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The Relationship between ESG and Financial Performance Indicators in the Public Sector: Empirical Evidence from the Republic of Serbia

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Abstract:

Research Question: This paper investigated whether a relationship exists between environmental, social and corporate governance (ESG) performance indicators and financial performance measures in the public sector. **Motivation:** Performance measurement plays a significant role in public management and public policy and could be considered to be a segment of the whole performance management process. Growing awareness of climate change, human capital and corporate governance issues have imposed the necessity of introducing environmental, social and corporate governance performance indicators (ESG) in public enterprises' annual reports. ESG performance indicators encourage investors to make socially responsible investment decisions (De Lucia, Pazienza & Bartlett, 2020). Hence, the paper is focused on the specifics of measuring performance in the public sector. Besides, it is very interesting to acquire knowledge about the correlation between ESG indicators and financial performance measures (Kalaitzoglou, Pan & Niklewski, 2020; Landau, Rochell, Klein & Zwergel, 2020). **Idea:** The purpose of the research is to highlight relevant performance measures in the public enterprises in the energy sector in the Republic of Serbia and to examine whether the application of the ESG indicators implies better financial performance**. Data:** Four large Serbian companies in the energy sector were analysed. Data were collected on the web site of the Agency for Business Registers of the Republic of Serbia. The observation period is from 2017 to 2019. The financial performance indicators are ROA, ROE and the economy ratio. Tools: Based on annual financial statements, non-financial reporting of public companies is monitored, whether companies invest in environmental and social protection, as well as whether they implement activities directed to more consistent implementation of corporate governance. The dynamics of selected financial indicators is analysed according to base and chain indices. **Findings:** The results show that the public enterprises in the energy sector of the Republic of Serbia mainly report on traditional financial measures in their annual financial statements. One of them applies all ESG indicators and the others do it partially. However, no direct and positive correlation between ESG indicators and financial performance measures could be found. Conversely, there is the case that ESG indicators have no linkage with the financial performance measures. **Contribution**: This paper contributes to the existing literature in the field of public enterprises' sustainability.

Keywords: public sector, sustainability, ESG indicators, financial performance measures.

JEL classification: M10, M21

1. Introduction

In the public sector, performance can have different dimensions such as outputs, efficiency, service outcomes, responsiveness and democratic outcomes (Boyne,2002). The performance of public organizations can be viewed from different perspectives: performance as production, performance as competencies/capacity, performance as good results and performance as sustainable results (Dubnick, 2005). In order for public organizations to function better, it is important to evaluate and analyse performance. Performance measurement encompasses several activities: defining the measurement object, defining performance indicators, data collection, data analysis, and reporting (Van Dooren, Bouckaert & Halligan, 2015, p. 32), and

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plays a key role in the public sector reform, but it goes beyond the reform itself. It plays a significant role in public management and public policy and is a segment of the performance management process. Measuring the performance of public organizations has certain specifics: process measures can also be output measures because they provide intangible products, i.e., services; outcome assesses the impact of a product or service on the defined goals of the production process and can be long-term or short-term; efficiency measures estimate the output level for a given input level, while effectiveness measures assess the level of outcome for a given level of input (Wang, 2010, p. 38-41). Growing awareness of climate change and human capital issues has shifted companies' attention to aspects other than traditional financial performance measures. Increasing attention is being paid to issues of sustainability and thus the availability of environmental, social and governance (ESG) indicators encourages investors to make socially responsible investment decisions.

Hence, the paper is focused on the specifics of measuring performance in the public sector. Specifically, the research focuses on contemporary environmental, social and governance (ESG) performance indicators and traditional financial performance measures, as well. The purpose of the research is to highlight relevant performance measures in the public enterprises in the sector of energy in the Republic of Serbia and to examine whether the ESG performance indicators imply better financial performance.

Some empirical studies analyse the impact of ESG indicators on traditional financial performance measures as well as sustainability performance. De Lucia, Pazienza & Bartlett (2020) investigated the accuracy of major financial indicators such as return on equity (ROE) and return on assets (ROA) of public enterprises in Europe based on ESG indicators and other economic metrics, as well as whether ESG initiatives affect the financial performance of European public companies and how ESG factors can contribute to advancing the ongoing debate on CSR policies and practices in Europe. Ahmad, Mobarek and Roni (2021) re-investigated the influence of ESG indicators on the financial performance of 351 UK firms in 10 industries. The authors analysed how composite ESG indicator as well as its particular dimensions impact on market value and earnings per share as corporate financial performance. They concluded that this relationship depends on firm size.

ESG performance reflects the corporate social responsibility (CSR) activities. Rajesh and Rajendran (2020) accentuated that ESG scores could be an indicator for corporate sustainability performance. The authors examined the relationship between ESG and sustainability performances. The authors found a " significant and negative moderating effect of ESG performances". In order to more successfully implement strategy and policy into practice, it is necessary to make the priority list of ESG score individual dimensions. Nguyen and Trinh (2020) point out that the companies should balance the costs and benefits of CSR activities. This is because there is a non-linear relationship between CSR activities and benefits in case of energy firms in Vietnam.

The paper starts from the following research question:

RQ: Does a relationship exist among environmental, social and corporate governance (ESG) performance indicators and financial performance measures in the public sector?

In order to test the hypothesis, a qualitative methodology was applied, based on the study and descriptive analysis of the research problem. In addition, base and chain indices are used to monitor the dynamics of financial performance measures. Accordingly, the paper first provides a theoretical overview of the correlation between ESG performance indicators and financial and market performance. Then, we carried out an empirical analysis of the performance of public enterprises in the energy sector in the Republic of Serbia from 2017 to 2019, after which relevant conclusions are drawn and future directions of research are defined.

2. Literature Review

Performance measurement plays a key role in the public sector reform (Van Dooren et al., 2015, p. 8; Bouckaert & Peters, 2002; Poister, 2003, p. 17-18; Lapsley & Wright, 2004). Growing awareness of climate change and human capital issues is shifting companies' attention to aspects other than traditional financial performance measures. Increasing attention is being paid to issues of sustainability and the availability of environmental, social and governance (ESG) indicators encourage investors to make socially responsible investment decisions (De Lucia et al., 2020). The companies that are devoted to the sustainability issues could exist longer and acquire greater market power than traditional ones. Sustainability reporting has become the necessity of companies' survival in contemporary business environment and there are a lot of discussions on sustainability reporting models - GRI, IIRC, SASB (Landrum & Ohsowski, 2018; Paun, 2018;

Shoaf, Jermakowicz & Epstein, 2018). The new Law on Accounting of the Republic of Serbia on January 1, 2020, introduced the obligation of non-financial reporting, which is in line with the Sustainable Development Goals that imply that countries should encourage large and transnational companies to integrate sustainable practice in business and include sustainability information in their reporting (Law on Accounting, 2019; Responsible Business Forum, https://odgovornoposlovanje.rs/vesti/fop/obaveza - nefinansijskog-izvestavanja-uskoro-i-za-kompanije-u-srbiji, Access date 03.11.2020). Bilbao-Terol, Arenas-Parra, Alvarez-Otero and Cañal-Fernández (2019) accentuated that corporate sustainability is imperative in a contemporary business environment. The authors accentuated that all corporations should consider both the positive and negative consequences of their corporate decisions. They integrated "CSR valuations with the financial performance in a unique measure of global sustainability performance".

Jintao, Licheng, Jiayuan, Siqin, Wadim and Streimikis (2019) examined how the concept of Corporate Social Responsibility affects the sustainability at the enterprise as well as the country levels. There was the energy sector in focus bearing in mind the importance of its economic, environmental and social impacts. The authors analysed the principal aspects of CSR activities where energy companies might give a positive impact on the sustainable energy development: decreasing the negative environmental impact, economic and social development and good governance. The authors accentuate that CSR could relieve the corruption risks in the energy sector and find that this is valid at the enterprise level.

Rongjia, Chunping and Weili (2020) investigated the differential effects of CSR dimensions on corporate financial performance across sectors in China. The authors quantified CSR efforts by corporate expenditures on CSR practices and found that the environmental dimension was in negative correlation with the "financial performance in capital-intensive manufacturing industries". The HR expenditure impacts are negative on financial performance "in the tertiary sector and resource intensive manufacturing industries". On the other hand, investments in the community are in positive correlation with the "financial performance in resource-intensive industries and other secondary sectors". Kemal and Serife (2020) considered the impact of ESG "performance on the economic performance of the Standard & Poor's 500 companies". The authors concluded that ESG model, generally, had a high impact on economic performance. However, they revealed that environmental performance had a weak relationship with the economic performance.

Saygili, Saygili and Taran (2021) examined corporate governance practices on "financial performance of Borsa Istanbul XKURY-indexed companies during 2007–2019". The authors analysed four aspects of corporate governance: "shareholders' rights, public disclosure and transparency, stakeholders' rights, and board of directors' functioning". The results showed that there was a positive correlation between stakeholder-oriented governance practices and financial performance measures, such as accounting measures for both financial and non-financial companies. Besides, shareholder protection policies have a negative impact on accounting performance measures, especially for non-financial industries, while the corporate practices that are referred to board of directors and public disclosure vary between financial and non-financial entities.

Johnson, Mans-Kemp and Erasmus (2019) examined the relationship between ESG indicators and financial performance in South Africa for 66 companies from six sectors, listed on the Johannesburg Stock Exchange between 2011 and 2016. The authors observed the significant relationships between ESG and financial performance depending on sectors. Siminica, Cristea, Sichigea, Noja and Anghel (2019) examined the correlation between the CSR dimensions – economic, environmental, social, financial performance (ROA, ROE) and corporate governance. The authors found that "CSR economic dimension had a positive impact on ROA, while CSR environmental and social dimensions have a negative impact on ROA, but corporate governance affects the financial performance measures in a positive manner".

De Lucia et al. (2020) concluded that there is a positive relationship between ESG practices and financial performance indicators, such as ROA and ROE. This becomes more apparent when companies also invest in eco-innovation, employee productivity and diversification, and equal opportunities policies. Ahmad et al. (2021) found out that total ESG indicator has a positive and significant impact on financial performance depending on firm size. Considering the firm's individual dimensions, the results are mixed. Minutolo, Kristjanpoller and Stakeley (2019) investigated how disclosure of environmental, social and governmental practice and activities of the companies reflect on financial performance such as Tobin's Q and return on assets (ROA). The authors found out that this relationship depended on the size of the company according to sales and capitalization. Small companies are forced to focus on profit more than on ESG disclosure and it was vice versa with large companies.

Hussain, Rigoni and Cavezzali (2018) analysed the sustainability reports of 100 US firms that have the best performances and found that there was a poor and contradictory correlation between sustainability performance and sub-dimensions. Liagkouras, Metaxiotis and Tsihrintzis (2020) made an algorithm in order make "socially responsible portfolios" and emphasized that investors' welfare is in a negative correlation with the environmental and social aspects of their investments. Chen-En, Wen-Min & Shiu-Wan (2019) explored the correlation between "corporate social responsibility and financial performance of the creative industry". The research result showed that CSR has a significant positive impact on the financial performance of the creative industry. Garefalakis & Augustinos (2020) pointed out that ESG indicators should be weighted since all ESG factors are not of equal importance and suggested "the specific minimum and maximum weights per ESG dimensions so we could better understand the mere complexity of such composite scores". Rajesh (2020) examined which dimension of ESG factors should be improved in developing countries, such as India. The author points out that Environmental innovation score and CSR strategy score have a significant impact on ESG performance, while Shareholders, Management and Human rights score have the lowest impact on total ESG performance, respectively. Hence, the author concluded that the companies in developing countries should improve their Governance performance in order to get better sustainability score. Fiaschi, Giuliani, Nieri and Salvati (2020) examined what might be wrong with the application of ESG factors and developed "an index of corporate misconduct in relation with the understanding of the universal human rights". Daugaard (2020) points out that there are controversial opinions about the relationship between ESG and financial performance. The author considered many other issues regarding ESG investment, such as " human element, climate change, fund flows, fixed income and the rise of non-Western player.

Kalaitzoglou, Pan and Niklewski (2020) investigated how specificities of companies affected the correlation between CSR and corporate financial performances. The authors suggested the "threshold level at which the marginal influence of CSR and financial performance become positive". Landau, Rochell, Klein and Zwergel (2020) investigated the role of integrated reporting in annual reports and accentuated the role of the reports' quality for market valuation of the companies. Grassmann (2011) investigated the interconnection between CSR activities costs and firm value. Integrated reporting on financial as well as non-financial performance was used as a moderator. Grassmann (2021) revealed that integrated reporting had a positive moderating role in the relationship between environmental costs and company value, which is not the case for social costs and company value.

Huang (2021a) considers to what extent environmental, social and governance factors impact firm value and how institutional investors could merge these factors in their decision-making. The author starts from three different perspectives: conventional financial - pointing out that ESG factors have a positive and significant impact on corporate financial performance measures; agency theory - pointing out that ESG disclosure reduces informational asymmetry between managers and shareholders and stakeholder perspective - pointing out that ESG factors have an impact on all other stakeholder decision-making. Huang (2021b) made a review and consolidated various theoretical and empirical studies referred to the correlation between ESG factors and corporate financial performance measures. Generally, the conclusion is that there is a positive and statistically significant but economically frugal interconnection. Besides, the author found out that the environmental dimension had a stronger impact on corporate financial performance than social or governance ones. Also, the correlation is stronger on operating performance than on accounting performance. On the other hand, the impact is stronger on accounting than on market performance. Huang (2021c) integrated different approaches and theories in order to conclude why profit-seeking companies perform environmental, social and governmental practices and in what relationships these ESG factors with the corporate performance are.

Kuzey, Uyar, Nizaeva and Karaman (2021) state that there is no universal answer on the question whether CSR practices impact corporate financial performance. They point out that it depends on metrics and on the sector. Buallay (2020) made a comparison between the manufacturing and the banking sectors in terms of the level of sustainability reporting and the impact of sustainability reporting on financial and market performance. The author concluded that ESG indicators have a positive impact on operational, financial and market performance in the manufacturing sector, but a negative one in the banking sector. Nguyen (2021) has found out that there is no coherence between environmental and financial performance in heavily polluting industries in China. Hence, the authors point out that there is a necessity of reporting more environmental performance, which would have significant influence on major stakeholders through making up their decisions, and what would give a positive impact on financial performance of the companies in heavily polluting industries. Kuo, Chen and Meng (2021) examined whether ESG practices in airline companies contributed to better corporate financial performance or not. The authors concluded that at the very beginning, ESG practices and financial performance were in negative correlation and later on, the relationship between ESG and financial performance gradually increased. The authors for the first time introduce airline ownership type as a moderator between ESG performance and return on assets as a corporate financial performance. Okafor, Adeleye and Adusei (2021) examined the relationship between CSR practices and corporate financial performance in U.S. tech companies. The authors revealed the positive correlation between CSR and revenue, ROA and stock value increase, but not with the Tobin's Q.

Khaled, Ali and Mohamed (2021) revealed that it is more possible that companies which have better profitability measures and size would achieve better sustainability performance. Besides, the financial leverage has a significant influence on corporate ESG performance. Hristov, Appolloni, Chirico and Cheng (2021) gave a systematic review of the possibilities and limitations of introducing the environmental dimension into the performance management system. Also, the authors developed a new and original conceptual model for introducing the environmental factors into the whole strategic management process. Seong and Cheol (2019) examined how managerial efficiency impacts on CSR outcomes. The authors emphasized that "efficient managers are more interested in improving corporate financial performances than in environmental dimension of CSR". Cho and Lee (2019) examined the relationship among "managerial efficiency, corporate social responsibility and financial performance and found, on average, managerial efficiency to be in positive correlation with a following change in corporate social performance, even though the coherence was weak at the level of total corporate social performance".

3. Research Methodology

In order to test the starting hypothesis, a sample of four large Serbian companies in the energy sector was used. Only companies with over 500 employees were taken. Data were collected on the web site of the Agency for Business Registers of the Republic of Serbia. Table 1 shows the list of large companies in the field of energy supply in the Republic of Serbia. Public companies in the field of energy have been singled out in relation to the definition of energy activity (The Energy Law (2018), https:// paragraf.rs/propisi/zakon_o_energetici.html. Date of access 03.11.2020).

Table 1: List of public companies in the field of energy in the Republic of Serbia

Ordinal numbers	Public enterprises in the energy sector
1	JP ''Elektroprivreda Srbije'' Beograd'
2	'Elektromreža Srbije'' a.d. Beograd
3	JP ''Srbija Gas'' Novi Sad
4	JP PEU ''Resavica'' Resavica

Source: Author, based on the Energy Law (2019)

Based on annual financial statements, non-financial reporting of public companies in the Republic of Serbia is monitored, i.e., whether companies invest in environmental protection (environmental indicator - E), social protection and professional development of employees (social indicator - S), as well as whether they implement activities directed to faster and more consistent implementation of corporate governance (governmental indicator - G). In order to have a better tabular overview, the companies are numbered as follows: JP "Elektroprivreda Srbije" - 1, "Elektromreža Srbije" - 2, JP " Srbija Gas " - 3 and JP PEU "Resavica " - 4. Relevant financial performance indicators were calculated on the basis of data from official correct financial statements published on the website of the Business Registers Agency (Business Registers Agency, https://www.apr.gov.rs). The observation period is three years, i.e., from 2017 to 2019. The dynamics of selected financial indicators is graphically illustrated, based on the base and chain indices. The financial performance indicators are the rate of return on the average assets value (ROA), the rate of return on the average equity value (ROE) and the economy ratio. ROA is calculated as the ratio between net profit and average assets value. ROE is calculated as the ratio between net profit and average equity value. In some companies there was no possibility to calculate ROE due to the fact that these companies in the observed years had a loss above the amount of capital due to a large loss from previous years and/or loss in the current year. The economy ratio is calculated as the ratio between total income and total expenses. The economy ratio threshold is 1.

4. Results and Discussion

Table 2 shows the representation of ESG indicators in the annual financial statements of the observed companies.

Table 2: ESG indicators in annual financial statements

ESG indicators	2017				2018				2019			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Environmental	+	+	+	+	+	+	+	+	+	+	+	+
Social	/	/	+	+	/	/	+	+	/	/	+	+
Governance	/	/	+	/	/	+	+	/	/	+	+	/

Source: Author, based on the Annual financial statements

Based on the data from Table 2, it can be concluded that all observed large public companies have invested certain funds in environmental protection in all observed years. The company JP "Srbija Gas" and JP PEU "Resavica" pay special attention to social issues. Not all companies take action to improve the public sector governance. "Elektromreža Srbije" undertook corporate governance activities in 2018 and 2019, and JP "Serbia Gas" have undertaken the same in all observed years. Only JP "Srbija Gas" reports on all ESG indicators in all years of the observed period.

Table 3 shows the financial performance indicators of the company JP "Elektroprivreda Srbije" from 2017 to 2019.

Table 3: Financial performance indicators of the company JP "Elektroprivreda Srbije" in 000 RSD

Financial performance	**2017**	**2018**	**2019**
Total income	271,283,230	276,705,270	288,482,395
Total expenses	254,931,592	269,613,265	276,635,188
Profit before tax	4,678,630	3,284,723	5,468,160
Net profit	3,396,385	1,588,784	3,662,141
Average assets value	996,077,610	984,687,721	977,805,509
Average equity value	689,461,475	682,736,703	676,122,584.5
ROA (%)	**0.34**	**0.16**	**0.37**
ROE (%)	**0.49**	**0.23**	**0.54**
Economy ratio	**1.06**	**1.03**	**1.04**

Source: Author's calculation, based on data from public correct financial statements available on the website of the Business Registers Agency, https://Date of access 03.11.2020.

Table 4 shows the dynamics of financial performance for the company JP "Elektroprivreda Srbije" from 2017 to 2019. It can be noticed that in 2018, all observed indicators decreased. In 2019, ROA increased by about 9% and ROE by about 10% compared to 2017. It is important to point out that in 2019, there was a noticeable increase in ROA and ROE, by as much as 131, or 135%, respectively, compared to the previous 2018. It is important to point out here that the observed company in its Annual financial statements reports on the environmental indicator, i.e., investment in environmental protection, but not on social and governance indicators. Thus, it is hard to make a relationship between environmental indicator and financial performance indicators.

Table 4: Financial performance dynamics for JP ''Elektroprivreda Srbije''in the period 2017-2019

Years	ROA	ROE		Economy ratio		
	BI	**CI**	**BI**	**CI**	**BI**	**CI**
2017	100	/	100	/	100	-
2018	47	47	47	47	97	97
2019	109	231	110	235	98	101

Source: Author's calculation

*BI – Base Indices; CI – Chain Indices

Table 5 shows the financial performance indicators of the company "Elektromreža Srbije" from 2017 to 2019.

Table 5: Financial performance indicators of the company "Elektromreža Srbije" in 000 RSD

Financial performance	2017	2018	2019
Total income	25,660,421	25,633,299	25,204,196
Total expenses	21,944,300	22,608,959	24,015,855
Profit before tax	3,716,121	3,024,340	1,188,341
Net profit	3,024,346	2,535,127	1,092,542
Average assets value	90,855,577	90,638,661.5	90,975,072.5
Average equity value	59,288,082.5	60,666,143.5	61,529,519
ROA (%)	**3.33**	**2.8**	**1.2**
ROE (%)	**5.10**	**4.18**	**1.78**
Economy ratio	**1.17**	**1.13**	**1.05**

Source: Based on data from public correct financial statements available on the website of the Business Registers Agency, https://Date of access 03.11.2020

Table 6 shows the dynamics of financial performance of the company "Elektromreža Srbije" from 2017 to 2019. There is a decline in all indicators in all observed years, both in relation to the base year (2017) and in relation to the previous year (chain indices). The biggest drop is in 2019, in ROA and ROE, in comparison with 2018. A slightly smaller decline is noticeable in the economy ratio. The observed company has environmental and governance performance indicators in its Annual financial statements, i.e., reports on investment in environmental protection and development of corporate governance, which did not have effects on improving financial performance in a given period. On the contrary, all financial performance indicators had been decreasing during this period. This result is not consistent with the research results of many empirical studies (Ahmad et al., 2021; De Lucia et al., 2020; Liagkouras et al., 2020; Rongjia et al., 2020; Jintao et al., 2019). However, the result is comparable with those of other studies. Kemal and Serife (2020) revealed that environmental performance had a weak relationship with the economic performance. Siminica et al. (2019) found out that ROA is in a negative correlation with the environmental and social dimensions of CSR. Hussain et al. (2018) revealed that the coherences among different dimensions of sustainability performance and sub-dimensions are quite weak and contradictory.

Table 6: Financial performance dynamics for ''Elektromreža Srbije'' from 2017 to 2019

Years	ROA		ROE		Economy ratio	
	BI	CI	BI	CI	BI	CI
2017	100	/	100	/	100	-
2018	84	84	82	82	97	97
2019	36	43	35	43	90	93

Source: Author's calculation

*BI – Base Indices; CI – Chain Indices

Table 7 shows financial performance indicators for JP "Srbija Gas" from 2017 to 2019.

Table 7: Financial performance indicators for JP "Srbija Gas" in 000 RSD

Financial performance	2017	2018	2019
Total income	88,129,179	86,520,993	95,309,437
Total expenses	61,418,917	74,042,635	86,888,294
Profit before tax	16,544,673	4,987,909	4,579,804
Net profit	16,723,376	5,812,655	4,771,689
Average asset value	131,821,149	152,061,366	186,025,570
Average equity value	Loss above the equity	Loss above the equity	118,796,637
ROA (%)	**12.67**	**3.82**	**2.57**
ROE (%)	*	*	**4.02**
Economy ratio	**1.43**	**1.17**	**1.10**

Source: Based on data from public correct financial statements available on the website of the Business Registers Agency, https://Date of access 03.11.2020

*Note: Considering that the company has a capital of 0 in 2017 and 2018 because it made a loss above the amount of capital, therefore the rate of return on capital (ROE) was not calculated.

Table 8 shows the dynamics of financial performance of the company JP "Serbia Gas" from 2017 to 2019. There is a decline in the observed indicators in all years of the observed period. A drastic decline is noticeable in ROA, by 70% compared to the base year and by 80% in 2019 compared to 2018. Due to the realized loss above the amount of capital in 2017 and 2018, it was not possible to calculate the ROE and monitor its dynamics. The economy ratio has declined, but not as drastically as ROA, however, in a slightly smaller percentage. Namely, in all years, the company is above the threshold of economy, that is, it operated economically, but that economy is getting smaller and smaller. It is important to point out that the observed company in its Annual financial statements report on all ESG indicators, but also, a positive link cannot be made between ESG indicators and financial performance. Namely, although the company made investments in environment protection, human resources welfare, corporate governance, ROA and economy ratio decreased, and ROE could not be even calculated because of a loss above the amount of capital. The results are also absolutely or partially consistent with those of other studies. Saygili et al. (2021) showed that there was a positive correlation between corporate governance practices directed toward stakeholders and financial performance measures, such as accounting measures for financial and non-financial companies. On the contrary, corporate governance practices directed toward the shareholders had a negative impact on accounting performance measures, especially for non-financial industries. Besides, corporate governance practices directed toward the board of directors and public disclosure deviate among financial and non-financial entities. Kemal and Serife (2020) found out that environmental performance does not impact so much on the economic performance. Rongjia et al. (2020) conclude that the environmental dimension was in negative correlation with the financial performance in capital-intensive manufacturing industries; social and financial performance is in a negative correlation in the tertiary sector and resource intensive manufacturing industries.

Siminica et al. (2019) found that ROA was in a negative correlation with the environmental and social dimensions of CSR; ROE was in a positive correlation with the economic and social dimensions, and corporate governance has a positive impact on financial performance. Johnson et al. (2019) concluded that there is no unified relationship between ESG and financial performance, but it depends on what sector this is about. Hussain et al. (2018) revealed poor and discordant coherence among CSR and financial performance.

Table 8: Financial performance dynamics for JP ''Srbija Gas'' in the period 2017-2019

Years	ROA		ROE		Economy ratio	
	BI	CI	BI	CI	BI	CI
2017	100	/	100	/	100	-
2018	30	30	*	*	82	82
2019	20	67	*	*	77	94

Source: Author's calculation

*BI – Base Indices; CI – Chain Indices

Table 9 shows financial performance indicators for JP PEU ''Resavica'' from 2017 to 2019.

Table 9: Financial performance indicators for JP PEU ''Resavica'' in 000 RSD

Financial performance	2017	2018	2019
Total income	6,740,328	6,718,353	6,750,736
Total expenses	9,004,738	8,859,723	8,191,338
Loss before tax	-2,245,600	-2,156,927	-1,440,602
Net loss	-2,210,940	-2,125,733	-1,452,706
Average assets value	8,406,717,5	7,442,113,5	7,322,432
Average equity value	Loss above the equity	Loss above the equity	Loss above the equity
ROA (%)	*	*	*
ROE (%)	*	*	*
Economy ratio	**0.75**	**0.75**	**0.82**

Source: Based on data from public correct financial statements available on the website of the the Business Registers Agency, https://Date of access 03.11.2020

***Note: Considering that the company has a capital of 0 in 2017 and 2018 because it made a loss above the amount of capital, therefore the rate of return on capital (ROE) was not calculated. Due to the realized net loss and loss above the amount of capital, it was not possible to calculate and monitor the dynamics of ROA and ROE. It is noticed that the ratio of economy is below the threshold of economy (that is, below 1), which means that the company did not operate economically, but economy has an upward trend.

Table 10 shows the dynamics of financial performance for the company JP PEU "Resavica" from 2017 to 2019.

Table 10: Financial performance indicators for JP PEU ''Resavica'' from 2017 to 2019

Years	ROA		ROE		Economy ratio	
	BI	CI	BI	CI	BI	CI
2017	100	/	100	/	100	-
2018	*	*	*	*	100	100
2019	*	*	*	*	114	109

Source: Author's calculation

*BI – Base Indices; CI – Chain Indices

In 2019, there was an increase of 14% compared to 2017, and in 2019 by 9% compared to 2018. The observed company reports on environmental and social indicators, which had no effect on financial performance. Namely, it was not possible even to calculate ROA and ROE because of net loss and loss above the amount of capital. Thus, we might conclude that here is no relationship between environmental and social performance indicators and financial performance measures. Such a result is comparable with the above-mentioned results of other empirical studies (Saygili et al, 2021; Kemal and Serife, 2020; Rongjia et al., 2020; Siminica et al., 2019; Johnson et al., 2019; Hussain et al., 2018).

Table 11 shows the linkage between implementation of ESG indicators and financial performance.

Table 11: ESG indicators and financial performance

JP "Elektroprivreda Srbije" Beograd

ESG INDICATORS		ROA (%)			ROE (%)			Economy ratio		
E	S	2017	2018	2019	2017	2018	2019	2017	2018	2019
+	/	0.34	0.16	0.37	0.49	0.23	0.54	1.00	1.03	1.04

Source: Author's calculation

"Elektromreža Srbije" a.d. Beograd

ESG INDICATORS		ROA (%)			ROE (%)			Economy ratio		
E	S	2017	2018	2019	2017	2018	2019	2017	2018	2019
+	/	3.33	2.8	1.2	5.10	4.18	1.78	1.17	1.13	1.05

Source: Author's calculation

JP "Srbija Gas" Novi Sad

ESG INDICATORS			ROA (%)			ROE (%)			Economy ratio		
E	S	G	2017	2018	2019	2017	2018	2019	2017	2018	2019
+	+	+	12.67	3.82	2.57	*	*	4.02	1.43	1.17	1.10

Source: Author's calculation

JP PEU "Resavica" Resavica

ESG INDICATORS			ROA (%)			ROE (%)			Economy ratio		
E	S	G	2017	2018	2019	2017	2018	2019	2017	2018	2019
+	+	/	*	*	*	*	*	*	0.75	0.75	0.82

Source: Author's calculation

Conclusion

In public enterprises, performance measurement systems serve as a catalyst for improved service quality, better program effectiveness, greater customer responsiveness, or more efficient operations. However, measuring performance is not a panacea for all problems and challenges. Many problems of public companies are not visible, at first glance they do not have simple solutions and they do not have enough resources to effectively address the problems. In addition, strategic decisions, priorities, goals and tasks are often made in difficult politicized contexts characterized by competing interests at different levels, strong personalities and abandonment of principles for the sake of some compromise. The social, economic and environmental spheres are interconnected so as to create a circular value chain of supply in the company. With this integrated strategy, companies are increasingly gaining a sustainable competitive advantage in the global market. Hence, companies that practice business sustainability can survive longer than traditional companies and can achieve greater market power.

The results of the research show that in public companies that do full or partial reporting on ESG indictors, there is no direct and positive correlation between the application of ESG indicators and financial performance. Given the strategic importance of public companies on the efficiency of the entire macro economy, an important question is how to balance the level and dynamics between investments in environmental protection, social welfare of employees and development of corporate governance, on the one hand, and financial performance, on the other. This is aimed at long-term micro and macroeconomic stability.

The research has certain limitations. *First,* there is a small sample to draw valid conclusions from and it is difficult to present general views regarding the correlation of ESG indicators and financial performance of companies. *Second*, the new Law on Accounting is in force in the Republic of Serbia from January 1, 2020, which envisages the obligation of non-financial reporting for public companies as well, so that the effects on financial performance would be observed in the future. *Third*, only certain measures of economy and profitability are selected here, but there are also indicators of liquidity and activity of the company and the like.

Therefore, it would be good to increase the sample in the future and after the next three-year period to monitor financial performance and application of ESG indicators, after which it will be possible to draw more concrete conclusions and propose measures to improve micro and macroeconomic efficiency.

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