THE AGRICULTURAL COMPANIES AND THEIR VALUE SPREAD WITHIN THE VISEGRAD GROUP[1]

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Key words: agricultural company, costs of equity, net income, returns on equity, value spread
Słowa kluczowe: przedsiębiorstwo rolnicze, koszt kapitału własnego, dochód netto, stopa zwrotu z kapitału własnego, wartość spread

A b s t r a c t. This paper provides unique comparisons of agricultural companies from the Visegrad Group countries using the value spread indicator. Companies in these countries have similar geographical conditions and they experienced relatively similar historical development. Nevertheless, the agricultural sector in each of these countries is different to some extent. The value spread indicator provides information about whether the costs of a company's equity are covered by the returns on that equity. Moreover, this indicator serves as a verifier of the income valuation framework. The aim of this paper is to explore the value spread of agricultural companies in the countries of the Visegrad group both from country and primary activity perspectives. This paper finds that only a part of the companies sampled is able to create the income value and cover its costs from the returns on equity. Based on empirical tests, it was shown that there is a slightly positive dependence between the value spread and the country of origin of the agricultural company and between the value spread and the primary agricultural activity. Poland is the country with the majority of companies with a positive value spread and the most successful parts of agriculture are support and non-traditional activities.

INTRODUCTION

A large body of literature explores the magnitude of company valuation by various methods based on the net present value principle [Damodaran 2007, Koller et al. 2010, Plenborg 2002]. Despite the broad use of income valuation methods, their applicability is closely connected with the company's future perspective, the so-called going concern principle. If it cannot be assumed that a company will remain viable and active in the future, the income valuation methods are not applicable. The overall process of company valuation via the income valuation methods is rather complex and extensive including various sub-calculations. Therefore, it might be useful

[1] Acknowledgements. The author gratefully acknowledges the comments and suggestions made by Keith Willett, Professor of Economics, at Oklahoma State University. This paper was prepared with the support of the international project *Human Resource Development - Science Education & Research in Faculty of Business and Economics in Mendelu Brno (2011-2014, MSM/EE)*", nr. EE2.3.20.0006, project is co-financed by the European Union.
Paper was presented at the 19th Congress of the International Farm Management Association (IFMA), Warsaw (Poland), 21-26 July 2013.

to know in advance, whether the income method requirements are met and thus the method is applicable for a specific company (valuation object). These requirements are:
– the going concern principle, as mentioned above,
– the continuous competitiveness of a company,
– the growth potential of the industry and
– the ability of a company to meet its liabilities in due time [Mařík 2007].

The going concern principle is met if a positive cash flow can be expected in the long term. There is the possibility to examine the fulfilment of some of these requirements via the so-called value spread [Cassia, Vismara 2009, Mařík 2007]. The value spread is the difference between return on equity and costs of equity and serves as a basis for an economic value added (EVA) calculation, or in other words for economic-profit-based valuation models [Dluhošová 2004, Koller et al. 2010]:

$$EVA = (ROE - r_e)E \tag{1}$$

where EVA is the economic value added, ROE is the return on equity, r_e is the costs of equity and E is the equity. Besides, the value spread can be also found within the model of residual income (RI) valuation, also known as the Edwards-Bell-Ohlson (EBO) model. The empirical usefulness of the residual income valuation model (RIVM) was discovered for example by Lee et al. [1999, cited in Mishra, O'Brien 2005[, or by Skogsvik [2002], Bild et al. [2002], Landsman et al. [2006], Stubelj et al. [2009], and Elsner et al. [2012], however, Plenborg [2002] expresses the RI approach in terms of financial ratios, as:

$$P_0 = BV_0 + \sum_{t-1}^{\infty} \frac{(ROE_t - r_e)\, BV_{t-1}}{(1 - r_e)^t} \tag{2}$$

where P is the firm value, BV the book value of equity, ROE the return on equity, and r_e the cost of capital (equity holder). The RI is defined as the difference between ROE and r_e, known as the value spread, multiplied by the BV [Plenborg 2002].

Therefore, the value spread is not only a direct verification tool for the applicability of the income valuation methods (both EVA and RI), but also a preliminary indicator of the economic performance of the company. Any value creation in a company is closely related to the relation between the rates of return obtained (ROE) and expected (r_e) [Mařík 2007].

In comparison with the individual profitability ratios, which do not measure the company's success nor reflect the factor of risk, the ROE indicator when compared to the opportunity costs, it provides information about a company's overall financial situation. The success or failure can be easily identified based on the size of the value spread: by how many per cent is the return on equity higher/lower than the costs of equity. In order to provide the information in monetary units, the difference can be multiplied by the equity. The multiplication of the value spread by the shareholders' equity represents the economic profit generated within the year by the company [Neumaierová 2005]. The limitation of this spread lies in its historical nature, since it measures only historical parameters and cannot provide a predictive perspective.

This paper sets out an investigation of whether or not agricultural companies from member countries of the Visegrad group (V4) create value using the value spread between company's return of equity and costs of equity. Finally, the independences of the value spread and country of origin of the agricultural company and between the value spread and

the primary activity are verified via the Chi-square test of independence, and if dependence is detected, the Cramer's V coefficient is then employed. The following hypotheses are tested:

H_1: Creating value according to the value spread indicator does not depend on the **country of origin** of the agricultural company within the observed sample.

H_2: Creating value according to the value spread indicator does not depend on the **primary activity** of the agricultural company within the observed sample.

The objective of this paper is to explore the economic performance of agricultural companies in the countries of the Visegrad group both from the country perspective and from the primary activity perspective. The findings of this paper may be used for the process of company valuation, namely for pre-selection of suitable valuation objects, since the income valuation methods cannot be applied widely. Moreover, the findings may also discover potential differences between the sample companies from the V4 countries both from the country perspective and the primary business activity perspective. These differences can stem from the different political systems, public subsidy policies, climatic zones, or geographical location.

The paper is structured as follows. Firstly, the methods used and data sample are introduced. Secondly, the results and their findings are challenged by the current literature and finally, conclusions based on the main findings are summarized.

METHODOLOGY

The sample used in this paper consists of all active agricultural companies with recent financial data from the V4 member countries (Czech Republic, Poland, Slovakia and Hungary) listed in the Amadeus database of the Bureau van Dijk (Amadeus) in 2010. The Amadeus database contains and provides comprehensive financial information on millions of European companies. The data are standardized and collected by national agencies. For the purposes of this paper, the year 2010 was selected together with 4,004 companies from the agricultural sector (CZ NACE 01, excluding hunting – 01.7), see the Table 1.

For each company the following variables were calculated as follows:

– return on equity (ROE) is calculated as profit (loss) for the period divided by shareholders' equity, expressed as a percentage (i.e. multiplied by 100),
– costs of equity *(r_e)* are estimated via build up model INFA as an heuristic model which determines costs of equity as a sum of risk-free rate and individually estimated risk premiums specific for a particular company [Neumaierová 2005, Kolouchová, Novák 2010].

$$r_e = r_f + RP \tag{3}$$

where r_f is the risk-free rate and RP stands for additional risk and is calculated as:

$$RP = rLA + rPOD + rFINSTAB + rFINSTRU \tag{4}$$

in which all *r*s stand for additional risks associated with company size, business risk, financial stability and financial structure, respectively. Generally, additional risk associated with company size determines the company's equity in the context with stated values and if the equity is higher, there is no additional risk, if lower, then the 5 percentage points are added. Similarly, additional risk associated with business risk compares the return on assets (ROA) with the industry average in the particular country. If the company's ROA is higher than the industry average, no additional risk is added, if lower, then 10 percentage points are added. Analogously, additional risk associated with financial stability monitors

Table 1. List of examined NACE codes and their description

NACE code	Description	NACE code	Description
0110	**Growing of non-perennial crops**	**0140**	**Animal production**
0111	Growing of cereals, leg.crops, oil seeds	0141	Raising of dairy cattle
0113	Growing of vegetables and melons	0142	Raising of other cattle and buffaloes
0119	Growing of other non-perennial crops	0143	Raising of horses and other equines
0120	**Growing of perennial crops**	0145	Raising of sheep and goats
0121	Growing of grapes	0146	Raising of swine/pigs
0124	Growing of pome fruits and stone fruits	0147	Raising of poultry
0125	Growing of other tree and bush fruits	0149	Raising of other animals
0128	Grw.of spices, drug and pharm. crops	**0150**	**Mixed farming**
0129	Growing of other perennial crops	**0160**	**Support activities to agriculture and post-harvest crop activities**
0130	**Plant propagation**	0161	Support activities for crop production
		0162	Support activities for animal prod.
		0163	Post-harvest crop activities
		0164	Seed processing for propagation

Source: own work based on database Amadeus.

the current ratio and the additional risk associated with financial structure monitors the interest cover indicator.

The value spread is calculated as a difference between the return on equity and the costs of equity. If the return is higher than the costs, then new value is created, if the return is lower, then value is destroyed.

$$value\ spread = ROE - r_e \tag{5}$$

The descriptive statistics for each variable, country and also for the entire sample is provided in Table 2.

To verify the value creation of agricultural companies in the each V4 member country, the value spread was calculated for each individual company within the sample.

A Chi-square test of independence was used to investigate the independence between value spread and country of origin of the agricultural company and between value spread and primary agricultural activity. All the variables are categorical: value is/is not created, country of origin of the agricultural company is CZ (Czech Republic), PL (Poland), SK (Slovakia), or HU (Hungary) and crop production (perennial and non-perennial), plant propagation, animal production, mixed farming and support activities, see Table 1. The general Chi-square test of independence framework by Hendl [2009] is used, as provided below:

Table 2. Descriptive statistics for each variable

ROE [%]	CZ	PL	SK	HU	V4 - total
Mean	5.54	13.73	2.38	3.83	6.89
Median	4.02	12.81	0.96	3.94	4.94
Mode	0.45	31.38	0.01	8.42	2.74
Std. deviation	48.32	56.68	69.70	44.36	54.57
Kurtosis	110.31	136.30	91.37	56.87	116.78
Skewness	-4.17	-2.39	-5.26	-2.60	-4.04
Minimum	-860.74	-962.50	-929.83	-490.02	-962.50
Maximum	628.49	816.22	541.92	428.15	816.22
Sample size	1,616	1,064	714	610	4,004
r_e [%]	CZ	PL	SK	HU	V4 - total
Mean	16.92	17.43	21.52	24.70	19.06
Median	12.89	11.85	19.23	22.97	16.81
Mode	8.75	10.99	9.15	42.50	8.75
Std. deviation	9.19	8.87	10.35	9.69	9.84
Kurtosis	-0.72	0.42	-1.11	-1.08	-0.68
Skewness	0.74	1.25	0.30	0.38	0.70
Minimum	6.81	7.22	8.59	12.11	6.81
Maximum	38.75	40.99	39.15	42.50	42.50
Sample size	1,616	1,064	714	610	4,004

Source: own work based on database Amadeus.

$$x^2 = \sum \frac{(observed\ frequency - expected\ frequency)^2}{expected\ frequency} \tag{6}$$

where χ^2 is the Pearson's test statistic which can be compared to a critical value for a given significance level and degrees of freedom. The degrees of freedom (*df*) can be calculated as the number of categories in the table *r x s: (r-1) x (s-1)*. The tables are called contingency tables. If the test statistic is higher than the critical value, the hypothesis is rejected. In the case where the hypothesis is rejected, the dependence is further examined by other coefficients, for example by the Cramer's V coefficient.

$$V = \sqrt{\frac{x^2}{n\,(m-1)}} \tag{7}$$

in which *V* is Cramer's V coefficient, *n* the total number of cases and *m* is the lower number for total rows or columns. The Cramer's V coefficient is within the range of 0, 1; when the coefficient is equal to zero, there is no dependence; if the coefficient is 1, there is a strong relation between selected variables.

The independence test is given at the 5% level of significance (P value = 0.05). All the statistics of this paper are conducted using the IBM SPSS software.

RESULTS AND DISCUSSION

VALUE SPREAD VS. COUNTRY OF ORIGIN

Firstly, the independence between the indicator value spread and the country of origin of the agricultural company is tested. The contingency Table 3 is provided for the value spread and country of origin overview. Each row presents the absolute and also relative frequency of companies firstly with positive and secondly with negative value spread according to the company's country of origin, for example, in the CZ there are only 483 companies from the CZ sample, i.e. 29.9% of CZ companies, having positive value spread and 1,133 companies, i.e. 70.1% having negative value spread. At the end of each row, the total absolute or relative frequency is shown, for example, in the CZ, there are 1,616 companies, i.e. 100% of the CZ sample. Analogously, each column provides the absolute and relative frequency of companies according to the positive/negative value spread in each country and at the end, the total absolute or relative frequency for the value spread is shown, for example, in the CZ, there are 483 companies creating a positive value spread, i.e. 29.9%, whereas in Hungary, there are only 104 companies reporting a positive value spread (17% only).

Table 3. Country and value spread in crosstabulation (all NACE codes)

Country ISO Code	Absolute frequency value spread			Relative frequency value spread [%]		
	positive	negative	total	positive	negative	total
CZ	483	1,133	1,616	29.9	70.1	100.0
PL	532	532	1,064	50.0	50.0	100.0
SK	139	575	714	19.5	80.5	100.0
HU	104	506	610	17.0	83.0	100.0
Total	1,258	2,746	4,004	31.4	68.6	100.0

Source: own study.

Table 4. Chi-Square Test (VS and country of origin) and symmetric measures

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	278.028	3	.000
Likelihood Ratio	276.937	3	.000
Symmetric measures			
Phi	.264		.000
Cramer's V	.264		.000
N of Valid Cases	4,004		

Source: own elaboration.

According to the preliminary findings it appears, that while companies creating value for their owners having ROE (obtained returns) higher then r_e (expected returns) are rather rare in Slovakia and Hungary, only 19.5% and 17% , in the Czech Republic and Poland the situation is considerably more optimistic (almost 30% and 50%, respectively). The most optimistic situation appears to be in Poland, where the ratio is 50% of companies creating value. This disproportion can be the result of low return on equity, or the high costs of equity capital. Unfortunately, both these aspects are typical for agricultural companies in general [Kopta, Maršík 2009].

For verification of the relation between the two variables (value spread and country of origin of individual agricultural company) the Chi-square test of independence was employed (Tab. 4). According to the results of the Chi-square independence test the hypothesis about the independence H_1 "Creating value according to the value spread indicator does not depend on the country of origin of the agricultural company within the observed sample" can be rejected at the given significance level.

Therefore, it can be said that creating value depends on the country of origin of the agricultural company: CZ, PL, SK, HU, within the observed sample. Since creating value according to the value spread is not independent of the country of origin of the agricultural company, a symmetric measure (Cramer's V coefficient) was employed. Based on this coefficient, the dependence between the variables is slightly positive.

There are also other differences stemming from the production deviation: crop vs. animal production. In Slovakia, for example, local agricultural companies have to face a decreasing trend in the arable land area, in favour of setting the land aside from the production [Božík 2011]. Moreover, Božík [2011] states that there is a slump in animal production tending towards the complete end of animal production in Slovakia.

In order to deal with these aspects of the agricultural sector, there is a need to enhance the initiatives for horizontal integration of agricultural companies. Wolz, Fritzsch and Pencáková [2006] have shown that the ability of agricultural companies to cooperate horizontally positively influences the net incomes of these companies, especially in terms of collective bargaining for the prices of inputs [Banaszak 2007]. This horizontal cooperation may be in the form of agricultural cooperatives; however, many companies employ strategic alliances in the form of mutual cooperation. These strategic alliances are relationships based on formal agreements between companies willing to agree upon certain objectives, whilst remaining independent companies [Wu et al. 2009]. Since this type of horizontal integration can be considered as a response to the competitive environment [Dickson, Weaver 2011], it is more often advantageous to cooperate when trading internationally within a global field of business [Isoraite 2009], regardless of the industry [Shah, Swaminathan 2008].

VALUE SPREAD VS. PRIMARY ACTIVITY

Secondly, the independence between the indicator value spread and the NACE primary activity is tested. As presented in the table 1, the primary activities were grouped into the six areas and challenged by the value creation represented by the indicator value spread (Tab. 5).

In the first row, there are number of companies with negative value spread for every NACE primary activity. For instance, there are 720 agricultural companies reporting negative value spread within the NACE code 011x and in total there are 2,746 companies

Table 5. Value spread and NACE primary activity in crosstabulation (all V4 countries)

		NACE Primary activity						Total
		011x	012x	013x	014x	015x	016x	
Value spread	negative	720	62	13	607	1,133	211	2,746
	positive	417	21	8	146	550	116	1,258
Total		1,137	83	21	753	1,683	327	4,004

Source: own study.

Table 6. Chi-Square Test (VS and NACE primary activity) and symmetric measures

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.767	5	.000
Likelihood Ratio	75.037	5	.000
Linear-by-Linear Association	5.310	1	.021
Symmetric measures			
Phi	.133		.000
Cramer's V	.133		.000
N of Valid Cases	4,004		

Source: own study.

among all the NACE groups reporting negative value spread in the period analysed. In the second row, analogously, there are a number of companies reporting positive value spread. In the last row, there is the total number of companies operating in each examined sector.

The results of the chi-square test of independence are summarized in the Table 6. According to the results of the Chi-square independence test the hypothesis about the independence H_2 "Creating value according to the value spread indicator does not depend on the country of origin of the agricultural company within the observed sample" can be rejected at the given significance level.

Therefore, it can be concluded that creating/destroying value (value spread approach) depends on the primary activity of the agricultural company: crop production (perennial and non-perennial), plant propagation, animal production, mixed farming and support activities, within the observed sample. Since creating value according to the value spread is not independent of the primary activity of the agricultural company, a symmetric measure (Cramer's V coefficient) was also employed.

Since independence cannot be confirmed, the following Table 7 presents the different economic situations in the V4 countries using the indicator value spread for individual agricultural activity. In the Czech Republic, the most successful agricultural NACE codes, according to the value spread in 2010, were related to post-harvest activities. In contrast, in Poland, the most effective activities were related to growing non-traditional trees, soft fruits or raising alternative livestock. Similarly in Slovakia, the raising of sheep and goats was relatively successful. In Hungary, besides the raising of sheep and goats and other animals, the post-harvest activities are the most economically efficient sub-sectors. The least efficient NACE codes are related to raising dairy cattle or mixed farming in each of the countries examined.

Table 7. Selected NACE codes and the percentage of companies with positive value spread in each V4 countries [%]

NACE code	Note	CZ	PL	SK	HU
0111	cereals, oil seeds	40 !	56 !	27 ✗	19 ✗
0125	other trees, bush fruits	0 ✗	75 ✓	0 ✗	0 ✗
0141	dairy cattle	16 ✗	6 ✗	8 ✗	8 ✗
0145	sheep and goats	0 ✗	0 ✗	75 ✓	100 ✓
0149	other animals	50 !	89 ✓	40 !	100 ✓
0150	mixed farming	26 ✗	59 !	20 ✗	8 ✗
0160	support activities	40 !	0 ✗	0 ✗	0 ✗
0163	post-harvest activities	100 ✓	50 !	50 !	100 ✓

Source: own study.

With respect to the results, criticism of the value spread indicator needs to be provided. In compliance with the literature on agricultural economics, the return ratios are often negative [Kopta, Maršík 2009] and therefore cannot cover the costs of equity which are estimated via INFA method, which uses risk premium for each individual company. This risk premium is rather high, due the specifics of agricultural companies. Moreover, Střeleček, Lososová and Zdeněk [2007] have identified important characteristics of Czech agricultural companies: increasing dependence of public subsidies on net incomes, which can be considered as above-average compared to the EU-15. Moreover, Vavřina et al. [2012] provide evidence that this is the case for all V4 agricultural companies. Based on this fact, it can be inferred that EAT can be partly shielded by these subsidies. Vavřina et al. [2012] also showed that there is an increasing tendency of public subsidy financing in the period 2004-2011.

As far as public subsidies are concerned, any reduction or elimination of this kind of financing would inevitably lead to a slump in the entrepreneurial income in Slovakia [Božík 2011]. Agricultural companies in Poland appear to be most economically efficient, on the other hand, they are beneficiaries of hidden or indirect subsidies which may result in better economic performance (Tab. 3). Therefore, it cannot be directly deduced that polish agricultural companies are more competitive in comparison with the other V4 member countries [Vavřina et al. 2012].

Assuming there are only 31.4% of V4 agricultural companies suitable for the income valuation method, there are 68.6% of companies which need to be valued by alternative approaches. Besides the income valuation approach, there are also market and asset valuation approaches [Koller et al. 2010]. Nevertheless, since the market valuation approach can be applied only within the functional company market, it can be inferred that this approach is rather non-applicable in the Czech Republic [Krabec 2009, Mařík 2007]. Therefore, only the asset valuation approach is relevant. From this perspective, it can be deduced that 68.6% of V4 agricultural companies can be valued only within the scope of deducing the liabilities from the company's assets (the asset approach) without any regard to future prospects. These facts may lead to the conclusion that a majority of V4 agricultural companies do not cover their costs of equity by returns on equity and therefore do not fulfil the requirement of the going-concern principle.

However, since the value spread measure is rather strict, there is an alternative value spread considering return on invested capital (ROIC) instead of ROE and weighted average costs of capital (WACC) instead of r_e [Koller et al. 2010, Mařík 2007, Kislingerová 2001]. This spread may provide more optimistic values since the invested capital is a sum of a company's property, plant, equipment and working capital – cumulative sum of company's investments in the core operations [Koller et al. 2010].

CONCLUSIONS

Overall, the picture that emerges from agricultural companies in the V4 is consistent with the findings of Kopta and Maršík [2009], Banaszak [2007] or Vavřina et al. [2012]. There is confirmation that the value spread is positive only in 31.4% of cases: only 31.4% of the sample report higher returns on equity than the costs of equity capital. This fact may be caused by agricultural specifics, namely by considerable fluctuations in cash flow, low return ratios or high indebtedness which is reflected in the higher cost of equity capital,

as outlined by Střeleček, Lososová and Zdeněk [2007], Banaszak [2007] or Vavřina et al. [2012], partly verified by the examined variables, see Table 2.

For the verification of the relation between the two criteria (value spread and country of origin of the individual agricultural company and value spread and the primary agricultural activity) the Chi-square test of independence was employed to accept or reject the two hypotheses: "Creating/destroying value according to the value spread method does not depend on the country of origin of the agricultural company within the observed sample " and "Creating value according to the value spread indicator does not depend on the primary activity of the agricultural company within the observed sample". On the given significance level, both hypotheses were rejected and an alternative hypothesis can be accepted, that it can be said that creating/destroying value depends on the country of origin of the agricultural company, and primary activity of individual co*mpany* within the observed sample. Based on Cramer's V coefficient, the dependence is slightly positive (Tab. 4 and 6).

In other words, it can be assumed that the differences among individual agricultural companies in the V4 countries are statistically significant. Moreover, there are 68.6% of V4 agricultural companies that do not cover their costs of equity by returns on equity and therefore cannot be objects for the income valuation methods (mainly the economic-profit-based valuation models). Therefore, this majority of sample companies can only be objects for asset valuation approaches.

Besides, it can be concluded that the creation/destruction of value (value spread approach) depends on the primary activity of the agricultural company: crop production (perennial and non-perennial), plant propagation, animal production, mixed farming and support activities, within the observed sample. Based on the selected results presented in table 8, concerns based in the Czech Republic recognized the advantage of service-related activities, in Poland of alternative animals or plants, in Slovakia of traditional raising of sheep and goats and in Hungary there is a recognition of the success of animal production. in As the literature suggests, the raising of dairy cattle belongs to the less economically effective agricultural activities in all countries.

Finally, the value of this research is limited by its currency, since it was conducted in one year only. This limitation is slightly compensated for by the sample size, which are 4004 agricultural companies from the Visegrad group countries.

There are several possibilities for extending this research: the research sample can be enlarged by adding all the EU member countries, whilst still working with cross-sectional data only, or enlarged in terms of time, i.e. include also other years to work with panel data. The second perspective is to follow the different scenarios of the Common Agricultural Policy (CAP) of the EU beyond 2013 and their consequences on individual agricultural companies in the sample countries, especially if the scenario re-focusses on the termination of the public subsidy scheme. Finally, the income valuation methods can be further examined, explored and adjusted to be more applicable for the specifics of agricultural companies. The most important challenge in the company valuation process is the quality and availability of data. In this particular case, a digital analysis might be applied in order to discover any data inconsistencies and eliminate the effects of such inconsistencies within the research sample, i.e. research findings. Assuming the data are true and unbiased, the close correlation between valuation subject (i.e. expert) and valuation object (i.e. a company) is essential and inevitable. Based on this fact, the resultant value is often a trade secret.

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PRZEDSIĘBIORSTWA ROLNICZE A WARTOŚĆ SPREAD W RAMACH GRUPY WYSZEHRADZKIEJ

Streszczenie

W artykule przedstawiono unikalne porównanie przedsiębiorstw rolniczych z krajów Grupy Wyszehradzkiej, z zastosowaniem wskaźnika spread. Przedsiębiorstwa z tych krajów funkcjonują w podobnych warunkach geograficznych oraz mają zbliżony rozwój historyczny. Niemniej jednak sektory rolne w każdym z tych krajów różnią się. Wskaźnik spread dostarcza informacji, czy koszt kapitału własnego przedsiębiorstwa jest pokryty przez stopę zwrotu z kapitału własnego. Ponadto, wskaźnik ten służy jako weryfikator ram wyceny dochodu. Celem opracowania jest określenie wartości spread przedsiębiorstw rolniczych w krajach Grupy Wyszehradzkiej. Badania wskazują, że tylko część badanych przedsiębiorstw była w stanie pokrywać koszty kapitału własnego przez stopę zwrotu z kapitału. W badaniach empirycznych wykazano, że istnieje zależność pomiędzy wartością spread i krajem pochodzenia przedsiębiorstwa rolniczego oraz między wartością spread i zasadniczą działalnością rolniczą. Polska jest krajem, w którym większość przedsiębiorstw cechuje się dodatnią wartością spread.

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