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The cost of equity of Ukrainian food processing companies as a measure of competitiveness

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Abstract
Each company carries out its activities with different financial resources. Their use then affects the cost of equity and profitability of investments, which determines the possibility to compete in the capital market. Thus, this study is provided in order to define the financing policy with a proper capital structure that is able to minimize the cost of equity of the company in order to improve its financial competitiveness.

The research focuses on Ukrainian food processing companies in the period 2013-2020. The cost of equity is calculated using the modified CAPM model and the methodology of Aswath Damoradan. The US Treasury bond rate as the risk-free rate, equity risk premium, and unlevered β-coefficient for food processing companies in emerging markets were taken from his databases. The leveraged β-coefficient was determined, considering the interest-bearing liabilities and the trade payable of the companies analysed. The cost of equity and its weighted cost were calculated within variants of the conservative, moderate, and aggressive financing policies.

The results indicate that the lowest cost of equity occurs in the variants of conservative, moderate, and super-aggressive financing policies based on the financial independence of the company. Conversely, the lowest weighted cost of equity is identified for the aggressive and super-aggressive financing policies with negligible equity but significant use of non-interest-bearing debt. The link between the cost of equity (its weighted cost) and the use of debt is rather weak in the sample of firms examined. Although the relation is direct for the cost of equity, the correlation coefficients show an inverse relationship for its weighted cost. This confirms that the choice of an appropriate variant of financing policy can lead to minimising the cost of equity and increasing the financial competitiveness of the firm.

Keywords: *corporate financing policy, cost of equity, food processing industry, Ukraine*

JEL Classification: *G11, G31, G32, L66, O16*

1. INTRODUCTION

Most companies' operational activities are linked to a certain type of financing policy. Its application can affect the cost of equity, which determines the investment potential and competitiveness of the company in the capital market. Although previous research has produced many results and conclusions regarding the cost of own and borrowed capital (e.g., Angelopoulos et al., 2016; Puspitasari et al., 2020), practice shows that it depends on the capital structure formed within different types of financing policies of the company (**Konieva, 2021).** It is traditionally believed that the conservative policy, based for the most part on equity, is expensive. An aggressive policy, accompanied by current liabilities, leads to low capital expenses. Despite the need to be paid back, the interest rate above the principal, demand of collateral, and target use, companies prefer liabilities, because the cost of debt is cheaper and easier than the cost of equity, which is influenced by the asymmetry information (Puspitasari et al., 2020) and agency costs between owners and managers (Kontuš, 2021). Furthermore, some kind of protection within the procedures of income receiving or/and bankruptcy procedures decreases investors' risk and the cost of debt (Angelopoulos et al., 2016). Yet, previous research

revealed that, in practice, each type of financing policy can be implemented with a different capital structure that can influence the cost of capital in a different way and calls into the question the existing conclusion about "expensive" conservative and "cheap" aggressive policy.

There are also a number of discussions and questions in the literature on methods of calculating the cost of equity (e.g., Franc-Dąbrowska & Kobus, 2014; Moore, 2016). Therefore, this study responds to the existing need for more research in this area and analyses the different variants of conservative, moderate, and aggressive policies and the effect of their implementation on minimising the cost of equity of the company.

One of the key determinants of financing policy and capital structure is the sector in which the company operates. Macroeconomic developments, inflation level, interest rates, and other indicators also play important roles. Therefore, to achieve consistent and relevant results, it is desirable that the analysis is performed on companies from the same sector operating in the same economy. This paper focuses on the effect of financing policy on the cost of equity for Ukrainian food processing companies over the period 2013-2020. The importance of the food processing industry can be quantified by a number of indicators calculated from data published by the State Statistics Service of Ukraine (2013-2020). The share of this sector in the total GDP of Ukraine was 3.9% in the period under review, which represents approximately a third of the entire manufacturing sphere. The significant position of the food processing sector is also documented by its share in the total turnover and capital investment of the manufacturing industry, which is 28% and 25%, respectively. More than 20% of the workforce in the manufacturing industry is employed in food processing companies. Furthermore, finished food products represent about 7% of Ukraine's total exports. The cost of equity is also an important problem for Ukrainian food processing companies, as the equity-to-capital ratio has remained high regardless of the financing policy implemented over a long period of time. Minimising the cost of equity can make this sector attractive for internal and external investments.

Thus, the objective of this paper is to determine the optimal variant of the financing policy that will lead to minimising the cost of equity of Ukrainian food processing enterprises in order to improve their financial competitiveness. In this paper, in contrast to studies of similar focus, the variants of conservative, moderate and aggressive financing policies with different capital structure are tested. Another contribution of the paper is the modification of the CAPM model, which is used to calculate the cost of equity. An element of trade payable is added to the model, and thus the financial leverage and the β-coefficient are quantified more accurately. According to the aim of the study and due to improved methodology, the following research questions will be considered:

1. Is the (weighted) cost of equity determined by the type of financing policy?
2. Is there a relationship between the (weighted) cost of equity and the capital structure?

The results will provide the instruments for choosing the type of financing policy and its capital structure to minimize the value indexes of the company.

The rest of the paper is structured as follows. Chapter 2 provides a theoretical background and a review of the relevant literature. The first part of this chapter discusses the impact of the cost of equity on firm competitiveness. In the second part, the different types and variants of financing policy are presented from a theoretical point of view, and in the third part, approaches to the definition and calculation of the cost of equity are presented. Chapter 3 contains the research methodology and methods for the calculation of the core variables. Chapter 4 presents and discusses the research results together with implications for the companies under study. Chapter 5 concludes the paper with a summary of key findings and conclusions.

2. THEORETICAL BACKGROUND

2.1. The cost of equity as a measure of competitiveness

Traditionally, the company's ability to be competitive in the market is defined by location, cultural mix, organisational structure, network, knowledge management, innovation (Prasetyo, 2016), as well as age and size of the firm, its leverage, risk level, employee capacity, inflation, government capital expenditures and development in the labour market, foreign exchange policy, etc. (Atanda & Osemene, 2020). Among the various factors of business performance, adjusting the company's financial position is also considered as a means of maintaining its competitiveness (Tousek et al., 2021). The scientific literature defines the term of financial competitiveness of the company (Xu et al., 2022). It is determined as a type of competitiveness based on knowledge and innovation ability that integrates financial capability to benefit sustainable competitive advantage (Zhu et al., 2019).

Financial competitiveness is defined by various indexes. So far as profitable opportunities result in higher production and sales (Akben-Selcuk, 2016), the return on sales, the return on assets, and the return on equity are often used as measures of competitive advantage (Prasetyo, 2016). Additionally, the financial competitiveness evaluation index system is proposed, which contains the ratios of development capability, operation and profitability capability, and debt-paying capability (Ran & Zhang, 2011). These indexes define the ability of the company to provide development, use assets to make a profit, fulfil financial obligations, generate the return to investors, and sufficient operating cash flows (Xu et al., 2022).

Along with the implemented financing policy and the attracted capital resources, competitiveness can be reflected in their costs, the high level of which can deter investments and reduce the income of a firm (Atanda & Osemene, 2020). The low cost of capital, which provides added economic value and business value, is a promise of long-term competitiveness (Blendinger & Michalski, 2018). The cost of equity, which determines the capital structure and the return on investment (Puspitasari et al., 2020), definitely reflects the competitiveness of the company in the capital market. The cost of equity defines the source of own capital (private placement or public placement offering) and the type of issued common or preferred shares (Brabenec et al., 2020). As an element of the weighted average cost of capital (WACC), the cost of equity influences the possibility for the firm to compete for own and borrowed resources and determines the profitability of such investments for various stockholders.

2.2. Variants of the financing policies implementations

As it competes in the capital market, the company attracts a variety of resources that form conservative, moderate, or aggressive financing policies, each of which can be implemented in several variants. Previous research revealed the impact of these variants on the weighted cost of debt (Konieva, 2021). Applying a similar approach, it is possible to analyse the impact of the conservatism (aggressiveness) of the financing on the cost of equity, in particular the weighted cost of equity as another element of WACC.

Based on the criteria, the conservative policy has a share of net working capital (current assets – current liabilities) equal to and more than 60% of the current assets (CA). The moderate policy has a share of 40-59%, while the aggressive policy has less than 39%. If the net working capital (NWC) is negative, there is a super-aggressive financing policy (Tereshchenko & Konieva, 2020). There are next variants of the implementation of each policy in practice (Tab. 1).

Tab. 1 – Different variants of financing policies. Source: **Konieva (2021).**

Type/variant of the financing policy	**NWC/ CA, %**	**Share in the capital, %:**			
		Equity	**Interesting-bearing liabilities**	**Trade payable**	**Non-interesting-bearing liabilities**
1.Conservative:					
Variant 1.1	≥ 60%	≥ 40%	Not specified		
Variant 1.2		0-39%			
Variant 1.3		<0			
2.Moderate:					
Variant 2.1	40-59%	≥ 40%	Not specified		
Variant 2.2		0-39%			
Variant 2.3		<0			
3.Aggressive:					
Variant 3.1	0-39%	≥ 40%	Not specified		
Variant 3.2		0-39%			
Variant 3.3		Not specified	Not specified	≥ 30%	Not specified
Variant 3.4			Not specified	Not specified	≥ 30%
Variant 3.5			≥ 30%	Not specified	Not specified
4.Super-aggressive:					
Variant 4.1	NWC<0	≥ 40%	Not specified		
Variant 4.2		0-39%			
Variant 4.3		<0			
Variant 4.4		Not specified	Not specified	≥ 30%	Not specified
Variant 4.5			Not specified	Not specified	≥ 30%
Variant 4.6			≥ 30%	Not specified	Not specified

Conservative policy can be characterised by financial independence from debts (variant 1.1), or it can attract long-term loan capital with an insignificant share of equity (less than 40% of total capital) – variant 1.2, or it may even have a negative value of equity – variant 1.3.

Moderate financing policy maintains a high level of equity (variant 2.1) or reduces its level (less than 40%), attracting long-term and short-term debts (variant 2.2). The moderate policy is also possible with negative equity if it is provided with significant loans that are taken out for more than 1 year – variant 2.3.

An aggressive policy is provided with equity above and below 40% of the capital, respectively, variants 3.1 and 3.2. In the case of aggressive and super-aggressive policies, the role of current debts is growing. They can be granted from various sources, which determines the different variants for the implementation of such policies. Therefore, insufficient or negative equity can be replaced by long-term and short-term interest-bearing liabilities, which both can form more than 30% of the total capital, variant 3.5 of the aggressive policy and variant 4.6 of the super-aggressive policy. There are also observations of the aggressive policy, which can attract more than 30% of all financial resources either through trade payables (variant 3.3) or through non-interest-bearing liabilities (variant 3.4). The cost of trade payable depends on the length of its repayment term; the non-interest-bearing liabilities are pay-free.

When a company has a super-aggressive policy, it can be accompanied by a high share of equity (variant 4.1); low share (39% and less; variant 4.2) or negative equity (variant 4.3), compensating this situation mostly with the current debts. Within a super-aggressive policy, 30% and more of the capital can be formed at the expense of trade payable (variant 4.4) or/and non-interest-bearing liabilities (variant 4.5) or/and interest-bearing liabilities (variant 4.6).

By specifying the variants of the implementation of each financing policy, it is possible to determine how precisely the level of their conservatism (aggressiveness) and the structure of their capital influence the cost of equity. Due to negative equity, it will be impossible to define its cost within variants 1.3, 2.3 and 4.3. As a result, their observations will be excluded from further research.

2.3. Discussions of the elements of the cost of equity

Despite the importance of the cost of equity as a level of income required by owners, it seems that this index is the most troublesome component of WACC (Moore, 2016). Almost every scientific article on the cost of equity uses its own methodology of calculation, as well as databases. In practice, businesspeople sometimes consider equity as pay-free capital or associate it with a specific cost estimated at the deposit interest rates in the bank or transaction cost due to the rarity of such a financial resource (Franc-Dąbrowska & Kobus, 2014). The most used models for estimating the cost of equity are the dividend growth model, capital assets pricing model (CAPM), and their interpretations (firm-based and market-based measures of the cost of equity; build-up model).

If the cost of equity can be considered as the return, that a firm theoretically pays to its equity investors (Mądra-Sawicka, 2020), the dividends can be the basis for its calculation. The dividend growth model or dividend capitalisation model determines the return, which the shareholders require on the stock that can be equated to the cost of equity. It is based on the planned dividend-to-share price ratio and the constant growth rate of dividends (Ofogbe et al., 2021). Similar to the dividend growth model are the market-based model, which evaluates the actual cost of equity from the investor perspective and compares the dividends and the price of the share at the end of the year with its starting price, and PEG (price/earning to growth) ratio, which combines the price of stock with generated earning and expected growth. Close to them, the firm-based measure takes into account the market value of equity, dividends, and the amount of common and preferred stock repurchased (Moore, 2016).

However, all these models can only be used by companies that implement a dividend policy and are more suitable for developed countries (Zandi et al., 2022). Moreover, under the conditions of the Ukrainian economy, most firms are private, and public joint-stock companies do not conduct active trading in the stock exchange markets. For a variety of reasons, companies do not pay dividends. In addition, this model does not take into account the capital structure, different risks of the company's internal and external environment, its industry affiliation, etc.

One of the common approaches to determine the cost of equity is the CAPM. However, along with it, the build-up model is used as an empirical method of estimating the expected return on equity. If CAPM accepts the external, market, and systematic risks, the build-up model is based on internal, specific and unsystematic risks (Horváthová & Mokrišová, 2017). Due to the individual nature of the included risks and the disregard of important elements, such as β coefficient, many interpretations of the build-up model exist, which makes it difficult to use in practice and not completely reliable. Close to CAPM – the Fama and French Three Factor

model, which was considered more suitable for the Czech market, includes many specific data (the difference between past average annual portfolio yields with small and large capitalisation; the difference between past average annual income from shares with high book value to market value ratio and low book value to market value ratio) that cannot be easily defined for companies from another economy (Machová et al., 2022).

CAPM is considered as a conservative hurdle rate for firms and a conservative expected return for investors, so it has a central position among other models of the cost of equity (Moore, 2016). Nevertheless, there are certain discussions regarding the calculation of CAPM elements: risk-free rate (minimum level of income when investing in assets with minimal risk in the capital market), the average level of income from investments in the market and β-coefficient, which characterizes the enterprise, in which capital is invested.

Thus, some scholars consider state securities as assets with minimal risk or risk-free investments to calculate the cost of equity for companies from their countries: government bonds of Lithuania (Galinienė & Butvilas, 2010); government bonds of Croatia (Štritof et al., 2009); bonds issued by the central bank of Jordan (Odat et al., 2021); Chile's Central Bank Bonds (Vergara-Novoa et al., 2018). But, in the case of economic instability in the country, increasing the likelihood of default, state securities, especially from countries with emerging markets, are not always appropriate. As other alternatives, one-month up to 10-year Treasury bills, the London Interbank Offered Rate (LIBOR), the zero Swap (Libor) curve, the Overnight Indexed Swap (OIS), or German Government Bonds are proposed (Moore, 2016; Al Mutairi et al., 2009). The latter showed negative rates during the Euro crisis, so such state securities can be considered as risk-free investments.

From the point of view of Damodaran (2012; 2013-2020), the mandatory characteristic of the risk-free rate should be the equality of the actual and expected income, which can be possible in the absence of the default risk. In this sense, corporate securities are excluded and government bonds are preferred. At the same time, state securities cannot be an appropriate option when there is a possibility of refusing to implement the decisions of the previous government or attracting the financial resources by the state in foreign currencies. Furthermore, there must be consistency between the term of risk-free assets and the period of evaluation of the company's activity. If the company's activity is planned for 5 years, annual risk-free securities will be inappropriate. Damodaran also emphasises the need to match the currency of the risk-free asset and the currency of the firm's indexes that will be evaluated (Damodaran, 2012). To avoid the risk that exists in the country where the enterprise operates, the author proposes 10-year long-term US Treasury bonds as risk-free investments (Damodaran, 2013-2020).

The next element of CAPM – the market risk premium (the difference between the expected market rate of return and the risk-free rate) – is also calculated differently. It can be estimated according to the country's rating by Moody's (Štritof et al., 2009); the profitability of the Standard & Poor's 500 Index portfolio (Coelho Jr. et al., 2022) and due to indexes inside specific market – Stock Index of Santiago Stock Exchange (Vergara-Novoa et al., 2018) or percentage change in the Amman Stock Exchange General Free Float Price-Weighted Index (Odat et al., 2021). It can also be determined by the risk premium of corporate bonds and the return on government bonds (Galinienė & Butvilas, 2010).

In addition to the market risk premium, the term equity risk premium is used. According to Damodaran, the equity risk premium consists of two parts: the mature market premium and the

additional risk premium for a specified country. The mature market risk premium is the equity risk premium for the United States, calculated as the implied equity risk premium for the S&P 500 (Damodaran, 2013-2020). The basis for the additional country risk premium is the default spread for the specified country. The sum of the mature market risk premium and the country risk premium defines the equity risk premium.

β-coefficient, as an element of the CAPM model, is a measure of the risk arising from the exposure of an investment to general market movements and expresses the sensitivity of an investment return compared to that of the entire market (Angelopoulos et al., 2016). The definition of the coefficient is related to the presence of the company in the stock market. Otherwise, the average indicators of the companies presented in the stock market, of a similar industry and the degree of the risk are taken for calculation. But, for example, in the case of Croatia, it is difficult to find such samples because only one appropriate firm is listed on the market. Furthermore, there is doubt about the financial market's overall development (Štritof et al., 2009). The same situation can be observed in many emerging economies.

Damodaran notes that a firm's β-coefficient is formed by three components: type of enterprise activity, operational and financial leverage (Damodaran, 2014). A high level of coefficient belongs to firms that are subjected to cyclical changes in the market and are characterised by the elasticity of demand. In contrast, companies engaged in food processing, production of basic necessities, and daily use products usually have a smaller coefficient. The author calculates β-coefficient depending on the industry and the type of market in which the firm operates, both for the whole world and for individual markets, such as the United States, Europe, Japan, China, India, and emerging markets.

Determining the leveraged β-coefficient of similar firms, he frees the indicator from their financial leverages, calculating the unlevered β-coefficient. Next, it is adjusted for the amount of cash. The author notes that cash is usually invested in liquid, almost risk-free investments, so it has a β-coefficient close to 0. Such an adjustment removes the influence of cash, and the unlevered β-coefficient, corrected for cash, can be obtained (Damodaran, 2013-2020). The average value of this index, based on the activity of similar firms, can be used for a certain company, which can adjust unlevered β-coefficient with its financial leverage.

3. RESEARCH METHODOLOGY

The research database includes publicly available financial indexes of the 45 Ukrainian food processing companies (22 are producers of bread and bakery products, cakes, cocoa, chocolate and sugar confectionery, and 23 belong to the dairy industry, milk processing, butter, cheese, and ice cream) for the period 2013-2020 (Stock market infrastructure development agency of Ukraine, 2013-2020). Taking into account the number of selected companies, the availability of their annual financial report, after excluding unacceptable data, such as negative equity or excessive financial costs, days payable outstanding, and the share of NWC in current assets, the whole amount of the observations will be 262 records.

The points of view discussed above revealed that researchers apply individual, often ambiguous approaches to calculating the cost of equity for companies in their countries, which for various reasons are not suitable for companies from other regions. The way out of such a situation can be different sources of information, for example, Thompson Reuters Database (Falatifah &

Hermawan, 2021); Bloomberg Database, Moody's rating, Fitch rating, country's Morgan Stanley Capital International index (Jacobs & Vuuren, 2015) or any others.

The lack of statistical and reporting data, the peculiarities of the development, and the instability of the domestic financial market and economy also force us to use available public data. Damodaran's research and databases may be the one. Provided information about industrial β-coefficient, risk premium, other basic elements of the cost of equity are widely used by scientists from different countries (Matasová et al., 2022; Vergara-Novoa et al., 2018; Galinienė & Butvilas, 2010; Štritof et al., 2009; Machová et al., 2022).

He discloses the calculation methodology in detail, publishes and constantly updates all the necessary data for value-based indexes of the companies in various industries, countries, markets, etc., which simplifies their application in practice and research. In connection with this, a further calculation will be carried out taking into account his databases.

The cost of equity will be calculated as CAPM (Damodaran, 2022):

$$R_e = R_f + \beta \times ERP \quad (1)$$

where: R_e – cost of equity;
R_f – risk-free rate;
β – levered β-coefficient of the company;
ERP – equity risk premium.

The assets with risk-free rates, used in the research, are presented by long-term U.S. Treasury bonds (Tab. 2). During the period analysed, the risk-free rate reduced three times from 3.04% in 2013 to 0.93% in 2020. However, there were years when this index was increasing despite the fact that no value exceeded the risk-free rate of 2013. Compared to 2014, the risk-free rate increased from 2.17 to 2.68 in 2018. After this, in 2019 and 2020 a sharp decrease can be observed.

Tab. 2 – Elements for the calculation of the cost of equity.
Source: database of Damodaran (2013-2020); Inflation in the United States (World Bank, 2013-2020); Inflation Rate in Ukraine (State Statistics Service of Ukraine, 2013-2020).

Year	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
U.S. long-term treasury bond rate (Risk-free rate), %	3.04	2.17	2.27	2.45	2.41	2.68	1.92	0.93
Unlevered β for the food processing industry in emerging markets	0.67	0.63	0.76	0.66	0.78	0.73	0.69	0.8
Equity risk premium for Ukraine	16.25	28.9	21.94	14.62	11.28	14.98	11.18	11.02
Consumer price index in the United States, %	1.46	1.62	0.12	1.26	2.13	2.44	1.81	1.25
Consumer price index in Ukraine, %	0.5	24.9	43.3	12.4	13.7	9.8	4.1	5

The β-coefficient is defined as a systematic risk measurement that reflects the sensitivity, or degree of risk of a particular enterprise or sector of the economy compared to other companies in the market (Galinienė & Butvilas, 2010). Damodaran calculates such unlevered β, corrected for cash, for companies in the food processing industry in emerging markets. According to his database, emerging markets include regions such as Asia, Latin America, the Middle East, and

Africa, as well as Eastern Europe, so the proposed β-coefficient can be applied to Ukraine (Tab. 2). Despite the fact that the food processing industry has a short operating cycle and inelastic demand, its β-coefficient is unstable and tends to increase from 0.67 in 2013 to 0.8 in 2020. Damodaran (2022) suggests determining the β-coefficient of the analysed firm taking into account its financial leverage:

$$\beta_l = \beta_u * [1 + (1 - t)(D/E)] \quad (2)$$

where, β_l – leveraged β-coefficient;
β_u – unleveraged β-coefficient;
t – tax profit rate;
D/E – debt-to-equity ratio; financial leverage of the company

The author includes only the interest-bearing liabilities as debt within this formula. The financial costs for interest rate on such debts give tax profit savings for the firm. Due to the hidden and individual nature of the cost of the trade payable, it is often considered as non-interest-bearing current liability and excluded from the total debt of the company (Damodaran, 2022). However, the method developed in previous studies provided an opportunity to calculate the cost of trade payable (Konieva, 2020). This makes it possible to add it to the financial leverage and the calculation of levered β-coefficient. The trade payable will not be associated with tax savings, so it will be included as an additional element.

$$\beta_l = \beta_u * [1 + (1 - t)(D_1/E) + (D_2/E)] \quad (3)$$

where:
D_1 – interest-bearing liabilities (long-term and short-term bank credit; other long-term and short-term liabilities);
D_2 – trade payable.

In the firm's case where the financial report contains liabilities, but there are no financial costs, such debts will not be included in D_1. In addition to trade payable, the period of repayment (days payable outstanding) is close to the minimal term in the industry, and will not be summarised as D_2. In other words, such trade payable is pay-free because there is no lost discount or penalties for payment delay. In such cases, both debts will be considered as non-interest-bearing liabilities.

The equity risk premium for Ukrainian companies, which will be used for the research, is also proposed in the database (Tab. 2). Since the data for the risk-free rate, β-coefficient, and equity risk premium are carried out in U.S. dollars, their application for Ukraine is possible through conversion, taking into account inflationary trends (consumer price index, CPI) in both countries by formula 4 (Damodaran, 2022):

$$R_{e,UAH} = \left(1 + R_{e,US\ \$}\right) * \frac{(1+CPI_{UAH})}{(1+CPI_{US\ \$})} - 1 \quad (4)$$

where:
$R_{e,UAH}$ – cost of equity in UAH;
$R_{e,US}$ – cost of equity in US $;
CPI_{UAH} – Consumer price index in Ukraine
$CPI_{US\ \$}$ – Consumer price index in the United States

The events that began in 2014 in Ukraine led to economic instability, which was reflected in the inflation rate and the equity risk premium. The highest values of both indexes were observed in 2014 and 2015. The equity risk premium (respectively, 28.9 and 21.94) and consumer price index (respectively, 24.9 and 43.3) can have a significant influence on the cost of equity.

In order to find the financing policy that minimises the cost of equity, it is important to understand how these two values are related. As long as the type of financing policy is defined by the NWC-to-current assets ratio, it is possible to evaluate the strength of the linear relationship between this ratio and the cost of equity (in particular, the weighted cost of equity) with the help of Pearson's correlation coefficient. Since financing policy and its variants according to the formula 3 directly influence the cost of equity through interest-bearing liabilities, as well as trade payable, Pearson's coefficient can also determine the correlation between the share of debts in total capital (in particular, the share of interest-bearing liabilities and trade payable separately) and the cost of equity (weighted cost of equity). Such evaluation can be made for the whole database and within the observations of conservative, moderate, aggressive, and super-aggressive policies.

4. RESEARCH RESULTS AND DISCUSSION

In order to provide the competitiveness of the company in the capital market, it is important to find out the most expensive and cheapest variant of the conservative, moderate, and aggressive financing policy toward the cost of equity and its weighted cost. Determining the correlation between the cost (weighted cost) of equity and the type of financing policy, as well as its capital structure, will give the possibility to manipulate the degree of conservatism (aggressiveness) through the share of NWC in the current assets and share of debt, including interest-bearing liability and trade payable, in order to minimise basic value indexes of the company. The results within the established aim of the study and the main research questions are presented in the next sections.

4.1. The cost of equity within conservative, moderate, and aggressive financing policies

Although the total database is characterised by an aggressive policy (the share of NWC in the current assets is only 3%), the equity forms on average 51% of the financial resources (Tab. 3). Most of the debts (41% of the capital) are current. The shares of interest-bearing and non-interesting-bearing liabilities as well as trade payable are, respectively: 17%; 15%; 17%.

Compared to this, companies in Central Europe follow pecking order theory in capital structure, commonly using internal resources, short-term debt, and trade credit (Gregova et al., 2021). Such a financing policy is provided regardless of the financial distress risk of current liabilities and despite the possibility of tax shield from long-term loans, the share of which is insignificant (Kovacova et al., 2022).

Tab. 3 – The cost of equity within different variants of the financing policies. Source: own research.

Type/variant of the financing policy	Observations	NWC/CA, %[1]	Average share in the capital, %:						Cost of equity, %	Weighted cost of equity, %
			Equity	CL[2]	LTL[3]	Interesting-bearing liabilities	Trade payable	Non-interesting-bearing liabilities[5]		
1	2	3	4	5	6	7	8	9	10	11
1.Conservative:	66	80	75	13	12	13	5	7	36.4	25.5
Variant 1.1	57	81	83[8]	13	4	6	4	7	34.3	27.5
Variant 1.2	9	73	28[4]	17	55	58	11	3	49.2	13.1
2.Moderate:	42	50	61	32	7	12	17	10	35.4	20.9
Variant 2.1	37	50	64[8]	31	5	10	18	8	34.1	21.5
Variant 2.2	5	46	37[4]	41	22	25	12	26	44.7	16
3.Aggressive:	74	21	41	49	10	22	21	16	44.2	17.8
Variant 3.1	39	23	53[8]	43	4	15	23	9	45.3	23.4
Variant 3.2	35	19	27[4]	57	16	30	19	24	43	11.6
Variant 3.3	21	15	39	55	6	11	40[6]	10	54.1	21.5
Variant 3.4	16	21	27	59	14	23	9	41[7]	38.2	9.7
Variant 3.5	20	22	31	51	18	44[9]	10	15	51	16.4
4.Super-aggressive:	80	-103	36	59	5	18	24	22	42.2	12.7
Variant 4.1	30	-146	62[8]	35	3	7	21	10	29.3	17.7
Variant 4.2	50	-77	21[4]	74	5	24	26	29	50	9.6
Variant 4.4	31	-109	28	66	6	8	45[6]	19	44	10.2
Variant 4.5	23	-96	19	74	7	5	21	55[7]	51.4	9.2
Variant 4.6	19	-48	25	72	3	55[9]	13	7	47.3	9.5
5. All observations	262	3	51	41	8	17	17	15	40.2	18.7

Note: 1 – net working capital/current assets; 2 – current liabilities; 3 – long-term liabilities; 4 – those cases are selected, where equity is positive, but less than 40% from total capital; 5 – column 9 = 100% – column 4 – column 7 – column 8; 6 – those cases are selected, where trade payable is equal or more than 30% from total capital; 7 – those cases are selected, where non-interest-bearing liabilities are equal or more than 30% from total capital; 8 – those cases are selected, where equity is equal or more than 40% from total capital; 9 - those cases are selected, where interest-bearing liabilities are equal or more than 30% from total capital.

The capital structure of Ukrainian companies determines the cost of equity at the level of 40.2% and its weighted cost at 18.7%. The average cost of equity obtained is much higher than the same index in developing and developed countries. For example, mean cost of equity for Jordan manufacturing firms for 2014-2018 is only 2.8% with a 0.009 standard deviation (Odat et al., 2021). The cost of equity, calculated by five different models for Chinese companies during 2007-2018, fluctuated from 5.1% to 11% (Yang et al., 2022). The same index for companies from OECD countries during 2015-2017 has the average value 6.5% with minimum level of 0.91% and maximum – 17.30% (Falatifah & Hermawan, 2021). This sharp difference from Ukrainian firms is explained by a significant unlevered β of the food processing industry, a high domestic inflation rate and an equity risk premium.

The descriptive statistics show that the database is not homogeneous (Tab. 4). Variability of the level of conservatism (aggressiveness), the share of different liabilities, and the cost of equity were found. In the example of the share of NWC in current assets, it can be proved by a significant standard deviation – 103.2. The data are highly negatively skewed (-2.8) with a long tail on the left. Despite a large standard deviation – 23.0, this data set looks fairly symmetrical toward the debt share; the skewness is 0.24. There is no symmetry in the sources of such liabilities. Within the database, the role of interest-bearing debts and trade payable varies greatly.

Tab. 4 – Results of descriptive statistics for different financing policies. Source: own research.

Index	**NWC/CA**	**Cost of equity**	**Weighted cost of equity**	**Debt/ Capital**	**D_1/Capital**	**D_2/Capital**
Whole database						
Mean	2.5	40.2	18.7	33.9	16.8	17.2
Standard Deviation	103.2	23.3	14	23.0	20.6	16.4
Skewness	-2.8	0.8	1.6	0.24	1.3	0.9
Observations of the conservative policy						
Mean	79.6	36.4	25.5	18.3	13.0	5.2
Standard Deviation	9.8	22.9	17.4	23.5	21.3	7.7
Skewness	-0.3	0.8	1.2	1.5	1.8	1.4
Observations of the moderate policy						
Mean	49.6	35.4	20.9	28.6	12.1	16.5
Standard Deviation	5.5	19.4	12.6	15.0	11.2	12.3
Skewness	0.2	1	1.5	0.2	0.4	0.3
Observations of the aggressive policy						
Mean	20.9	44.2	17.8	42.8	22.0	20.8
Standard Deviation	11.6	24.3	12.7	14.1	16.8	14.7
Skewness	-0.3	0.9	1.3	-0.3	0.3	0.5
Observations of the super-aggressive policy						
Mean	-102.8	42.2	12.6	41.4	17.5	24
Standard Deviation	131.5	24.1	9.21	25.4	24.4	19.4
Skewness	-1.8	0.6	2.2	0.005	1.3	0.5

The conservative policy is fairly symmetric with respect to the NWC-to-current assets ratio (Tab. 4). However, variability and skewness with the right-hand tail in the share of the debt (interest-bearing and trade payable) and cost of equity can be noticed. It can be explained by the existence of variants of conservative policy implementation and their different influence on the value index. The skewness with the right-hand tail in the share of the debt exists because of the majority of the observations within this policy, which is financially independent of debts (variant 1.1). Their average cost of equity is the lowest, 34.3% (Tab. 3). But the significant share of own capital (on average 83%) causes the highest weighted cost of equity, 27.5%.

The cost of equity within the observations of variant 1.2 is greater – 49.2%. First, it is caused by the influence of unlevered β, which is significant for the food processing industry in emerging markets. Second, financial leverage due to the presence of 58% interest-bearing debts

in the capital increases the β-coefficient. The next factor is the equity risk premium, which, according to Damodaran's calculations, is large for Ukraine, on average 16.27 for the period 2013-2020. The highest level was observed in 2014 – 28.9. There is definitely a factor in domestic inflation, which in 2014 and 2015 reached 24.9% and 43.3%, respectively. The cost of equity was offset by its low share within variant 1.2 (28% on average), which contributed to the reduction of the weighted cost to 13.1%.

The peculiarity of the moderate policy is the symmetry of the data set concerning the share of different debts (0.3-0.4). However, its variability is accompanied by a high standard deviation in the cost of equity 19.4 and the skewness of its weighted cost 1.5 (Tab. 4). Similarly, for variant 1.1, the cost of equity for the observations of variant 2.1 is low – 34.1%, but financial independence (64% of the equity in the capital) leads to a high weighted cost – 21.5% (Tab. 3). Factors that affect the cost of equity within variant 2.2 are similar to those considered in variant 1.2. Significant unlevered β of the industry; financial leverage of the observations (37% of interest-bearing debts and trade payable in the capital), equity risk premium in the Ukrainian market and the level of domestic inflation cause the cost of equity – 44.7%. But, the average share of equity (37%) allows one to keep the weighted cost at the level of 16%.

The data set for the aggressive policy is also quite symmetric according to the distribution of the observations concerning the share of debts. Skewness is negative, but low – 0.3 (Tab. 4). Almost half of the capital within the aggressive policy is formed by current liabilities – 49% (Tab. 3), which can be differentiated by several sources: interest- and non-interest-bearing debts, trade payable. As a consequence, there is variability towards the cost of equity and its weighted cost. Their data sets are non-symmetric with right-hand tails, respectively, 0.9 and 1.3.

The sources of the debts form different variants of the implementation of the aggressive policy (Tab. 3). Variant 3.1 is characterised by financial independence, but unlike variants 1.1 and 2.1, the average share of equity is lower, at 53%. The cost of equity increases to 45.3%, and its weighted cost to 23.4%. There are further reasons for such a situation. The fourth part of all records was observed in 2014 and 2015 during high inflation. Furthermore, the levered β increases under variant 3.1 due to debts. If under conservative and moderate policies the total share of the interest-bearing liabilities and trade payables in the capital is 10% (variant 1.1) and 28% (variant 2.1), within variant 3.1 it is already 38%.

When the aggressive policy has no purpose of financial independence and the share of equity decreases to 27%, this is accompanied by 43% of the cost of equity and by the reduction of its weighted cost to 11.6% (variant 3.2). If an aggressive policy forms a third or more of its capital at the expense of trade payables, which generates cost in the form of a lost discount and/or fines for late payments (variant 3.3), this negatively affects the cost of equity (54.1%) due to increased financial leverage. Together with a significant share of equity (39% of the capital), this raises its weighted cost to 21.5%. In variant 3.5 there are observations, in which the average share of the interest-bearing debts is 44% of the capital. This raises the cost of equity to 51%, but a lower share of its own capital (31%) decreases its weighted cost to 16.4%. The selected cases of aggressive financing, for which equity is on average 27% and non-interest-bearing liabilities – 41% reduce leveraged β and positively affect the cost of equity – 38.2%, leading to a low weighted cost – 9.7% (variant 3.4).

Due to the fact that all observations, which have negative NWC, relate to the super-aggressive policy, there is a huge variability of its dataset (Tab. 4). According to the share of NWC in

current assets, the standard deviation of 131.5 and the skewness with the left tail (-1.8) can be observed. Despite this, the share of the debt is distributed symmetrically (skewness 0.005). Nevertheless, the role of the interest-bearing liabilities decreases so far as skewness is 1.3, which means fewer observations that have a high share of such debts in their capital.

Within the super-aggressive policy, the next variants of its implementation can be determined. When the super-aggressive policy does not give up a significant share of equity (on average 62% of the capital, variant 4.1), it reduces its cost to 29.3% (the smallest cost among the database) but increases the weighted cost to 17.7% (tab. 3). Other variants of the super-aggressive policy, even with high financial leverage and the cost of equity, do not lead to an increase in the weighted cost due to an insignificant share of own capital. Thus, variant 4.4 of the super-aggressive policy with 45% of the trade payable in the capital has the weighted cost of equity at the level of 10.2%. Variant 4.2, which more or less has the proportional distribution of the financial resources (the share of equity, non-interest-bearing liabilities, trade payable, and interest-bearing liabilities are, respectively, 21%, 29%, 26% and 24%) has the weighted cost of equity of 9.6%. Variant 4.6 with observations that have on average 55% of interest-bearing liabilities in the capital is characterised by the weighted cost of equity of 9.5%. Variant 4.5 has the lowest weighted cost of equity – 9.2% due to the financial dependence on non-interest-bearing liabilities, which make up on average 55% of the capital.

Thus, the lists of the variants of the financing policies toward the cost of equity and its weighted cost are as follows (Tab. 5):

Tab. 5 – List of financing policies from the highest to the smallest cost (weighted cost) of equity.
Source: own research.

List of financing policies from the largest to the smallest cost of equity		**List of financing policies from the largest to the smallest weighted cost of equity**	
Variant of the policy	**Cost of equity, %**	**Variant of the policy**	**Weighted cost of equity, %**
Variant 3.3 (aggressive policy)	54.1	Variant 1.1 (conservative policy)	27.5
Variant 4.5 (super-aggressive policy)	51.4	Variant 3.1 (aggressive policy)	23.4
Variant 3.5 (aggressive policy)	51	Variant 3.3 (aggressive policy)	21.5
Variant 4.2 (super-aggressive policy)	50	Variant 2.1 (moderate policy)	21.5
Variant 1.2 (conservative policy)	49.2	Variant 4.1 (super-aggressive policy)	17.7
Variant 3.1 (aggressive policy)	45.3	Variant 3.5 (aggressive policy	16.4
Variant 4.6 (super-aggressive policy)	47.3	Variant 2.2 (moderate policy)	16
Variant 2.2 (moderate policy)	44.7	Variant 1.2 (conservative policy)	13.1
Variant 4.4 (super-aggressive policy)	44	Variant 3.2 (aggressive policy)	11.6
Variant 3.2 (aggressive policy)	43	Variant 4.4 (super-aggressive policy)	10.2
Variant 3.4 (aggressive policy)	38.2	Variant 3.4 (aggressive policy)	9.7
Variant 1.1 (conservative policy)	34.3	Variant 4.2 (super-aggressive policy)	9.6
Variant 2.1 (moderate policy)	34.1	Variant 4.6 (super-aggressive policy)	9.5
Variant 4.1 (super-aggressive policy)	29.3	Variant 4.5 (super-aggressive policy)	9.2

The highest weighted cost of equity was found in variants 1.1, 2.1 and 3.1. They maintain financial independence with relatively low cost of equity. It is possible to keep the weighted cost of equity at an average level within moderate, conservative, and aggressive policies due to the reduced share of net assets (variants 2.2, 1.2, 3.2, 4.4). A low weighted cost of equity was revealed in two variants of super-aggressive policy due to insignificant own capital (variants 4.2, 4.6). In case of variants 4.5 of the super-aggressive policy and 3.4 of the aggressive policy, the decrease of the weighted cost of equity was possible because of the involvement of mostly non-interest-bearing liabilities, which are not taken into account when calculating the company's financial leverage.

The results of the correlation coefficients revealed the absence of a linear association between the degree of conservatism (aggressiveness) of the financing policy and the cost of equity (Tab. 6) within the whole database of observations.

Tab. 6 – Pearson's correlation coefficient and P-value. Source: own research.

Index	NWC/CA and		Cost of equity and			Weighted cost of equity and		
	cost of equity	weighted cost of equity	Debt/ Capital	D_1/ Capital	D_2/ Capital	Debt/ Capital	D_1/ Capital	D_2/ Capital
Whole database								
Pearson's coefficient	0.004	0.23	0.31	0.19	0.2	-0.29	-0.23	-0.13
P-value	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Observations of the conservative policy								
Pearson's coefficient	-0.17	0.1	0.31	0.31	0.07	-0.28	-0.28	-0.08
P-value	0.17	0.42	0.01	0.01	0.56	0.02	0.02	0.51
Observations of the moderate policy								
Pearson's coefficient	-0.14	0.05	0.16	0.28	-0.06	-0.15	-0.07	-0.11
P-value	0.39	0.77	0.31	0.07	0.7	0.35	0.65	0.47
Observations of the aggressive policy								
Pearson's coefficient	-0.05	0.03	0.31	0.07	0.22	-0.02	-0.21	0.22
P-value	0.67	0.8	0.01	0.58	0.06	0.88	0.08	0.06
Observations of the super-aggressive policy								
Pearson's coefficient	0.19	-0.05	0.28	0.11	0.23	-0.23	-0.23	-0.01
P-value	0.1	0.63	0.01	0.35	0.04	0.04	0.04	0.91

The weak direct relationship (Pearson's coefficient 0.23, p-value 0.0002) was found only between the share of NWC in current assets and the weighted cost of equity. Therefore, increasing the conservatism of the financing policy negatively influences the weighted cost of equity, which also grows.

4.2. The relationship between the cost (weighted cost) of equity and the capital structure

The lack of correlation between the cost of equity and the type of financing policy can be provoked by different variants of the capital structure under which each of the conservative, moderate, and aggressive policies implements in practice. Tab. 3 shows a different level of the value indexes, which can be reached under the same financing policy, but with a different share of the debt. In that case, Pearson's coefficient can find the relationship between the cost of

equity (including the weighted cost) and the liabilities (interest-bearing liabilities and trade payable). The linear association between the cost of equity and the share of debts is direct, but weak (Pearson coefficient 0.31, p-value 0.0000005). It is shown also within the data set of the conservative, aggressive, and super-aggressive policies. Furthermore, in the case of conservative observations, there is a weak-direct relationship between the cost of equity and the share of interest-bearing liabilities in the capital (Pearson coefficient 0.31, p-value 0.01). In contrast, within the super-aggressive policy, there is a weak-positive correlation between the cost of the equity and the share of trade payable (Pearson's coefficient 0.23, p-value 0.04). Therefore, an increasing share of debt in the capital weakly provokes the growing cost of equity.

The relationship between the weighted cost of equity and debts is weak and inverse (Pearson's coefficient (-0.29), p-value 0.000001), including the correlation between the mentioned value index and the share of interest-bearing liabilities (Pearson's coefficient (-0.23), p-value 0.00014). The same situation is also revealed within observations of the conservative and super-aggressive policies. In these cases, growing debts lead to a reduction in the share of the equity, which positively influences its weighted cost. The weak correlation between the debt share and the cost of equity can be explained by the role of other factors that participate in the determination of this value index. It concerns the consumer price index and the equity risk premium in Ukraine, which significantly influence the cost of equity within the observations in 2014-2016.

The obtained results showed that changing the capital structure within the same type of financing policy can provoke a high or, vice versa, ensure a low cost (weighted cost) of equity. However, the application of proposed variants of the conservative (moderate, aggressive) policy in practice in order to minimise the cost of equity should be done carefully and individually, so far as conclusions were made, based on average values of the observations.

5. CONCLUSION

This study was carried out to determine the type of financing policy (conservative, moderate, or aggressive) with a proper capital structure that minimises the cost of equity of Ukrainian food processing companies. The cost of equity was calculated by CAPM, improved by adding the trade payable as debt, which clarified the β-coefficient, taking into account the real financial leverage of analysed firms.

Ukrainian enterprises as well as companies from developing and developed countries are inclined to form their capital structure through riskier current debts, including trade payable, minimizing long-term loans. However, due to the significant unlevered β of the food processing industry, the high domestic inflation rate and the equity risk premium, the average cost of equity of Ukrainian companies is much higher compared to business entities in other countries.

According to the aim of this paper and the research questions, the obtained results revealed the absence of homogeneity in the database due to observations of different types of financing policies and variants of their implementation. The highest cost of equity was inherent to conservative, aggressive, and super-aggressive policies if companies implemented them with a significant share of the interest-bearing liabilities and trade payable with long days payable outstanding. The lowest cost of equity was observed simultaneously within the conservative, moderate, and super-aggressive financing policies, which maintained financial independence.

The determination of the weighted cost of equity provided different results. When conservative, moderate and aggressive policies supported financial independence, the significant share of the

cost of equity led to its high weighted cost. The lowest value was observed for the variants of aggressive and super-aggressive policies, which decreased the role of own capital or/and attracted mainly non-interest-bearing debts.

The type of financing policy did not have a linear association with the cost of equity. The increase in the level of conservatism (aggressiveness) did not directly influence the value index. But, the increasing share of debt in the capital weakly provoked the growing cost of equity. The correlation between debts and weighted cost of equity was revealed as weak and inverse.

The limitations of this study are connected with the results, related only to the specific activity of Ukrainian food processing companies. Moreover, the conclusions obtained concerning the cost of equity cannot be applied in practice separately since it is an element of WACC as a final value index.

The results are the basis for further research in order to determine the WACC indicator itself and its dependence on changing the type of financing policy and its capital structure within the analysed database of Ukrainian companies.

REFERENCES

1. Akben-Selcuk, E. (2016). Factors affecting firm competitiveness: Evidence from an emerging market. *International Journal of Financial Studies, 4*(2), 1-10. https://doi.org/10.3390/ijfs4020009

2. Al Mutairi, M. E., Tian, G. G., & Tan, A. (2009). Corporate finance practice in Kuwait: A survey to confront theory with practice. *22nd Australasian Finance and Banking Conference*. http://dx.doi.org/10.2139/ssrn.1456750

3. Angelopoulos, D., Brückmann, R., Jirouš, F., Konstantinavičiūtė, I., Noothout, P., Psarras, J., Tesnière, L., & Breitschopf, B. (2016). Risks and cost of capital for onshore wind energy investments in EU countries. *Energy & Environment, 27*(1), 82-104. https://doi.org/10.1177/0958305X16638573

4. Atanda, F. A., & Osemene, F. O. (2020). The drivers of the competitiveness of firms in the non-financial sector: Evidence from Nigeria. *Economic Horizons, 22*(2), 99-117, DOI:10.5937/ekonhor2002107A

5. Blendinger, G., & Michalski, G. (2018). Long-term competitiveness based on value added measures as part of highly professionalized corporate governance management of German DAX 30 corporations. *Journal of Competitiveness, 10*(1), 5-20. http:// doi.org/10.7441/joc.2018.02.01

6. Brabenec, T., Poborsky, F., & Saßmannshausen, P. (2020). The difference between preferred & common stocks in Europe from the market perspective. *Journal of Competitiveness, 12*(3), 64-81. https://doi.org/10.7441/joc.2020.02.04

7. Coelho Jr., L. M., Fonseca, A. J. d. S., Castro, R., Mello, J. C. d. O., Santos, V. H. R. d., Pinheiro, R. B., Sousa, W. L., Santos Jr., E. P., & Ramos, D. S. (2022). Empirical evidence of the cost of capital under risk conditions for thermoelectric power plants in Brazil. *Energies, 15*(12), 4313, 1-12. https://doi.org/10.3390/en15124313

8. *Damodaran, A. (2012). Investment valuation*: *Tools and techniques for determining the value of any asset* (3rd ed*)*. John Wiley & Sons. https://suhaplanner.files.wordpress.com/2018/09/investment-valuation-3rd-edition.pdf

9. Damodaran, A. (2013-2020). Data. Archived data. Cost of capital by industry sector for emerging markets. [Data set]. http://pages.stern.nyu.edu/~adamodar/

10. Damodaran, A. (2013-2020). Data. Archived data. Levered and unlevered betas by industry (emerging markets). [Data set]. http://pages.stern.nyu.edu/~adamodar/

11. Damodaran, A. (2013-2020). Data. Archived data. Risk premiums for other markets (emerging markets). [Data set]. http://pages.stern.nyu.edu/~adamodar/

12. Damodaran, A. (2014). *Applied corporate finance (*4th ed.*)*. [eBook edition]. https://pages.stern.nyu.edu/~adamodar/pdfiles/acf4E/acf4Ebook.pdf

13. Damodaran, A. (2022). Data. About data. Data sources. Data definitions. Variables used in datasets. http://pages.stern.nyu.edu/~adamodar/

14. Falatifah, M., & Hermawan, A. A. (2021). Board of directors effectiveness, voluntary integrated reporting and cost of equity: Evidence from OECD countries. *International Journal of Business and Society*, *22*(1), 443-460. https://doi.org/***10.33736/ijbs.3188.2021***

15. Franc-Dąbrowska, J., & Kobus, P. (2014). Cost of equity capital – Measurement dilemmas. *Problems of Agricultural Economics*, 341, 158–170. http://www.zer.waw.pl/pdf-83558-19080?filename=COST%20OF%20EQUITY%20CAPITAL%20_.pdf

16. Galinienė, B., & Butvilas, A. (2010). Analysis of the capital cost impact on share value. *Technological and Economic Development of Economy*, *16*(1), 126-142. https://doi.org/10.3846/tede.2010.08

17. Gregova, E., Smrcka, L., Michalkova, L., & Svabova, L. (2021). Impact of tax benefits and earnings management on capital structures across V4 countries. *Acta Polytechnica Hungarica*, *18*(3), 221-244. http://acta.uni-obuda.hu/Gregova_Smrcka_Michalkova_Svabova_110.pdf

18. Horváthová, J., & Mokrišová, M. (2017). Capital structure modelling and analysis of its impact on business performance. *Financial Assets and Investing*, *8*(2), 19-36. https://doi.org/10.5817/FAI2017-2-2

19. Inflation in the USA (2013-2020). The World Bank. Data. [Data set]. https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=US

20. Jacobs, J., & Vuuren, G. (2015). The role of cost of capital in regulatory capital discrepancies among developing countries. *South African Journal of Economic and Management Sciences*, *18*(1), 84-104. http://dx.doi.org/10.17159/2222-3436/2015/v18n1a7

21. Konieva, T. (2020). Justification of sale terms as a way to minimize the cost of trade credit. *Investment Management and Financial Innovations*, *17*(3), 360-372. http://dx.doi.org/10.21511/imfi.17(3).2020.27

22. Konieva, T. (2021). The impact of financing policy on the cost of debt. *Investment Management and Financial Innovations*, *18*(4), 177-189. http://dx.doi.org/10.21511/imfi.18(4).2021.16

23. Kontuš, E. (2021). Agency costs, capital structure and corporate performance: A survey of Croatian, Slovenian and Czech listed companies. *Ekonomski vjesnik/Econviews - Review of Contemporary Business, Entrepreneurship and Economic Issues*, *34*(1), 73-85. https://doi.org/10.51680/ev.34.1.6

24. Kovacova, M., Krajcik, V., Michalkova, L, & Blazek, R. (2022). Valuing the interest tax shield in the Central European economies: Panel data approach. *Journal of Competitiveness*, *14*(2), 41–59. https://doi.org/10.7441/joc.2022.02.03

25. Machová, V., Kučera, J., & Kašparová, S. (2022). Methods for risk premium: Application for agriculture companies in Czech Republic. *Journal of International Studies*, *15*(3), 82-97. doi:10.14254/2071-8330.2022/15-3/6

26. Madra-Sawicka, M. (2020). Differences in the cost of capital: The case of food companies from emerging and developed European economies. *Acta Scientiarum Polonorum Oeconomia*, *19*(3), 49–56. https://doi.org/10.22630/ASPE.2020.19.3.27

27. Matasová, T., Vochozka, M., & Rowland, Z. (2022). Alternative costs of equity of coal mining companies taking into account a context of the Russian invasion into Ukraine.

Entrepreneurship and Sustainability Issues, 10(2), 394-407. https://doi.org/10.9770/jesi.2022.10.2(24)

28. Moore, D. J. (2016). A look at the actual cost of capital of US firms. *Cogent Economics & Finance*, *4*(1), 1-16. https://doi.org/10.1080/23322039.2016.1233628

29. Odat, M. A., Al Daoud, K. A., & Zurigat, Z. M. (2021). Corporate governance and the cost of equity: Evidence from the developing country. *Journal of Governance and Regulation*, *10*(4), 144–155. https://doi.org/10.22495/jgrv10i4art13

30. Ofogbe, N. S., Ojiakor, I. P., Nnamani, C., Ifeoma, M. I., Anisiuba, C. A., & Ruth, L. (2021). Long-run relationship of corporate social responsibility and cost of capital of quoted companies in Nigeria stock exchange: Nigeria evidence. *Universal Journal of Accounting and Finance*, *9*(5), 946-960. https://www.hrpub.org/journals/article_info.php?aid=11347

31. Prasetyo, H. A. (2016). What drives international competitiveness? An empirical test in emerging Indonesian Market. *Journal of Competitiveness*, *8*(4), 124-139. https://doi.org/*10.7441/joc.2016.04.08*

32. Puspitasari, N. F. D., Simbolon, I. P., & Sari, N. N. (2020). Cost of equity: Disclosure, size, and political connection. In *Proceedings of the 2nd international seminar on business, economics, social science and technology (ISBEST 2019)* (pp. 46-53). Atlantis Press. https://doi.org/10.2991/aebmr.k.200522.010

33. Ran, F., & Zhang, X. (2011). Financial competitiveness evaluation on sporting goods listed enterprises: A China study. *African Journal of Business Management*, *5*(17), 7404-7409. https://doi.org/10.5897/AJBM11.137

34. State Statistics Service of Ukraine. (2013-2020). *Pokaznyky Subiektiv Hospodariuvannia za Vydamy Ekonomichnoi Diialnosti [Indexes of Business Entities by Type of Economic Activity]*. [Data set]. http://www.ukrstat.gov.ua/ (In Ukrainian).

35. State Statistics Service of Ukraine. (2013-2020). Riven infliatsii v Ukraini [Inflation rate in Ukraine]. [Data set]. http://www.ukrstat.gov.ua/

36. **Stock Market Infrastructure Development Agency of Ukraine. (2013-2020**). Richna finansova zvitnistj emitentiv [Annual financial reports of issuers]. [Data set]. https://smida.gov.ua/db/emitent

37. Štritof, I., Gelo, T., & Krajcar, S. (2009). Estimation of weighted average cost of capital in transmission and distribution: Case of Croatia. In *Proceedings of the 9th WSEAS/IASME international conference on electric power systems, high voltages, electric machines*, 153-158. https://www.researchgate.net/publication/228897291_Estimation_of_weighted_average_cost_of_capital_in_transmission_and_distribution_case_of_Croatia

38. Tereshchenko, O., & Konieva, T. (2020). Formalizatsiia kryteriiv polityky finansuvannia pidpryiemstva [Formalization of criteria for enterprise financing policy]. *Problems of Systemic Approach in the Economy*, *3*(77), 88-97. https://doi.org/10.32782/2520-2200/2020-3-33

39. Tousek, Z., Hinke, J., Malinska, B., & Prokop, M. (2021). The performance determinants of trading companies: A stakeholder perspective. *Journal of Competitiveness, 13*(2), 152–170. https://doi.org/10.7441/joc.2021.02.09

40. Vergara-Novoa, C., Sepúlveda-Rojas, J. P., Alfaro, M. D., & Riveros, N. (2018). Cost of capital estimation for highway concessionaires in Chile. *Journal of Advanced Transportation, 2018*, 1-9. https://doi.org/10.1155/2018/2153536

41. World Bank. (2013-2020). Inflation, consumer prices - Ukraine. [Data set]. https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=UA

42. Xu, J., Liu, F., & Xie, J. (2022). Is too much a good thing? The non-linear relationship between intellectual capital and financial competitiveness in the Chinese automotive industry. *Journal of Business Economics and Management, 23*(4), 773–796. https://doi.org/10.3846/jbem.2022.16406

43. Yang, J., Cai, G., Zheng, G., & Gu, Q. (2022). Firm internationalization and cost of equity: Evidence from China. *China Journal of Accounting Research*, *15*(2), 1-23. https://doi.org/10.1016/j.cjar.2022.100237

44. Zandi, G., Shahzad, I. A., Bajaber, N., Nowodziński, P. & Shahid, M. S. (2022). Relationship between corporate governance and cost of equity capital. *Polish Journal of Management Studies*, *26*(1), 386-407. https://doi.org/10.17512/pjms.2022.26.1.24; https://pjms.zim.pcz.pl/api/files/view/2023530.pdf

45. Zhu, Z., Zhu, Z., Xu, P., & Xue, D. (2019). Exploring the impact of government subsidy and R&D investment on financial competitiveness of China's new energy listed companies: An empirical study. *Energy Reports*, *5*, 919–925. https://doi.org/10.1016/j.egyr.2019.07.013

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