things (Brealey et al., 2011). Companies that generate more profits should have less risk of bankruptcy, which should reduce the cost of financial distress. As a result, creditors should
be willing to provide the necessary capital, and the debt should therefore increase. On the contrary, the pecking order theory believes in the preference of equity funding, such as retained earnings (Myers and Majluf, 1984; Titman et al., 1988; Rajan and Zingales, 1995). If profitability increases, a retained profit may grow, which will be used rather than debt resources, and thus the debt will fall.

Authors including, among others, the V4 countries, such as Hernádi and Ormos (2010, 2012), Hanousek and Shamshur (2011) for listed companies, Jõeveer (2012) and Mateev et al. (2012) have come to the same conclusions as authors who do not deal with these countries (e.g. Wald, 1999; Bokpin, 2009; Öztekin, 2015) and therefore that profitability has a negative relationship with debt. One of the exceptions is Klapper et al. (2002), who, in the survey of nearly 100,000 Central and Eastern European enterprises, found a positive relationship for total indebtedness.

In the case of individual countries, some contradictions can be seen in Table 1. The results from the Czech and Hungarian environment depend on whether the study deals with a certain sector or not. If enterprises are in the same industry, profitability has a positive link with debt; if businesses are heterogeneous, authors are experiencing more negative (more common) link. As far as Slovak enterprises are concerned, they are completely independent of the sector. Almost the same independence exists for companies in Poland, apart from construction, in which Růčková (2015a) found a positive link.

| Literature reference for profitability in V4 countries |
|------------------------------------------------------|
| **Czech Republic** | **Hungary** | **Poland** | **Slovakia** |
| Nivorozhkin (2002) | + | - |
| Bauer (2004) | + | - |
| Weiß (2004) | - | - |
| Nivorozhkin (2005) | - | - |
| De Haas and Peeters (2006) | - | - |
| Delcoure (2007) | - | - |
| Pinková (2012) | + | - |
| Prášilová (2012) | - | - |
| Aulová and Hlavsa (2013) | + | - |
| Mokhova a Zinecker (2013) | - | - |
| Prędkiewicz and Prędkiewicz (2015) | - | - |
| Růčková (2015a) | + | + | - |
| Růčková (2015b) | + | + | - |
| Růčková (2017) | + | + | - |

*Source: created by the author.*

Liquidity can have an unambiguous impact on the capital structure. The positive relationship between liquidity and debt is often explained by the fact that highly liquid assets help companies survive unfavourable economic development. Shleifer and Vishny (1992) claim that in the case of business difficulties it will be very difficult and to sell illiquid assets. To avoid costly liquidation associated with these assets, companies will be less able to obtain these assets for debt. Liquid assets, on the other hand, reduce liquidation costs and costs of financial distress as they can be sold almost always (though with a loss). Another supporter of this relationship is, for example, Williamson (1988), who stated that highly re-deployable assets are financed with debt, hardly re-deployable assets are financed with equity. The reason is that debt financing is less costly for these assets.

On the contrary, for example, Morellec (2001) and Myers and Rajan (1998) assume a negative relationship. Given the potential for conflict between managers and investors, it is important whether managers can freely dispose of corporate assets. If they could dispose of their assets at their discretion, they could reduce the value of the business by successive sales and thus expropriate investors, thereby diminishing the debt. More liquid assets mean less debt.

Unfortunately, liquidity is often statistically insignificant in models, and therefore there is not a large number of studies involving it. Pinková (2012), Aulová and Hlavsa (2013) in the Czech Republic and Růčková (2015b) in Poland and Slovakia confirm the negative link. However, Růčková (2015b) found a positive link in the Czech Republic.

Another determinant used is tangibility, which is usually expected to have a positive effect.
on debt. However, it depends on the orientation of the financial system. Research of Antoniou et al. (2002) and Acedo-Ramirez and Ruiz-Cabestre (2014) examined United Kingdom companies representing orientation on financial markets and countries representing banking-oriented financial systems (France, Germany, Italy, and Spain). Both studies have come to the same conclusion—a negative relationship in the UK, positive for the rest of the countries. The explanation is simple: tangible assets serve as collateral, and therefore more of these assets mean more willingness of lenders to lend. Other explanations are offered by Stulz and Johnson (1985), Titman and Wessels (1988), and many others using intangible assets that are difficult to sell without the need to sell the entire company.

Overall, more positive-linked studies predominate, such as Delcoure (2007) for the Czech Republic, Poland and Slovakia, Nivorozhkin (2005) for the Czech Republic, Hernádi and Ormos (2010, 2012), Pinková for the Czech Republic, Mokhova and Zinecker (2013) for the Czech and Slovak Republic and Růčkova (2015a) for Hungary. Examples of negative influence are provided by Klapper et al. (2002), Novorozhkin (2002) and De Haas and Peeters (2006) for Hungary, Weill (2004) for the Czech Republic and Poland, Jõeveer (2012), Aulová and Hlavsa (2013) for Slovakia. The reason for this conflict is the choice of companies, respectively industry and size, included in the studies. Inventories-intensive industries (construction, agriculture) and small businesses have the same effect as intangible assets, and therefore a negative link has been found.

The last variable in our model is macroeconomic development, which significantly affects the behaviour of companies. During expansion, businesses are growing, their profits are growing, and their mortality is decreasing. Also, there is an optimistic mood in the company, and the overall risks appear to be low, so lenders are willing to borrow, and debt is usually rising. In a recession, the situation is the opposite, so access to credit is problematic, and debt is falling. It has to be said that in expansion only the growth of debt is not necessary. With profit growth, companies may rather use this source of funding, and debt may decline. As in the case of liquidity, the economic development factor has an ambiguous and often statistically insignificant impact such as Sett and Sarkhel (2010) in India, Mokhova and Zinecker (2014) including V4 countries, Mursalim and Kusuma (2017) in Thailand. But Yinusa et al. (2017) for total debt of Nigeria, Cheng and Shiu (2006) in a sample of 45 countries, Bastos et al. (2009) in Latin America, Bokpin (2009) for 34 emerging markets, and Mursalim and Kusuma (2017) in Indonesia confirm a negative impact of GDP on debt.

On the other hand, Mursalim and Kusuma (2017) in Malaysia, Çekrezi (2013) in Albania, Saledi and Manesh (2012) in Iran have found a positive impact of GDP. As for the Visegrád group, Hanousek and Shamshur (2011) revealed a negative link when companies did not divide into listed and unlisted. After distribution, listed companies showed a negative bond (as in the Jõeveer’s study (2012)), unlisted companies showed positive bond.

Research methodology

In total, the sample contains 2,820 energy companies during the period 2009–2017. The energy sector has been selected as it affects all other sectors of the economy through energy prices. At the same time, the sector itself is influenced by many factors, such as prices of energy raw materials, legislation, the influence of the European Union, etc. Last but not least, energy is one of the priorities under the cooperation of the Visegrád Group.

Financial statements in the Orbis database served as a data source for analysis. Figure 1 shows the division of companies by subsectors of the energy sector. It is clear that in all countries dominate companies dealing with electricity. The largest representation is in the Czech Republic, around 80%. In the case of three other countries, companies dealing with steam and air conditioning also have a significant presence.

![Fig. 1. Shares of subsectors](source: author’s calculations based on data from the Orbis database)
The article aims to reveal the influence of selected factors on the capital structure of energy companies in the Visegrád Group countries. Based on a review of the earlier studies mentioned above, the following hypotheses are expected:

- H₁: There is a positive relationship between profitability and indebtedness.
- H₂: There is a negative relationship between liquidity and indebtedness.
- H₃: There is a positive relationship between asset structure and indebtedness.
- H₄: There is a positive relationship between GDP growth and debt.

**Variables**

The dependent variable in the model is the total debt of the company, expressed by the debt-equity ratio (DER). This ratio is defined as the proportion of total liabilities and equity. Independent variables are four selected determinants that affect the capital structure. Profitability is expressed by return on equity (ROE), which is a share of net profit and equity. Several different proportions can describe the structure of assets (SA), here the proportion of fixed assets and total assets is used. Liquidity (L₂) is represented by the quick asset ratio, which is current assets without inventories divided by short-term liabilities. The last variable is macroeconomic development, which is most often in the form of GDP growth (here at market prices).

**Methodology**

There are several methods to assess inter-dependence. Considering the number of companies, panel regression is the most common method. Nevertheless, the problem of simple panel regression occurs in a short time series. For this reason, Arellano and Bond (1991) propose a two-stage system Generalized Method of Moments (GMM) that eliminates the shortcomings of simple regression. This system may not contain strict exogenous variables, checks the error correlation, and contains a lagged value of the dependent variable. For GMM, we must verify that the model is robust. Several tests can be used, such as the Sargan test. The model can be considered robust if the values are higher than 0.05.

The specific model is estimated as follows:

\[
DER_{it} = \alpha_0 + \beta_1 \cdot DER_{it-1} + \beta_2 \cdot ROE_{it} + \beta_3 \cdot SA_{it} + \beta_4 \cdot GDP_{it} + \beta_5 \cdot L2_{it} + \varepsilon_{it}
\] (1)

The second method used is the correlation, which is usually expressed using the following equation:

\[
\rho_{XY} = \frac{cov(X,Y)}{\sigma_X \sigma_Y}
\] (2)

The resulting correlation coefficient ranges from -1 to 1. If the value is close to -1, the resulting dependency is negative; proximity 1 indicates positive dependence.

**Analysis of variable dependencies**

Because of the missing data, some of the analyzes in the next chapter leave the year 2017 for the results to not significantly divert.

At the beginning, it is appropriate to examine the allocation of funding sources in each country. In Figure 2, we can see that the only country that exceeds the value of 1 for the debt-equity ratio is the Czech Republic. The reason for this is that the Czech Republic is one of the examined countries, where debt financing accounts for an average of 53 %. For the remaining countries, it is 48 % in Hungary, 40 % in Poland and 44 % in Slovakia. Figure 3 shows the composition of total liabilities, which shows the predominance of long-term liabilities in all countries except Hungary, where the average is only 24 %.

On the contrary, the largest share (64 %) is held by Slovak companies. Hungary’s short-term liabilities are dominated by other short-term liabilities, which also include advances in energy sales received from final customers. These are a very good source of funding. On this basis, it could be assumed that in the Hungarian energy sector, distributors predominate over producers.
Each country economically behaved differently and is, to varying degrees, dependent on natural resources, so it is necessary to analyze them individually. The Czech energy sector is dominated by electricity, which is influenced by three things. Most sectors are dependent on the development of the economic situation or GDP, especially in the energy sector, which counts among the cyclical sectors. In the Czech Republic, the global crisis in 2009 caused a decrease in demand for electricity. In the next two years, demand grew with the growth of the economy that recovered from the crisis. In 2012 and 2013, unfortunately, the economic crisis has returned due to a decline in household consumption and investments. The only year that was not linked to the economic cycle was 2014 when demand for electricity reached values like in the year 2009. These values were due to energy savings, but especially to very warm weather. In the following years, electricity demand has evolved in the same way as GDP. The Czech Republic is an industrialized country, and it is, therefore, necessary to take into account the situation of wholesale customers. In the case of the Czech Republic, the correlation coefficient of the demand for electricity for wholesale customers and total demand reached a value of 0.85. This value indicates a very strong dependence on industry development. The last impact on the Czech energy sector is the price development of coal, oil and emission allowances. As far as the electricity price is concerned, it has fallen steadily from 2008 to 2015 and reached the 20-year minimum. For the past two years, the price has been rising again. When looking at individual commodities, the price of coal fell during the period 2011–2016. Similarly, the price of oil fell in 2013 and 2014. Both commodities suffer for new technologies (e.g. shale gas and oil), environmental standards, weakening of major exporters’ currencies, the surplus supply of oil and China’s influence on coal. The emission allowances are linked to environmental, and their price has also dropped considerably over the last eight years due to the situation in Europe.

A different situation took place in Hungary, which was hit hard by the economic crisis in 2009, as can be seen in Figure 4, which shows GDP...
development in the V4 countries. The situation even asked for loans from the IMF due to bad state management and associated high debt and high export focus of the economy. The crisis also hit ordinary citizens and firms, as they often had mortgages in currencies other than forint. After major reforms and the new government, the economy started to grow. However, in 2012 again a slight decline occurred due to decreasing domestic demand and disposable income of the population. Also, the industry has failed – investments have fallen, and agriculture has suffered losses as a result of unfavourable weather. Since 2013, there has been solid growth. Suggestions were, for example, money from European funds and growth in domestic consumption. At the same time, the construction sector finally started to grow again. The structure of the Hungarian energy sector varies considerably from the Czech Republic. Subsectors represent the first major difference. Almost the same share (around 40 %) is electricity and steam and air conditioning. Electricity demand grew slightly over the entire period, on the contrary, its price increased until 2011 and then declined. A similar trend can be expected in the second subsector. Commodities required for the energy sector are mainly uranium and natural gas. However, not only commodities but also construction and residential and commercial customers are important, because these two factors affect the steam and air conditioning subsector. It should be remembered that, in the case of the Hungarian energy companies, 76 % of the liabilities are made up of short-term sources. The uranium price has fallen by nearly two-thirds since 2010. By contrast, the gas price has varied. By 2011, it was around 9 EUR/GJ, then jumped to almost 14 euros and fell again to 10 euros from year to year.

The economic development of Poland is very different from the rest of the countries. Poland did not suffer bigger losses as a result of the global and debt crisis in Europe. The basic difference is the size of the economy – Poland has almost four times more population than the Czech Republic. Of course, the flow of more money from the European Union is connected with size. At the same time in 2012, Poland participated in the organization of the European Football Championship, which greatly helped economic growth. Also, Poland is a relatively closed economy with a large internal market. The energy sector accounts for 63 % of electricity and 34 % of steam and air conditioning. However, given that the second subsector is heavily dependent on the economic situation, it is only necessary to analyze the determinants of the electricity sector. The demand for electricity has grown throughout the whole period under review. For the electricity price, the data only date back to 2014, from which the price of electricity has fallen to 2017. But Poland’s energy sector is similar to the Czech Republic, and so similar price developments can be expected due to the fall in coal prices (main fuel) and oil prices.

The world crisis in 2009 also hits Slovakia. However, due to the fixation of the Slovak koruna exchange rate to the euro at that time (Slovakia joined the European Union in 2009) and the insignificant stock market, the impact of the crisis was smaller. The fall in GDP was due to declining demand from abroad. Also, the structure of the industry has contributed to a decline, as long-term consumer products, particularly automobiles dominate it. Nevertheless, the fall was only in 2009, after which GDP has never reached negative figures. A smaller slowdown occurred in 2013, behind which declined domestic demand as a result of unemployment and government policy to reduce debt. The decline in
domestic demand also caused a moderate slowdown in 2016. The structure of the energy sector is similar to the three previous countries. Electricity (56 %) is slightly more prevalent over steam and air conditioning (42 %). The demand for electricity until 2014 was more or less the same. Over the last three years, demand has grown considerably. By contrast, electricity prices have fallen sharply during the period 2008–2016. Commodities necessary for the Slovak energy sector are natural gas, uranium, and oil. Their development was outlined in the paragraphs above.

**Results of correlation analyses**

Figure 5 shows the correlation for debt-equity ratio and ROE, as only one of these dependencies is statistically significant for all countries. Slovakia, Poland, and the Czech Republic have a positive correlation coefficient, thus provide strong support for H₁ regarding the relationship between profitability and indebtedness. A particularly strong dependence (correlation coefficient of 0.97) was found in the case of the Czech Republic. The only negative dependence, and again very strong (correlation coefficient of -0.9), is in Hungary. Unfortunately, this result is inconsistent with H₁. Other correlations were also carried out, but only one statistically significant dependence was demonstrated in the Czech Republic for the combination of DER and asset structure. In this case, the positive relationship between variables with a correlation coefficient of 0.025 was detected.

![Fig. 5. Correlation coefficients of DER with ROE](source: author’s calculations based on data from the Orbis database)

**Results of GMM**

In Table 2 we can see the panel regression results using the GMM model. Importantly, all four models can be considered robust, given that Sargan’s test has met the assumption and its values have exceeded the value of 0.05. It should be noted that the model for Slovakia does not contain a variable for GDP, as the time series was non-stationary.

For all examined countries, there is statistically significant profitability. The discovered links confirmed the results of the correlation, particularly the positive impact on indebtedness in the Czech Republic, Poland and Slovakia; a negative impact in Hungary, in which companies prefer to use their resources during increasing profitability. This assertion also verifies the resulting GDP effect, which is also negative. Hungarian energy companies are therefore using their resources as a result of growth in economic growth.

In the case of Hungary, the structure of assets is also significant, with a positive effect as expected. Hungarian companies own about 60 % of tangible assets that can be used as collateral.

|          | DER(-1) | ROE   | L2    | SA    | GDP  | J-stat. |
|----------|---------|-------|-------|-------|------|---------|
| **CZ**   | 0.0101* | 18.1178* | 0.0327* | -8.1439 | 68.3819 | 19.9604 |
| **HU**   | 0.0042* | -6.6850* | -0.1131 | 43.4755* | -325.3639* | 27.2183 |
| **PL**   | -0.0191* | 21.5221* | -0.1425 | 27.0178 | 4.9302 | 26.0743 |
| **SL**   | -0.0051* | 17.8983* | -0.0317* | 6.4982 | 34.4988 | |

Source: author’s calculations
Symbols * indicate significance at 1 %, 5 % or 10 %.  

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Liquidity was statistically significant only for the Czech Republic and Slovakia. The variable has little effect on debt. For Slovak companies, the original assumption of negative influence confirmed as claimed Morellec (2001) and Myers and Rajan (1998). On the contrary, Czech companies show a positive relationship between liquidity and debt and confirm the conclusions of Shleifer and Vishny (1992) and Williamson (1988).

The GMM model also includes a lagged dependent variable that indicates the minimum impact of past debt on future debt.

As for the hypotheses, H1 can be accepted for the Czech Republic, Slovakia, and Poland. The H1 with a high coefficient has supported in our model for Hungarian companies. Unfortunately, in the same country, we must reject the H3. The H2 found support in Slovakia and resistance in the Czech Republic. Moreover, the resulting coefficients are low, and it is not possible to disprove or accept the given hypothesis.

Conclusion

This article analyzed the capital structure and its determinants. The energy sector of the Visegrád Group was investigated. These companies were chosen because the energy sector is a major engineer of the state’s economy that affects not only households but also companies most often through prices of electricity, heat, and gas.

The selected determinants were profitability, liquidity, asset structure, economic development, and thus represented the internal and external business environment. The objective was to determine the effect of these factors on the total debt of companies for the period 2009–2017. In total, 2,820 enterprises were tested.

To investigate mutual dependence, two methods were used – correlation analysis and GMM method. Based on the research of previous studies, the positive impact of profitability, GDP, asset structure and negative liquidity impact was projected. The results of both analyses revealed the significance of profitability in all examined countries. The assumption of a positive link was not only met in Hungary. At the same time, in a panel regression, this country showed a negative connection with GDP growth, confirming the claim that companies prefer own resources concerning growth in profitability and the economy. The indication of this link can be seen in the analysis of sources of financing which showed the smallest proportion of debt financing in Hungary – only 40%. The result is not surprising given the development in Hungary during the reporting period. The cause was the financial crisis in 2009, which had a strong influence on the development of investments in future years, and the composition of total liabilities that dominated short-term liabilities. For the remaining countries, the economy evolved better. Most of this can be seen in Poland, which also has the highest coefficient for rentability, as this country has not experienced a decline in GDP over the whole period under review.

Further, the regression in Hungary again revealed the positive impact of asset structure on debt. With this variable, no other link is ever expected, so the assumption has been fulfilled. At the same time, the impact of liquidity in the Czech Republic and Slovakia was established, which fulfilled the original assumption of the existence of a negative impact. In the case of the Czech Republic, the impact was positive. However, the resulting coefficients were very small.

The GMM method included a lagged value of the debt-equity ratio. Their coefficients are statistically significant, but the value of coefficients indicate very little effect of past debt on future debt.

The research proceeded from four hypotheses that had to be tested. After summarizing the mentioned above results, only the H1 dealing with the relationship between profitability and indebtedness can be accepted, as the assumed relationship – positive – has been confirmed in three of the four examined countries.

Further research could consider dividing companies by size and adding additional determinants.

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Summary

For decades, the capital structure research has developed. From the beginning, complete theories emerged from which the next one developed. Over time, the number of theories has stabilized and, on the other hand, other determinants influencing the choice of sources of funding have been sought. A lot of these studies were devoted to large and often listed companies. However, in recent years, the authors have no longer confined to exploring diverse companies and countries.

This article analyzes energy companies in the Visegrád Group during the period 2009–2017. The development of the energy sector is heavily dependent on the development of commodity prices and the development of the economy related to the development of the industry. As regards the development of the economy, the global financial crisis took place at the beginning of the examined period. Smaller deceleration, or recession, occurred in 2012/2013 in the Czech Republic, Hungary, and Slovakia. The development of the economy is also reflected in an industry that includes wholesale customers, and therefore greatly influences the whole sector. There is no unusual use of short-term sources of funding in this sector, which includes, among other things, advances from final customers. Also, commodity prices – crude oil, coal, natural gas, uranium – have fallen for a considerable part of the period.

The research aims to determine whether four selected determinants influence the capital structure of selected companies. The specific factors are profitability, liquidity, asset structure, and economic development, and these hypotheses are expected, based on a review of earlier studies: the positive relationship between profitability and total debt; the negative relationship between liquidity and total debt; the positive relationship between asset structure and total debt; the positive relationship between economic development and total debt.

The author verifies the dependence of variables by correlation analysis and panel regression using the Generalized Method of Moments. For the validity of panel regression, a robustness test – Sargan test – must be performed. The dependent variable in the model is the total debt expressed by the debt-equity ratio. The independent variables representing determinants have this form: return on equity, quick asset ratio, share of fixed assets, and GDP growth.

As far as analyses are concerned, the results of the correlation analysis unambiguously point to the existence of a correlation between profitability and debt. For Slovakia, Poland, and the Czech Republic, the correlation coefficients are positive; only Hungary has a negative coefficient. In the case of Hungarian and Czech companies, very strong links with coefficients above 0.9 (or -0.9) are found. Furthermore, the possible link between asset structure and debt in the Czech Republic is also revealed. However, the coefficient is very small, and this relationship is not confirmed by panel regression.

Robustness tests for all four-panel regressions meet the basic assumption and can be considered credible.
For all countries, the results of the correlation analysis on profitability and debt are confirmed. In the Czech Republic, Poland and Slovakia, there is a positive link, which means that when profit growth grows, companies can look more creditworthy and lenders are willing to borrow more. The highest coefficient has Poland, which, as the only country in the Visegrád Group, did not suffer from a crisis or recession due to its size of the market and some degree of closeness. Moreover, a football championship took place in Poland in 2012, which helped the economy grow further.

Hungarian companies behave differently. Growing profits are used to fund their activities, which leads to decreasing their indebtedness. This statement is also suggested by the statistically significant negative impact of GDP growth on the total debt of Hungarian companies. This relationship shows that if the economy is in a boom, debt should decline, e.g. due to rising profits that can serve as a source of funding. Or, on the other hand, in a recession, debt should grow (despite the difficult access to loans). In the case of Hungary, this makes sense because the impact of the crisis in 2009 was really strong. Both households and companies lent in foreign currencies before the crisis, which thanks to the weakening forint during the crisis greatly increased the debt.

Hungary, last but not least, has a positive link between the asset structure and debt. Of the total assets, energy companies have an average of 60 % in the form of tangible assets that serve as collateral and help to obtain additional loans.

In the Czech and Slovak Republics there is a significant, but very small influence of liquidity, but for the Czech Republic the impact is positive, for Slovakia negative. The GMM model contains a lagged value of the dependent variable that is significant. However, the coefficients are very small, and there is a minimal effect of past debt on future indebtedness.

The unambiguous conclusion of the research is the statistically significant dependence of the debt on profitability. In the case of the Czech Republic, Slovakia, Poland, this dependence is positive – debt increases with increasing profitability. In Hungary, this dependence is negative – with the growth of profitability, debt is falling.

**Keywords:** capital structure, profitability, asset structure, liquidity, GDP.