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# RESEARCH OF THE RELATIONSHIP BETWEEN THE WEIGHTED AVERAGE COST OF CAPITAL AND SELECTED PROFITABILITY RATIOS OF COMPANIES IN THE REPUBLIC OF SERBIA

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***Abstract:*** *The weighted average cost of capital (WACC) is determined as the weighted average cost of capital of all long-term sources of corporate financing. WACC is used as a discount rate when determining the value of a company, then in investment analysis when making a decision to accept/reject a project, as well as when evaluating the performance of top management. The paper calculates the WACC for all non-financial corporations that make up the basket of the Belex15 index and then examines the relationship between the weighted average cost of capital and the profitability ratios numbers ROA, ROE and net profit margin. The research results show that the WACC ranges between 3.45% and 17.77% for the sample companies. Also, the results show a negative correlation between WACC on one and selected profitability ratios on the other hand. However, it should be noted that this relationship is statistically significant only between WACC and net profit margin.*

***Keywords:*** *WACC, cost of equity, CAPM, cost of long term debt, ROA, ROE, net profit margin, discount rate*

***JEL classification:*** *G12, G23, G31*

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# ISTRAŽIVANJE ODNOSA IZMEĐU PROSEČNE PONDERISANE CENE KAPITALA I ODABRANIH RACIJA PROFITABILNOSTI PREDUZEĆA U REPUBLICI SRBIJI

***Sažetak:*** *Prosečna ponderisana cena kapitala (WACC) se utvrđuje kao prosečna ponderisana cena kapitala svih dugoročnih izvora finansiranja preduzeća. WACC se koristi kao diskontna stopa prilikom utvrđivanja vrednosti preduzeća, zatim u investicionoj analizi pri donošenju odluke o prihvatanju/odbacivanju projekta, kao i prilikom evaluacije performansi top menadžmenta. U radu je izvršeno izračunavanje WACC za sva nefinansijska preduzeća koja sačinjavaju korpu indeksa Belex15, a potom je ispitan odnos između prosečne ponderisane cene kapitala i racio brojeva profitabilnosti ROA, ROE i neto profitne marže. Rezultati istraživanja pokazuju da se WACC kreće između 3.45% i 17.77% za preduzeća iz uzorka. Takođe, rezultati pokazuju da između WACC, sa jedne, i odabranih racija profitabilnosti, s druge strane, postoji negativna korelacija. Treba, međutim, istaći da je ta veza statistički značajna samo između WACC i neto profitne marže.*

***Ključne reči:*** *WACC, cena sopstvenog kapitala, CAPM, cena dugoročnog duga, ROA, ROE, neto profitna marža, diskontna stopa*

## 1. INTRODUCTION

Companies finance their activities through emission of new ordinary/ preferential stocks and bonds, bank loans, and reinvesting retained earnings into the company. Each of these capital sources has a price that companies have to pay in order to use capital. Companies strive to find optimal capital structure that will minimize their overall cost of capital. The total cost of capital is used as a discount rate, and is one of the critical inputs in the process of evaluation of new investment projects company valuation, as well as in the evaluation of the performance of top management.

It could be expected that the companies with a lower overall cost of capital will have more financial resources necessary to finance their investments and further development. As a result, one could expect that the companies with the lower cost of capital will have higher profitability ratios such as return on assets (ROA), return on equity (ROE) and net profit margin (NPM).

This paper aims to calculate the weighted average cost of capital (WACC) that represents the weighted average cost of the various long-term sources of capital for the selected companies. Also, the paper aims to calculate their profitability

ratios (ROA, ROE, NPM) and analyze obtained results to determine what kind of relationship exists between them. It is expected that companies with higher WACC will be less profitable and will have lower ROA, ROE and NPM. It is expected that between WACC on one and ROA, ROE and NPM on the other hand, there is a negative and statistically significant relationship. Besides the introduction and conclusion, this paper is structured as follows. The first section presents a brief literature review. The second section presents data and research methodology. In the third section, research results are presented.

## 2. BRIEF LITERATURE REVIEW

Momčilović and Vlaović Begović (2020) examine the relationship between WACC and profitability ratios of four companies and point out that although it is expected that companies with the lowest WACC have the highest key profitability ratios, research results show otherwise. Authors point out that it makes sense to use expensive capital sources as long as capital is used in a profitable manner.

Syed, Ghayangar and Zia (2012) point out that enterprises are motivated by profit, and that cost of capital is one of its major determinants. They apply WACC in their study and find the proportional impact of the overall cost of capital on ROE in the cement industry in Pakistan.

Some studies present a calculation of cost of equity and WACC for Serbian companies. For example, Momcilovic, Vlaovic Begovic and Zivkov (2015) show theoretical and methodological aspects of the calculation of cost of equity for the eight Serbian food industry companies on the basis of CAPM and downside CAPM models. On the other hand, Kočović, Paunović and Jovović (2016) present aspects of determining the CAPM and WACC for the oil company NIS. It should be pointed out that wast number of papers critique CAPM and recommend using alternative asset pricing models. For example, Chen, Roll and Ross (1986) suggest using a multifactor asset pricing model with macroeconomic variables. Fama and French (1992, 1993, 2015) recommend the use of the Three-factor and the Five-factor asset pricing model. Liu (2006) recommends the use of Liquidity augmented asset pricing model, while Estrada (2007) points out the usefulness of the Downside CAPM model.

Dempsey (2013) argues that CAPM, although revolutionary, has failed, and he requires the abandonment of beta. On the other hand, Benson and Faff (2013) agree that the CAPM (like all models) is, in part, wrong because it does not always conform with the market reality. They point out that CAPM is "half right", while all alternative models are completely wrong.

According to Nel's (2011) research, academia and investment practitioners agree that the CAPM is the best model for the calculation of the cost of equity. Jacobs and Shivdasani (2012) point out that in the survey conducted by the Association for financial professionals, about 90% of responders use CAPM to estimate the cost of equity. Da, Guo and Jagannathan (2012) provide support for the use of CAPM in determining the cost of capital for projects in capital budgeting decision-making. Although Partington (2013) doubts that CAPM provides a complete description of reality, he argues that the CAPM has withstood the test of time. Also, he points out that in terms of widespread use in practice and education, the CAPM is the most important asset-pricing model. Similarly, Smith and Walsh (2013) think that CAPM is still the most important asset pricing model.

Brotherson, Eades, Harris and Higgins (2013) examine the best practices in the estimation of the cost of capital of the leading corporations and financial advisers. Their survey reveals that WACC is widely accepted as the base for setting discount rates. In the cost of the equity estimation process, the area of disagreement is in the details of CAPM implementation. Their study is consistent with Bruner, Eades, Harris and Higgins (1998) study. Despite difficulties, the use of CAPM for the calculation of the cost of equity in WACC is widely spread (e.g., Partridge, 2018; Kayo, Martlance, Brunaldi & Silva, 2020).

## 2. DATA AND RESEARCH METHODOLOGY

The research sample includes all non-financial companies that constitute the basket of index Belex15 at Belgrade Stock Exchange – BSE (Table 1).

Table 1

*Selected companies from the sample*

| Name of company | TIK |
|---|---|
| Aerodrom Nikola Tesla ad Beograd | AERO |
| Alfa plam ad Vranje | ALFA |
| Energoprojekt holding ad Beograd | ENGL |
| Fintel energija ad Beograd | FIND |
| Messer Tehnogas ad Beograd | TGAS |
| Jedinstvo ad Sevojno | JESS |
| Impol Seval ad Sevojno | IMPL |
| Metalac ad Gornji Milanovac | MTLC |
| NIS ad Novi Sad | NICE |

*Note.* Author's representation.

Serbian capital market is new, small and has low liquidity. Therefore, this research is based on the rates of return of the most liquid stocks traded at BSE. Also, this research is based on monthly rates of return to reduce the problem of low liquidity further. Due to the lack of dividend data, dividends were not taken into account in calculating monthly rates of return of selected stocks. Monthly rates of return are calculated as follows:

$$r_{it} = \ln(\frac{P_{it}}{P_{it-1}})x100 \quad (1)$$

where $_{it}$ is logarithm rate of return of stock *i* for month *t*, $P_{it}$ is the closing price of the stock *i* on the last working day of the month *t*, $P_{it-1}$ is the closing price of the stock *i* on the last working day of the month that precedes month *t*.

Prices for selected stocks are taken from the BSE website (www.belex.rs) for the period from 01.01.2017. to 31.12.2020. As a proxy for a market portfolio is used index BELEXline (www.belex.rs). This index is chosen because it can be considered as highly diversified.

An average yield (from 01.01.2016. to 31.12.2020.) on 10-year maturity EU government bond (0.10%) is used as an approximation of the risk-free rate of return (https://sdw.ecb.europa.eu).

As a mature market risk premium is used as the equity risk premium for Germany (4,72%), which is taken from Damodaran's database (http://pages.stern.nyu.edu/~adamodar). The Serbian country risk premium that amounts to 3,49% is also taken from Damodaran's database (http://pages.stern.nyu.edu/~adamodar).

Data on projected EU (1.62%) and Serbian inflation rate (2,19%) are taken from the website of Statistical portal for market data (www.statista.com).

Data on number of ordinary stocks, stock price (RSD), net finance expenses (RSD), long term debt (RSD), total assets (RSD), total equity (RSD), net sales (RSD) and net income/loss (RSD) for selected companies are taken as at 31.12.2020. (as well as at 31.12.2019. for profitability ratios) from BSE website (www.belex.rs).

WACC is calculated based on the following formula: (CFA Institute, 2020, p. 79)

$$WACC = k_{es}\frac{E}{E+D} + k_{ds}\frac{D}{E+D}(1-t) \quad (2)$$

where $E$ represents the market value of equity, $D$ is the value of long term debt, $k_{es}$ is the cost of equity (in RSD terms), $k_{ds}$ is the cost of long term debt (in RSD terms) and $t$ is corporate tax rate, that amounts to 15% in Serbia.

The market value of equity ($E$) for each selected company is calculated by multiplying the numbers of stocks outstanding and the market price of one stock. Kočović et al. (2016) point out that some financial sources (as bank loans) do not have market values and that, theoretically speaking, there is no reason why market values and book values of different financial sources could not be used together. Although it is recommended to use market values of long-term financial sources, book values are used instead due to the lack of data on the market value of the selected companies' long-term debt. The cost of long term debt in RSD for selected companies is calculated on the basis of data from the latest financial statements and the following formula: (Kočović et al., 2016)

$$k_{ds} = \frac{Net\ \ finance\exp ences}{Long\ term\ debt} \tag{3}$$

The CAPM model is used for determination of cost of equity (Sharpe, 1964; Lintner, 1965; Treynor 1962; Mossin 1966). CAPM is chosen because it is still one of the simplest and the most often used asset pricing models (Nel, 2011; Jacobs & Shivdasani, 2012). According to Damodaran's recommendation, cost of equity for emerging markets is calculated as follows: (Damodaran, 2009; Damodaran, 2015, p. 98)

$$k_{eei} = r_f + \beta_i xRP + CRP \tag{4}$$

where $r_f$ is the value of risk free rate, $\beta_i$ represents beta coefficient for selected company, $RP$ is mature market risk premium and $CRP$ is country risk premium for Serbia.

Beta coefficients for each stock are calculated on the basis of linear regression:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \mu_{it},\ i = 1,2,...,T \tag{5}$$

where $r_{it}$ represents rate of return of stock $i$ for period from *t-1* to *t*, $\alpha_i$ is estimated intercept for stock $i$, $\beta_i$ is regression coefficient or beta coefficient for stock $i$, $r_{mt}$ is rate of return of market portfolio for period from *t-1* to *t*, $\mu_{it}$ represents regression residual, $n$ is the number of stocks in the sample and $T$ is number of periods in months. The application of classical linear regression is based on the assumption of normal residual distribution. This research will use regressions that have more than 30 elements, and in such cases the eventual violation of normality assumption has almost no negative effects (Brooks,

2014). Also, the possible influence of the autocorrelation and heteroskedasticity effects on the linear regression results is eliminated by using the Newey and West (1987) method when determining the regression coefficients' standard errors and p values.

Since cost of equity uses German risk free rate and a consistent equity risk premium, it is given in EUR terms. The cost of equity in RSD terms for a particular company is estimated as follows: (Damodaran, 2009)

$$k_{esi} = (1 + k_{eei}) \frac{(1 + E(i_s))}{(1 + E(i_e))} - 1 \tag{6}$$

where $E(i_s)$ is expected inflation in Serbia and $E(i_e)$ is expected inflation in EU.

Profitability ratios (ROA, ROE and NPM) for sample companies are calculated as follows: (Van Horne & Wachowicz, 2009, pp.149-150; Brealey, Stewart & Allen, 2011, pp.711-712)

$$ROA = \frac{net\ profit\ after\ taxes}{average\ total\ assets} \tag{7}$$

$$ROE = \frac{net\ profit\ after\ taxes}{average\ total\ equity} \tag{8}$$

$$NPM = \frac{net\ profit\ after\ taxes}{net\ sales} \tag{9}$$

At the end of the study, Pearson's correlation coefficients are calculated between WACC and selected profitability ratios.

## 3. RESEARCH RESULTS

Descriptive statistics of monthly realized rates of return of selected stocks and index Belexline for the period from January 2018 to December 2020 is presented in Table 2.

Table 2

*Descriptive statistics of the monthly realized rates of return (jan. 2018 – dec. 2020)*

| TIK | Mean (%) | Min. (%) | Max. (%) | St. dev. (%) | Kurtosis | Skewness |
|---|---|---|---|---|---|---|
| AERO | -1,02 | -49,47 | 17,94 | 14,07 | 5,47 | -2,16 |
| ALFA | -1,46 | -11,43 | 1,35 | 2,66 | 6,30 | -2,39 |
| ENHL | -2,55 | -19,71 | 19,85 | 8,22 | 0,57 | 0,11 |
| FINT | 0,81 | -19,66 | 8,26 | 5,01 | 11,92 | -2,82 |
| TGAS | 0,27 | -23,12 | 13,78 | 5,84 | 6,90 | -1,54 |
| JESV | 0,69 | -19,09 | 12,48 | 5,53 | 3,90 | -0,90 |
| IMPL | -0,19 | -16,09 | 14,82 | 6,15 | 1,59 | -0,24 |
| MTLC | -0,20 | -17,10 | 7,40 | 3,84 | 10,60 | -2,24 |
| NICE | -0,33 | -26,24 | 14,95 | 6,30 | 8,25 | -1,45 |
| BELEXLINE | -0,17 | -18,23 | 4,85 | 3,59 | 18,69 | -3,69 |

*Note.* Author's calculations.

Average monthly realized rates of return for most stocks and indexes are negative, which speaks about the presence of a bear market at BSE and the possible negative influence of the COVID-19 crisis. Obtained results are similar to results in the study of Momcilovic, Zivkov and Vlaovic Begovic (2017).

Emerging market's returns rates are characterized by high volatility, which is measured with a standard deviation of monthly rates of return (Bekaert & Harvey, 2002; Bekaert & Harvey, 2014; Momcilovic et al., 2017). Standard deviations of monthly realized rates of return in this study are not so high (except for stock AERO). The probable reason for that is the relatively short research period and the fact that the sample consists of the best and the most liquid stocks traded at BSE. However, obtained results are similar to the results of the Momcilovic, Zivkov and Vlaovic Begovic (2015).

Kurtosis of the monthly realized rates of returns in the analyzed period ranges from 0.57 to 18.69, which indicates that their distributions in most cases have "heavy tails". It is well known that realized rates of return usually do not have normal distribution and that is especially true in the case of emerging markets returns (Bekaert & Harvey, 2002; Bekaert & Harvey, 2014).

Table 3 shows linear regression results (calculated based on Formula 5) of the selected stock's monthly returns regressed against monthly market return rates for the period from January 2018 to December 2020.

Table 3

*Regression results - beta coefficients of selected companies*

| | a | p | β | p | $R^2$ | Adj $R^2$ |
|---|---|---|---|---|---|---|
| AERO | -0.01 | 0.78 | 2.29 | 0.00 | 0.34 | 0.32 |
| ALFA | -0.01 | 0.00 | -0.20 | 0.07 | 0.07 | 0.05 |
| ENHL | -0.02 | 0.01 | 0.95 | 0.00 | 0.17 | 0.15 |
| FINT | 0.01 | 0.06 | 0.97 | 0.00 | 0.67 | 0.65 |
| IMPL | -0.00 | 0.93 | 0.72 | 0.00 | 0.18 | 0.15 |
| JESV | 0.01 | 0.09 | 0.88 | 0.00 | 0.33 | 0.31 |
| MTLC | -0.00 | 0.79 | 0.75 | 0.00 | 0.49 | 0.48 |
| NIIS | -0.00 | 0.85 | 1.39 | 0.00 | 0.63 | 0.62 |
| TGAS | 0.00 | 0.33 | 1.18 | 0.00 | 0.53 | 0.52 |

*Note.* Author's calculation. (p-value is given after correction of standard error for the effects of autocorrelation and heteroscedasticity using the method of Newely West, 1987).

Analysis of linear regression results show that beta coefficients of sample stocks range from -0.20 (ALFA) to 2.29 (AERO). Only ALFA has a negative beta, which indicates that this stock's price moves in the opposite direction of the market. Most of the stocks have beta that range from approximately 0.7 to 1, which indicates that their prices move in the direction of the market as a whole, but are a little less volatile than the market. Three stocks (AERO, NIS, TGAS) have a beta higher than 1, which leads to the conclusion that their prices move in the same direction as the market but are more volatile than the market.

Table 4 presents results of cost of debt (calculated based on Formula 3), cost of equity (calculated based on Formula 4 and Formula 5) and WACC (calculated based on Formula 2) for selected companies.

Only three companies (ENHL, IMPL, NIIS) from the sample have a significant proportion of debt in total capital. Their cost of debt (in RSD terms) is relatively small and ranges from 2.23% (ENHL) to 5.64% (NIIS).

On the other hand, the cost of equity (in RSD terms) for the companies from the sample ranges from 3.44% (ALFA) to 17.77% (AERO), while WACC ranges from 3.45% (ALFA) to 17.77% (AERO). The average cost of equity (in RSD terms) for selected companies amounts to 10.29%, and it is lower than the average cost of equity of selected food companies (11.38%) in the study conducted by Momcilovic, Zivkov and Vlaovic Begovic (2015). Reduction in cost of equity is probably mostly caused by reduction in the country risk premium of Serbia (reduced from 6.75% to 3.49%).

Table 4

*Cost of debt, equity, and WACC for selected companies as of 31.12.2020.*

| | AERO | ALFA | ENHL | FINT | TGAS | JESV | IMPL | MTLC | NIIS |
|---|---|---|---|---|---|---|---|---|---|
| $k_d$ (%) | 0.00 | 5.35 | 2.23 | 11.12 | 0.00 | 91.83 | 3.47 | 7.02 | 5.64 |
| beta | 2.29 | -0.20 | 0.95 | 0.97 | 0.72 | 0.88 | 0.75 | 1.39 | 1.18 |
| $r_f$ (%) | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| RP (%) | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 | 4.72 |
| CRP (%) | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 | 3.49 |
| $k_{ee}$ (%) | 14.41 | 2.65 | 8.07 | 8.15 | 6.98 | 7.75 | 7.12 | 10.16 | 9.18 |
| $k_{es}$ (%) | 17.77 | 3.44 | 10.04 | 10.14 | 8.71 | 9.66 | 8.89 | 12.59 | 11.40 |
| E/(E+D) | 1.00 | 0.99 | 0.52 | 0.96 | 1.00 | 0.99 | 0.65 | 1.00 | 0.59 |
| D/(E+D) | - | 0.01 | 0.48 | 0.04 | - | 0.01 | 0.35 | - | 0.41 |
| WACC (%) | 17.77 | 3.45 | 6.11 | 10.11 | 8.71 | 10.34 | 6.79 | 12.57 | 8.69 |

*Note.* Author's calculation.

AERO achieved negative financial result in 2020, probably mainly due to the influence of the Covid-19 crisis. AERO's net losses and low performance reflect in its high systematic risk, cost of equity and WACC. In 2020, besides AERO stock, FINT and NIIS achieved net loss too, which probably influenced their relatively high cost of equity (10.14% and 11.40%).[1] It should be pointed out that MTLC has the second largest cost of equity (12.59%), due to its high beta (1.39). In 2020, the majority of MTLC net income comes from financing and a smaller part comes from its operations, but overall the company is rather profitable. The same situation is with ENHL stock. Both MTLC and ENHL have a relatively high cost of equity (12.59% and 10.04%), but ENHL managed to reduce its WACC (6.11%), due to employing a significant portion of long-term debt (that has a relatively low cost) in its capital structure. Similarly to ENHL, NIIS uses a significant proportion of long-term debt and reduces its WACC. Compared to previous studies, it can be said that obtained NIIS's WACC result in this study is similar to the result obtained in the study of Momčilović and Vlaović Begović (2020), but it is lower than the result obtained by Kočović et al. (2016), probably due to the reduction of the country risk premium for Serbia.

Table 5 shows WACC, ROA (calculated based on Formula 7), ROE (calculated based on Formula 8) and NPM (calculated based on Formula 9). As it was noted earlier, it is expected that the relationship between WACC on one and ROA,

[1] According to FINT income statements, the company had revenues only in 2019, since the IPO of its stock at BSE. Covid-19 crisis probably influenced NIIS results.

ROE and NPM on the other side is negative. This is, for example, true for AERO and FINT stock. However, stocks like MTLC and JESV have relatively high both WACC and profitability ratios. This implies that those companies use expensive sources of the capital and employ them in a profitable manner.

Table 5

*Values of WACC, ROA, ROE and NPM for selected companies*

| | **WACC (%)** | **ROA (%)** | **ROE (%)** | **NPM (%)** |
|---|---|---|---|---|
| ALFA | 3.45 | 0.58 | 0.67 | 2.26 |
| ENHL | 6.11 | 1.06 | 1.45 | 97.42 |
| IMPL | 6.79 | 0.04 | 0.09 | 0.10 |
| NIIS | 8.69 | -0.73 | -1.16 | -3.48 |
| TGAS | 8.71 | 4.95 | 4.67 | 19.91 |
| FINT | 10.11 | -1.02 | -3.99 | - |
| JESV | 10.34 | 1.99 | 5.84 | 4.18 |
| MTLC | 12.57 | 3.40 | 3.76 | 27.04 |
| AERO | 17.77 | -1.21 | -2.76 | -260.24 |

*Note.* Author's calculation.

Table 6 presents the Pearson's correlation coefficients results between WACC, ROA, ROE, and NPM.

Table 6

*Pearson's coefficients of correlation between WACC, ROA, ROE and NPM of the selected companies*

| **Probability** | **NPM** | **ROA** | **ROE** | **WATCH** |
|---|---|---|---|---|
| NPM | 1 | | | |
| | ----- | | | |
| ROA | 0,45 | 1 | | |
| | (0,23) | ----- | | |
| ROE | 0,45 | 0,87 | 1 | |
| | (0,22) | (0,00) | ----- | |
| WACC | -0,75** | -0,12 | -0,18 | 1 |
| | (0,02) | (0,77) | (0,64) | ----- |

*Note.* Author's calculation. (*,** and *** indicates statistical significance for 10%, 5% and 1%.)

Correlation results show negative and very low correlation coefficients between WACC on the one hand and ROA and ROE on the other. Obtained results are

not completely in accordance with the starting expectations, nor with the results of Syed et al. (2012), who found that in the cement industry on Pakistan market exists a negative and statistically significant relationship between WACC and ROE, which is not so in this study.

## 3. CONCLUSION

This paper aimed to determine the total cost of capital for all non-financial companies contained in the basket of BSE Belex 15 index. Also, the paper aimed to determine the relationship between selected companies' cost of capital and their major profitability ratios (ROA, ROE and NPM). Total cost of capital is used as a discount rate in the process of company valuation and in capital budgeting decision-making and top management performance evaluation. In this paper, the total cost of capital was determined based on the WACC formula as a weighted average of all costs of long-term financial sources. As an integral part of WACC, the cost of equity was calculated on the basis of the CAPM model. Although there are many asset pricing models, CAPM was selected because it is widely used and simple.

Research results indicate that the average WACC for the companies from the sample amounts to 9.39%. The highest value of WACC has AERO (17.77%) and the lowest value of WACC has ALFA (3.45%) stock. Most of WACC comes from cost of equity. It should be pointed out that those companies that use a small portion (or don't use at all) long term debt in their capital structure could reduce their WACC by increasing the portion of long term debt due to the fact that its cost is significantly lower than the cost of equity.

Obtained results indicate that between WACC and ROA and between WACC and ROE exist negative and very low correlation, which is not completely in accordance with beginning expectations. This is probably caused by the fact that some companies use expensive capital sources but employ capital profitably, and thus have high WACC and high ROA and ROE. The results also show that between WACC and NPM exist negative, high and statistically significant correlation, as expected. Since the research sample is relatively small, the study should be further extended in order to reach final conclusions.

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