

## ENHANCING INVESTMENT ATTRACTIVENESS THROUGH ESG RATINGS: A SUSTAINABLE DEVELOPMENT PERSPECTIVE IN THE BANKING, ELECTRIC UTILITIES AND IPP INDUSTRIES

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### ABSTRACT

**Objective:** Main goal of the research is to assess the level of influence of the ESG rating on the investment attractiveness of companies. The object of the study is the companies for which the ESG rating is calculated (the oil and gas, metallurgical, electric power and banking industries are observed). The hypothesis is that the management dealing with issues related to ESG should take into account the significance of the impact of the ESG rating on the investment attractiveness of companies, if the significance is proven.

**Method:** The methodological part of this research is formed by an econometric estimation of regressions based on panel data models.

**Results:** There were performed econometric assessment of the impact of the ESG rating on the investment attractiveness of companies. The results of econometric modeling are presented in the list of recommendations for ESG managers. In addition, results of the research proves the significance of COVID-19 pandemic impact on the investment attractiveness of the oil and gas companies.

**Conclusion:** The novelty of the results is in the individual econometric estimation of companies' ESG-rating impact on the investment attractiveness based on the unique set of companies, which present four different industries. Based on the sample of companies from eleven countries, for which ESG scores for the period from 2016 to 2020 were calculated, the statistical significance of ESG-factors, concerning the analysis of its impact on the indicators of investment attractiveness (ROI, EPS), was identified.

**Keywords:** ESG-rating. ROI. EPS. Banking sector. Electric Utilities & IPPs.

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## AUMENTANDO A ATRATIVIDADE DO INVESTIMENTO POR MEIO DE CLASSIFICAÇÕES ESG: UMA PERSPECTIVA DE DESENVOLVIMENTO SUSTENTÁVEL NOS SETORES BANCÁRIO, DE SERVIÇOS PÚBLICOS ELÉTRICOS E IPP

### RESUMO

**Objetivo:** O principal objetivo da pesquisa é avaliar o nível de influência do rating ESG na atratividade de investimento das empresas. O objeto do estudo são as empresas para as quais o rating ESG é calculado (são observados os setores de óleo e gás, metalúrgico, energia elétrica e bancário). A hipótese é que a gestão que trata de questões relacionadas a ESG deve levar em consideração a significância do impacto do rating ESG na atratividade de investimentos das empresas, caso a significância seja comprovada.

**Método:** A parte metodológica desta pesquisa é formada por uma estimativa econométrica de regressões baseadas em modelos de dados em painel.

**Resultados:** Foi realizada avaliação econométrica do impacto do rating ESG na atratividade de investimento das empresas. Os resultados da modelagem econométrica são apresentados na lista de recomendações para gestores ESG. Além disso, os resultados da pesquisa comprovam a importância do impacto da pandemia do COVID-19 na atratividade de investimentos das empresas de petróleo e gás.

**Conclusão:** A novidade dos resultados está na estimativa econométrica individual do impacto da classificação ESG das empresas na atratividade do investimento com base no conjunto único de empresas, que apresentam quatro setores diferentes. Com base na amostra de empresas de onze países, para as quais foram calculadas as pontuações ESG para o período de 2016 a 2020, a significância estatística dos fatores ESG, no que diz respeito à análise de seu impacto nos indicadores de atratividade do investimento (ROI, EPS), foi identificado.

**Palavras-chave:** Classificação ESG. ROI. EPS. Setor bancário. Concessionárias de energia elétrica e IPPs.



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## **MEJORAR EL ATRACTIVO DE LA INVERSIÓN A TRAVÉS DE CALIFICACIONES ESG: UNA PERSPECTIVA DE DESARROLLO SOSTENIBLE EN LAS INDUSTRIAS BANCARIA, DE SERVICIOS PÚBLICOS ELÉCTRICOS Y DE IPP**

### **RESUMEN**

**Objetivo:** El objetivo principal de la investigación es evaluar el nivel de influencia de la calificación ESG en el atractivo de inversión de las empresas. El objeto del estudio son las empresas para las cuales se calcula el rating ESG (se observan las industrias de petróleo y gas, metalúrgica, energía eléctrica y banca). La hipótesis es que la gerencia que se ocupa de cuestiones relacionadas con ESG debe tener en cuenta la importancia del impacto de la calificación ESG en el atractivo de inversión de las empresas, si se prueba la importancia.

**Método:** La parte metodológica de esta investigación está formada por una estimación econométrica de regresiones basadas en modelos de datos de panel.

**Resultados:** Se realizó una evaluación econométrica del impacto de la calificación ESG en el atractivo de inversión de las empresas. Los resultados del modelo econométrico se presentan en la lista de recomendaciones para los administradores de ESG. Además, los resultados de la investigación demuestran la importancia del impacto de la pandemia de COVID-19 en el atractivo de inversión de las empresas de petróleo y gas.

**Conclusión:** la novedad de los resultados está en la estimación econométrica individual del impacto de la calificación ESG de las empresas en el atractivo de inversión basado en el conjunto único de empresas, que presenta cuatro industrias diferentes. Con base en la muestra de empresas de once países, para las cuales se calcularon los puntajes ESG para el período de 2016 a 2020, la significancia estadística de los factores ESG, en relación con el análisis de su impacto en los indicadores de atractivo de inversión (ROI, EPS), fue identificado.

**Palabras clave:** Calificación ESG. ROI. EPS. Sector bancario. Electric Utilities & IPPs.

### **INTRODUCTION**

In recent years, ESG issues have begun to play an increasingly important role in the investment and financial analysis of companies. Companies must disclose information about environmental, social and governance policies and initiatives along with other financial information to provide this information to the company's key stakeholders.

The relevance of this article is confirmed by several surveys. For example, in the analytical work of the Chartered Financial Analyst Institute, a study was made of the need and possibility of using ESG information for making investment decisions. The results of this survey confirm the initial hypothesis that a company's ESG rating has a significant impact on investor decisions (approximately 52% of respondents answered that they use information



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about companies' ESG ratings as part of their investment analysis of activity; 11% claimed that this is the main source of information for company analysis; the remaining 37% do not use this information at all). Also, the relevance of this article is confirmed by the growing number of studies on the topic of ESG.

This article also attempts to assess the significance of the influence of ESG factors on the investment attractiveness of companies in the oil and gas sector using econometric methods. For this, ESG ratings were collected for 64 oil and gas companies from 11 countries for 2016-2020. Most of the companies represent the American market, but also companies from Russia, Brazil, Canada, Great Britain, France, Italy, Norway, Portugal, Austria and Argentina were included in the sample.

The main purpose of this article is to prove the existence and significance of the influence of the ESG rating on the investment attractiveness of companies from Banking and Electric Utilities and IPPs industries and to assess the level of this influence.

## **LITERATURE REVIEW OF RELEVANT SOURCES**

Companies disclose different issues, different portions (volumes) of financial information; some companies disclose monetary values of its ESG activities, some companies describe the events, which occurred concerning ESG-factors in the reporting period, other companies just disclose the general policy of the company speaking about ESG activities. These differences create some additional difficulties for investors, who are interested in getting full image of ESG profile of the company because of the lack of unified approach towards ESG assessment and reporting (Dorfleitner et al., 2015; Gregory, 2022).

However, considering the decision of the problem of a lack of unified approach towards ESG assessment and reporting, several financial methodological analytical agencies (such as Bloomberg, S&P Global, Refinitiv, Moody's etc.) developed certain methodologies of the companies' ESG activities estimation. After conducting a certain analysis, rating agencies provide the result of its analytical research – the companies under analysis get its ESG-rating (ESG-score), which becomes a signal and a “talking” image for financial market participants speaking about ESG factors. The organizations, which calculate ESG scores, are called ESG rating agencies. These organizations are performing a detailed analysis of different ecological, social and governance factors, which altogether constitute ESG image of companies (Principles for Responsible Investment (PRI), 2022; S&P Global, 2022).



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There are several groups of main stakeholders, which are interested in the obtaining the information about ESG scores of different companies. Firstly, as rating agencies operate and estimate ESG ratings of different companies based on principles of independence of the opinion and of the absence of personal benefits, this companies' main business processes independent estimation (including the analysis of the results of the certain practices and initiatives, not only of hypothetical targets and tools) should be useful for companies themselves. Also, the result of ESG analysis may be useful considering not only the analysis of the results of certain activities, but also regarding possible future development and improvement of ESG policies. Secondly, all investors from financial markets could use information considering ESG ratings of companies' in order to assess their sustainability. Particularly, the institutional investors (pension funds, universities, etc.) should encounter ESG information, provided by rating agencies, in the process of investment program development, as this kind of information illustrate some aspects of companies' long-term financial sustainability.

One of the most significant advantages of using ESG-scores, calculated by rating agencies, is the independence of the opinion of such organizations. As ESG scores are used mainly in investment analysis in terms of aims of different investors to invest in long-term financially stable and sustainable companies with higher and sustainable ESG-scores, it is necessary to obtain reliable information from reliable and independent sources in order to avoid non-credible information bias, which can be caused by companies' personal valuation (Apergis et al., 2022; Fender et al., 2020). The non-credibility of companies' valuation concerning ESG-scores comes not necessary from the fraud intentions; it also may come from the significant differences in methodologies of ESG factors estimation, which can be used in different companies from financial markets. The possibility of the fact that each company can assess ESG factors using its own methodology makes investment analysis of ESG-scores almost impossible, as this data becomes incomparable (Liu et al., 2021; Martins, 2022). As rating agencies develop its own methodology and assess ESG factors of different companies using unified approach, which is disclosed publicly, their opinion regarding ESG-scores of companies stands as more reliable as such organizations do not have any intention to disclose scores which doesn't suit their aims regarding financial market participants' reaction and have a common estimation model, which simplifies the investment analysis (Leong & Yang, 2020; Whelan et al., 2021).

In the article by E. Horvathova (2010, p. 58), no significant influence of ESG factors on the market value of companies was found. However, one of the possible reasons for the absence



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of such an influence may be the incorrect specification of the estimated models, since the author estimated the significance of only one factor from the ESG abbreviation. It is not entirely correct to extrapolate the conclusions obtained by researchers who studied the significance of only one ESG factor to the significance of the influence of all ESG factors on the monetary value of companies.

On the other hand, in the articles by S. Bajic and B. Burcin Yurtoglu (2016, p. 30) and A. Fatemi, I. Fooladi, H. Tehranian (2015, p. 190), the authors revealed the growing importance of the influence of ESG factors and ESG indicators of companies on their monetary value. However, all of these studies also revealed the difficulty of isolating the impact of only the ESG rating of companies from other variable valuation models that also affect the market value of companies.

However, there are studies that found a significant effect of only one or two (out of three) ESG factors. For example, Jacobs, B. W., Singhal, V. R., & Subramanian, R. (2010, p. 439), the authors revealed a sensitive reaction of the financial market to information about the environmental activities of companies (E) and a significant impact on the value of the company.

In recent years, there has been growing attention in research work, especially to the environmental factors of the ESG abbreviation. With regard to key environmental factors, one of the topics most analyzed by various researchers is the strategies of companies for decarbonization. According to the research work of A. Cheema-Fox et al. (2021), companies that disclose their carbon reduction strategies more clearly perform better financially than other companies. Another argument in favor of the significant impact of decarbonization strategies on the financial performance of companies is the article by In et al. (2019, p. 12). In this research paper, the authors determined that investors who maximized the share of companies in their portfolios that can be called “carbon efficient” and minimized the share of the opposite (“carbon inefficient”) received an average additional return of 2.5% to 5.4% per annum.

Another interesting topic regarding the relationship between ESG factors and financial performance of companies is the impact of changes in ESG ratings on financial results in crisis years. When talking about the crisis caused by the COVID-19 pandemic, which has significantly affected the economy of the whole world, economists hold different points of view. American financier J. Hale (2020) finds that in the first quarter of the financial crisis caused by the COVID-19 pandemic, "24 out of 26 ESG-focused index funds outperformed their closest more conventional counterparts", meaning that companies with higher ESG ratings had better financial performance than companies with lower ESG scores. On the other hand, in a



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study by Demmers et al. (2021, p. 460), the authors did not reveal a significant positive impact of the ESG assessment of companies on their financial performance.

## Methodology and Hypothesis

The main hypothesis is the significance of the impact of ESG-rating on the companies' investment attractiveness: null hypothesis equals a certain ESG factor from abbreviation has a significant impact on the financial performance of the company. This information should be useful for ESG management of the companies from the observable industries.

The methodological part of this research is an econometric estimation of regressions based on panel data models. As primary sources of information for econometric assessment are concerned, statistical platforms and databases of Refinitiv, Aswath Damodaran datasets (Damodaran Online, 2022) and Macrotrends (n.d.) were used for the data collection.

As the financial metrics, which would be analyzed for the potential impact of the ESG rating on the investment attractiveness are concerned, ROI and EPS are chosen. So ROI and EPS indicators will be further used as variables reflecting the investment attractiveness of companies.

Since ESG ratings are assigned to companies within a few months after the beginning of the next year after the reporting year, therefore, the impact of the rating must be assessed on the financial performance of the next year. In other words, the assignment of an ESG rating to a company in 2016 should be reflected in the financial results for 2017 due to the presence of a time lag arising from the calculations of rating agencies.

Scores are presented in panel data format, so it makes sense to evaluate the model with *Ordinary least squares (OLS)* model fixed effects, and random effects. OLS method has a key principle for regression parameters' estimation - optimization of the valuation using the minimization of the error sum of squares (ESS). In other words, this estimation technique minimizes squares of differences between the actual value of the dependent value and the predictable by the linear model values.

*Weighted ordinary least squares (WLS) model* – is a particular case of OLS. This method is used in case if the heteroskedasticity is presented in observations. Heteroskedasticity – is a violation of OLS assumption considering the consistency of variances of observations. This makes OLS estimations inconsistent, which decrease the level of validity of the valuations making it inefficient, but still unbiased. The main advantage of Weighted Least Squares is the



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applicability of this technique considering small datasets or ones, which has the inconsistent variance of random errors, which also reflects the fact of the heteroskedasticity.

*Fixed effects (FE) model* - represents the statistical model, which examines individual differences between the data indicators, which cannot be identified during preliminary analysis and with the unaided eye. Such differences are called effects. From the name of the model, it can be seen, that such effects are fixed in this statistical model, considering the assumption that these factors prevent the model from optimal estimation of the regression parameters. However, fixed effects model has some drawbacks. For example, the model doesn't encounter the variables, which are constant throughout the estimated time. If the model has variables, which provide the data about the country belonging or gender parameters, these variables will be ignored as multicollinear.

*Random effects (RE) model* - random effects model represents the statistical model, which as well, examines individual peculiarities of analyzed indicators, which cannot be identified without implementing mathematical methods. The effects in this model are called "random". The model allows to take into the consideration the peculiarities of data indicators, which appear from the certain hierarchy, based on which the data structure is built. In other words, random effects model allows to control unobserved and unidentified heterogeneity, which is not correlated with regressors.

As additional variables, the influence of which would be interesting to check in the course of econometric analysis, we added a binary variable equal to one if the company belongs to the market of a developed country, zero otherwise; as well as a binary variable equal to one for observations in 2020 (the year the COVID-19 pandemic began), zero for all other years from the time period under consideration.

Considering the list of variables, mentioned above, the certain regression equation was conducted:

$$EPS_i = \text{const} + E_i + S_i + G_i + \text{dev\_or\_emer}_i + \text{pand}_i + \varepsilon_i \quad (1)$$

where  $E_i$ ,  $S_i$ ,  $G_i$  – ESG-factors;

$\text{dev\_or\_emer}_i$  – binary variable (1 – if the company's country is developed, 0 – otherwise);

$\text{pand}_i$  – binary variable (1 – for observations of a pandemic year 2020, 0 – otherwise).

The best model (the one, which assesses the existing data with the highest quality) will be chosen using specification tests – Hausman test and Breusch-Pagan test. As the additional





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arguments in the process of the most reliable model specification identification are concerned, some statistical criteria were additionally applied: the Akaike and Schwartz criteria. Additionally, R<sup>2</sup> of all estimated models were analyzed separately, and were checked to the results of the specification tests.

The Hausman test allows to choose between Fixed effects (FE) and Random effects (RE) models. The Breusch-Pagan test allows to choose the more credible model between OLS (or WLS) and Random effects (RE) models. To choose between OLS (or WLS) and Fixed effects (FE) models the test of short-long regression may be applied.

Based on the methodology and regression equation specification, it is possible to conduct the econometric analysis. The results are disclosed by industries separately.

## Results and Discussion

As a result of econometric evaluation for the ROI variable, the author of the article chose the weighted least squares model, since this model has the highest R<sup>2</sup> value and the lowest values of the Akaike and Schwartz criteria (Table 1).

As we can see, the Fixed effects (FE) model, Governance (G) factor is statistically significant at the 1% significance level, also Social (S) factor is statistically significant at the 5% significance level. Thus, according to this model, with an increase in the G component by 1, the company's ROI will increase by an average of 0.04%, with an increase in the S component by 1, the company's ROI will increase by an average of 0.05%, Environmental (E) factor doesn't cause an impact significant for interpretation by the chosen model. Also, a binary variable pandemic turned out to be statistically significant, which means that the crisis caused by the COVID-19 pandemic influenced the investment attractiveness of banking institutions significantly (in average the decrease of ROI by 3,46% in 2020).



**Table 1.** Econometric assessment of the significance of the impact of ESG-rating on the Banking companies' ROI using panel data models\*

ROI	OLS	WLS	FE	RE
const	0.1270*** (0.0263)	0.1054*** (0.0042)	0.0597*** (0.0089)	0.1075*** (0.0270)
E	-0.0001 (0.0001)	-0.0003*** (0.0000)	-0.0001 (0.0001)	-0.0003*** (0.0000)
S	-0.0002 (0.0002)	-0.0001 (0.0000)	0.0005** (0.0002)	0.0001 (0.0002)
G	0,0001 (0.0002)	-0.0002*** (0.0000)	0.0004*** (0.0001)	0.0002* (0.0001)
dev_or_emer	-0.0267 (0.0285)	-0.0007 (0.0032)		-0.0234 (0.0279)
pandemic	-0.0331*** (0.0044)	-0.0250*** (0.0015)	-0.0346*** (0.0044)	-0.0342*** (0.0044)

Prepared by the authors based on the econometric estimation, made using Gretl software

**Table 2.** Econometric assessment of the significance of the impact of ESG-rating on the Banking companies' EPS using panel data models\*

EPS	OLS	WLS	FE	RE
const	2.839 (1.960)	1.9024*** (0.2062)	2.458*** (0.9343)	1.684 (1.712)
E	-0.0066 (0.0139)	-0.0147*** (0.0024)	-0.0324*** (0.0077)	-0.0230*** (0.0068)
S	0.0228 (0.0214)	0.0298*** (0.0030)	0.0400** (0.0190)	0.0393*** (0.0150)
G	-0.0211 (0.0148)	-0.0126*** (0.0023)	0.0038 (0.0091)	0.0002 (0.0085)
dev_or_emer	1.183 (1.102)	1.1300*** (0.1529)		0.9827 (1.244)
pandemic	-0.6397*** (0.2260)	-0.5302*** (0.0959)	-0.7884*** (0.1967)	-0.7713*** (0.1984)

\*Prepared by the authors based on the econometric estimation, made using Gretl software

According to Random effects (RE) model, as we can see from table 2., Social (S) and Environmental (E) factors are statistically significant at the 1% significance level. Thus, according to the chosen model, with an increase of the E component by 1, the company's EPS will decrease by an average of \$0.0230 per share, with an increase in the S component by 1, the company's EPS will increase by an average of \$0.0393 per share, Governance (G) factor doesn't cause an impact significant for interpretation by the chosen model. Also, a binary variable *pand* turned out to be statistically significant, which means that the crisis caused by the COVID-19 pandemic influenced the investment attractiveness of banking institutions significantly (in average the decrease of EPS by \$0.7713 per share in 2020).



In the table 3 there was presented the results of modelling of the most significant factors, which impact on Electricity and IPPs companies' ROE. According to the WLS model, Social factors (S) are statistically significant at the 5% significance level; Governance factors (G) are statistically significant at the 10% significance level. Thus, according to this model, with an increase in the G component by 1, the company's ROI will increase by an average of 0.01%, with an increase in the S component by 1, the company's ROI will decrease by an average of 0.02%. As well binary variables *pand* and *dev\_or\_emer* turned out to be statistically significant, which means that the crisis caused by the COVID-19 pandemic influenced the investment attractiveness significantly (in average the decrease of ROI by 0,49%), as well as the level of development of the company's country economy influences ROI significantly (in average the ROI for developed economies is higher for 1,99%).

According to Random effects (RE) model (see table 4), no ESG factors are statistically significant at the 1%, 5% or 10% significance level.

This means that none of the ESG components cause a significant impact on EPS of companies of Electric Utilities & IPPs industry. These findings could be explained by the low number of observable companies. However, binary variable *pand* also turned out to be statistically insignificant, which means that the crisis caused by the COVID-19 pandemic didn't influence the investment attractiveness of companies significantly. Also, binary variable *dev\_or\_emer* turned out to be statistically significant, which means that it is important to pay attention to the development of the market, while analyzing the investment attractiveness of a company (in average the EPS for developed economies is higher for \$1.4867 per share).

**Table 3.** Econometric assessment of the significance of the impact of ESG-rating on the Electric Utilities & IPP's companies' ROI using panel data models\*

ROI	OLS	WLS	FE	RE
const	0.1568*** (0.0530)	0.0563*** (0.0038)	0.2885** (0.1123)	0.1754*** (0.0624)
E	0.0002 (0.0004)	-0.0000 (0.0000)	-0.0004 (0.0009)	0.0001 (0.0004)
S	-0.0008 (0.0008)	-0.0002** (0.0000)	-0.0015 (0.0010)	-0.0008 (0.0007)
G	-0.0007 (0.0006)	0.0001* (0.0000)	-0.0020 (0.0016)	-0.0010 (0.0007)
<i>dev_or_emer</i>	-0.0206 (0.0224)	0.0200*** (0.0025)		-0.0176 (0.0230)
<i>pandemic</i>	-0.0024 (0.0153)	-0.0049*** (0.0018)	0.0035 (0.0123)	-0.0017 (0.0150)

\*Prepared by the authors based on the econometric estimation, made using Gretl software



**Table 4.** Econometric assessment of the significance of the impact of ESG-rating on the Electric Utilities & IPP's companies' EPS using panel data models.

EPS	OLS	WLS	FE	RE
const	3.027 (2.476)	0.8704*** (0.1508)	6.830* (3.830)	3.027 (2.476)
E	0.0159 (0.0208)	0.0081*** (0.0025)	0.0172 (0.0410)	0.0159 (0.0208)
S	-0.0102 (0.0250)	-0.0041** (0.0020)	0.0586 (0.0487)	-0.0102 (0.0250)
G	-0.0329 (0.0356)	-0.0066*** (0.0016)	-0.1312 (0.1132)	-0.0329 (0.0356)
dev_or_emer	1.487* (0.8189)	1.456*** (0.1040)		1.487* (0.8189)
pandemic	-2.049 (1.564)	0.0942 (0.0661)	-2.165 (1.642)	-2.049 (1.564)

As a prospect for the further researches, there are several ways to develop this scientific problem.

The first one, if there is a wide access to the scarce data about ESG ratings, the econometric analysis should be expanded as much as possible. The wider the time horizon of the observations – more sustainable the results of the econometric modelling.

The second recommendation, in case of the availability of data, the data samples for each industry may be better to be equal considering the number of observations, because in the comparison of the results between industries, it is not fully correct to compare the industries with a wide variation of a number of observations (because of the variance in the sustainability of the results).

And, thirdly, it is interesting to expand the industry analysis to as many industries, as it possible, to cover the needs of ESG management of a wider range of companies.

## CONCLUSION

The significance of ESG factors considering its impact on the financial metrics was assessed; alongside, the quantitative values of this impact are collected to the list of recommendations to the ESG managers of four observable industries. Also, ESG factors impact on the probability of companies to perform better than average company in the industry was analyzed.



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As a conclusion, we can state, that:

1. *Banking industry.* The initial hypothesis, that Social and Governance factors cause a significant impact on the financial metrics of companies was approved by the econometric estimation, as G and S factors turned out to influence ROE significantly. The initial hypothesis concerning the EPS factors was approved partially, as only Social and Environmental factors from ESG are statistically significant. Thus, based on the econometric assessment of the impact of ESG ratings of banking companies on their investment attractiveness, it can be concluded that Social and Governance factors significantly affect the investment attractiveness of companies when considered as a measure of the ROI coefficient, and if we take the EPS variable as a measure, then we observe significant influence of factors related to environmental (E) and social (S) factors.

2. *Electric Utilities & IPP's companies.* The initial hypothesis, that Environmental and Governance factors cause a significant impact on the financial metrics of companies was declined by the econometric estimation, as all ESG factors turned out to have no significant impact on ROE and EPS. So, based on the econometric assessment of the impact of ESG ratings of Electric Utilities and IPPs companies on their investment attractiveness, it can be concluded that Social and Governance factors significantly affect the investment attractiveness of companies when considered as a measure of the ROI coefficient, and if we take the EPS variable as a measure, then we observe no significant influence of ESG factors.

It was also found that a binary variable equal to one in 2020 (the year the pandemic began) significantly affects both investment attractiveness metrics for banking companies and ROI for Electric Utilities and IPPs companies, which is quite logical and confirms the adequacy of the assessment methods used.

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