Sustainable Corporate Performance: Interaction between Environmental, Social, Corporate Governance and Economic Indicators

Alena Kocmanová Department of Economics FBM, BUT Brno, Czech Republic kocmanova@fbm.vutbr.cz

Jana Hornungová Department of Economics FBM, BUT Brno, Czech Republic hornungova@fbm.vutbr.cz Marie Dočekalová Department of Economics FBM, BUT Brno, Czech Republic docekalova@fbm.vutbr.cz

Abstract—This paper looks at the interaction between environmental, social and governance (ESG) indicators and economic performance in relation to sustainable corporate performance (SCP) in companies from the Czech manufacturing industry. The aim of the empirical study and analysis is to test whether ESG performance indicators increase the economic performance of a company and thus lead to SCP. The interaction between ESG and economic performance indicators was tested in 79 Czech manufacturing companies with an established ISO 14 001 system. Data was acquired through empirical research in the Czech Republic, which was completed in 2011-2012. The analysis was performed using multiple linear regressions. The results show that the Czech companies in manufacturing industries do not exhibit a significant correlation between ESG performance, and economic performance.

Keywords—environmental, social, corporate governance, economic indicators; model; multiple linear regressions

I. INTRODUCTION

Sustainability is a multidimensional concept with three important dimensions: economic growth, social responsibility and environmental protection. In reality, sustainability is at the forefront for many international organisations and it is undergoing study from various aspects, including the establishment of an appropriate set of indicators. Unfortunately, a company's contribution to sustainability is still hard to measure. It can be argued that empirical research into corporate sustainability based on ESG and performance indicators is non-existent in Czech companies. Thus sustainability cannot be separated from environmental, social and economic development, and demonstrably it cannot be separated from corporate governance either, as we saw recently.

Assessment by means of financial indicators has basically zero relevance for stakeholders and therefore there arises the need to evaluate and compare companies on the basis of performance integration by creating such indicators that would inform about ESG as well as the economic performance of the company with sufficient informative value. The inclusion of ESG indicators in the integrating performance is based on further research; some of the authors [1-4] note that it is important to include ESG indicators in the strategy of the company because financial indicators do not provide accurate information on the overall performance. Therefore, we can say that the integration of ESG has currently become an investment strategy as well as a tool for future cash flow [5-8].

II. CONCEPTUAL AND THEORETICAL APPROACH

Many scholarly books and studies have been written about business performance, but in measuring sustainable performance through financial and non-financial indicators it is necessary to focus on and define Key Performance Indicators (KPIs). In terms of the specialist literature, authors [9] see the measuring of performance as the acquisition and analysis of information about the actual achievement of corporate goals and plans, and about factors that can influence the achievement of these goals. As noted by [10], performance management includes the methodology, system framework and indicators designed to assist organisations in formulating and assessing strategies to motivate staff and communicate business performance to external entities.

A. Interaction between ESG and economic performance

The interaction between corporate environmental and economic performance has been researched by many authors. A study confirming the link between carbon performance and financial performance in Australian NGER reporting companies discovered that carbon performance and financial performance are significantly negatively related in public listed companies, suggesting worse carbon performers tend to enjoy higher financial returns while stronger financial performers are more likely to pollute more and consume more energy. In private companies, no significant link between the two performances has been confirmed, which means that enhancing carbon performance does not create significant financial value [11]. He stated that even in previous studies concentrating on heavy polluting industries [12] environmental performance had a negative impact on financial performance. Other authors, [13], focused on the food industry and found a negative relationship too. A positive link between environmental and economic performance in manufacturing companies was confirmed by [14-15]. In his study he illustrated the relationship between environmental and economic performance on a curve of environmental gain. He

sees environmental gain as the isolated net economic impact of the environment on business performance [16].

Corporate environmental and social performance is associated mainly with CSR. The relationship between the environmental and social performance leading to economic benefits was studied by the authors [17]. Their study suggests that voluntary environmental and social activities, which are being introduced to improve the environmental and social performance of companies, produce CSR performance.

The relationship between the social and economic performance was also proven to be positive, which means that social involvement had a positive impact on the economic performance of the company. Most studies use short-term economic metrics, such as profit, return on equity or market price of shares, but the economic impact of social involvement could span a period that is longer than the period of these indicators [18]. The authors demonstrated that (1) across studies, corporate social performance is positively correlated with corporate financial performance, (2) the relationship tends to be bidirectional and simultaneous, (3) reputation appears to be an important mediator of the relationship, and stakeholder mismatching, sampling error, and (4) measurement error can explain between 15 % and 100 % of the cross-study variation in various subsets of CSP-CFP correlations. Corporate virtue in the form of social and, to a lesser extent, environmental responsibility is rewarding in more ways than one [19].

The authors [20] tried to establish whether there is a positive or negative relationship between corporate governance mechanisms and corporate social responsibility (CSR) contingent on satisfaction with business performance. As a point of departure they used previous research which has come under increasing criticism for combining the positive and negative dimensions of CSR [21-22]. The results indicate that effective governance has a symmetric effect on CSR and that it reduces both positive and negative CSR.

III. METHODOLOGY

The basis of the empirical research was a questionnaire prepared with the use of international sources (GRI 2006, 2011, EMAS III, IFAC, 2012, ASSET 2010, EFFAS-DVFA 2008, ISO 26000, CSR, OECD, Green Paper 2011, Czech Statistical Office 2012, and companies' financial statements). The research ran in the period 2011 and 2012 with personal visits to companies from the manufacturing industry. Companies were chosen from the database of CENIA, with introduced ISO 14001 standard and with more than 250 employees. The CENIA database accommodates in total 96 companies from the manufacturing industry with the introduced ISO 14001 standards. We gathered data from 79 companies. The determination of ESG and the economic performance indicators of these manufacturing companies were based on a questionnaire-type survey per Tab. 1.

The ESG and economic indicators were identified by a factor analysis. Partial results of research into ESG performance indicators have been published in a series of articles [23-28]. The proposed conceptual framework of ESG and the economic performance indicators correspond to

international sources such as GRI, IFAC, EFFAS-DVFA, and ASSET4. The interaction between the ESG indicators and economic performance in Czech companies from the manufacturing sector was studied by multiple regression analysis. This empirical study will examine regression coefficients that show how a dependent variable changes in response to a change in the independent variable. All calculations were analysed by the SPSS program for Windows, version 21, using a combination of different statistical methods, and regresses analyses.

TABLE I. FACTORS ESG AND ECONOMIC INDICATORS

Measurement Area	Factor Loadings for Components	Cronbach's alpha
Environmental	Investments and non- investment expenditures for environmental protection	0.959
iro	Emissions	0.777
Ew	Source consumption	0.749
	Waste	0.678
	Society	0.800
le le	Human rights	0.810
Social	Labour Practices and Decent Work	0.690
	Product Responsibility	0.590
2	Monitoring and Reporting	0.959
Corporate Governance	Corporate Governance Effectiveness	0.777
Corp Gover	Corporate Governance Structure	0.749
	Compliance	0.678
	Return on	0,980
nic	Economic results	0,922
not	Financial indicators	0,790
Economic	Cash Flow	0,650

The objective is to construct a descriptive regression model, determine the predictive ability of the established ESG performance indicators, and ascertain if the impact of these indicators on the economic performance of a company is positive or negative.

IV. RESULTS AND DISCUSSION

In our empirical study, we used the T-test to test the statistical significance of economic performance factors in relation to environmental, social and corporate governance performance factors. The T-test showed practically no statistically significant relationship between the indicators tested, there basically is no real dependence between those indicators. The Levene's F-Test for Equality of Variances, which is the most commonly used statistic, is used to test the assumption of homogeneity of variance. One advantage of this test is that it does not require normality of the data. Levene's test, unlike Bartlett's test, is robust when the normal assumption is violated [32-33].

Tab. 2 (see the Appendix 1) shows the results of a test of the influence of economic performance indicators (factor q2 F1 Performance and factor q2 F2 Economic results) on environmental (q11F1 through q11F4), social (q14F1 through q14F4) and corporate governance performance indicators (factors q29F1 through qF29 F4). Statistically significant effects, although only slightly so, were recorded in the following areas only:

- Corporate Governance Effectiveness (q29 F1), statistically significant, t (47) = 2.22, p < 0.05.
- Corporate Governance Structure (q29 F3), statistically significant, t (44) = 2.41, p < 0.05.
- Labour Practices and Decent Work (q14 F3), statistically significant, t (47) = 2.72, p < 0.05.

Tab. 3 (see the Appendix 2) shows the results of a test of the influence of economic performance indicators (factor q2 F3 Financial Indicator and factor q2 F4 Cash Flow) on environmental (factors q11F1 through q11F4), social (factors q14F1 through q14F4) and corporate governance (factors q29F1 through qF29 F4) performance indicators. Statistically significant effects, although only slightly so, were recorded in the following areas only:

- Compliance (q29 F4), statistically significant, t (47) = 2.58, p < 0.05.
- Product Responsibility (q14 F4), statistically significant, t (44) = 2.35, p < 0.05.
- Environmental investments (q11 F1), statistically significant, t (47) = 3.31, p < 0.05.

The correlation between ESG indicators and economic performance indicators, i.e. the question whether the changes in one variable are accompanied by consistent changes in the other, was studied with the aid of correlation analysis [29]. The correlation matrix contains four environmental factors, four social factors, four corporate governance factors, and four economic factors. The correlation coefficients calculated between the various dimensions are presented in Tab. 4 (see the Appendix 3). In Tab. 4 confirmed that a significant central correlation exists primarily between CG and the environmental, social and economic indicators. The CG tendency to invest in environmentally sound projects is reflected in product responsibility, in responsibility to stakeholder groups for compliance with statutory rules and regulations, insistence on ethical behaviour, submission of voluntary environmental/financial reports, including societal relations (community, allowances to municipalities). These responsibilities also stimulate the rise of financial indicators such as liquidity, debt, asset turnover, as well as cash flow. It appears that companies recognize the positive effect of CG on the environment along with the social and economic results.

Interestingly, no correlation was detected between the ESG indicators and profitability indicators (ROE, ROA, ROI, and ROS). These results suggest there is a negative relationship between the indicators. Multiple regression analysis characterizes the closeness of the dependent and independent variables. The regression tells us how ESG performance indicators affect the economic performance, and what the

specific value of that performance will be in terms of profitability, economic results, financial results and cash flow. The values of ESG indicators, based on the devised descriptive regression model, allow us to predict the level of economic performance. Thus the hypotheses in this study can be formulated as follows:

H0: Environmental, social and corporate governance (ESG) performance does not improve the economic performance of companies in the manufacturing sector.

H1: Better economic performance is conducive to better environmental, social and corporate governance (ESG) performance of companies in the manufacturing sector.

The equation to test the hypotheses is expressed by the following basic regression model:

$$EP = b_0 + b_1 ENVP + b_2 SP + b_3 CGP \tag{1}$$

The constant b_0 is the value of the dependent variable when the independent variable is zero (also called an intercept for being a point where the regression line intersects the Yaxis). Coefficients b_1 , b_2 , b_3 represent the estimated change in the mean value of the dependent variable for each unit of change in the independent variable. The independent variables in this regression equation are the following ESG factors: ENVP-Environmental Performance, SP-Social Performance, and CGP-Corporate Governance Performance. Dependent variable: EP-Economic Performance. The model was then tested using regression analysis, following a series of tests to fulfil its classic assumptions. These include tests of: autocorrelation, multicollinearity, and heteroscedacity. The hypothesis testing utilized a regression method. After processing the data in the model, the results showed the effect of ESG performance indicators as independent variables on the economic performance as a dependent variable, characterized by EPER- Economic Performance Economic Results (EAT, EBT, EBIT, Profit Margin, Turnover Size), EPFI-Economic Performance Financial Indicators (Liquidity, Debt, Asset Turnover), and EPCF-Economic Performance Cash Flow (Operating Cash Flow), which are defined and expressed in the equations of multiple regression:

$$EPER = -0.02 - 0.439 Compliance + 0.381 Society$$
 (2)

EPFI = 1.004_*E*13 + 0.395*CGEffectiveness* + 0.312*Monitoring* + 0.295*Compliance*

$$EPCF = 0.022 + 0.439 Emission - 0.338 HumanRights$$
(4)

Tab. 5 shows the result of a regression analysis with a stepwise method. The results of modelling by the Forward method show the effect of ESG indicators on each economic dependent variable (profitability, financial results, financial ratios, cash flow). As to the impact of ESG indicators on economic indicators, the study produced mixed results, only partially confirming the first hypothesis (H1).

TABLE V. REGRESSIONS ON ECONOMIC PERFORMANCE

	endent variables		Deper Returi	ndent Var	lable: q2	Faktor
		Unsta	ndardized	Standa		
			fficients	rdized		
		200		Coeffi		
				cients		
			Std.		1	
		В	Error	Beta	t	Sig.
	R Square	0.305				0
	Adjusted R	0.004				
Model	Square	-0.004				
1	Residual	27,110)			
	F	0.987				0.485
a.Depe	ndentVariable: q2	Faktor 1 I	Return on			
	ictors: (Constant),					
Society	y, q14 Faktor2 H	luman righ	its, q14 Fa	ktor3 Lał	our Prace	tices an
Decent	Work, q11 Fakto	or3 Source	consumptio	on, q29 Fa	ktor4 Co	nplianc
	aktor2 Monitoring	and report	rting , q29	Faktor3	CG Strue	
Faktor		29 Faktor		ffectivene	ss, q11	Faktor
CIIVIFO	nmental Investmen			a) Falrt	r 2 Ease	mia
		results	ntVariable	. qz rakto	n 2 Econ	onne
	(Constant)	-0.002	0.137		-0.016	0.007
	q29 F4	-0.002	0.13/	L	-0.010	0.987
		-0.439	0.141	-0.439	-3.110	0.004
Model	Compliance q14 F1					
2	g14 F1 Society	0.381	0.136	0.395	2.805	0.008
2		0.207				
	R Square	0.287				
	Adjusted R	0.249				
	Square Residual	17 750				
	F	17,759 7.462				0.002
	Г	/.402				0.002
a Dama	adamt Variables a2	Ealston 2 E.				0.002
	ndentVariable: q2				aktor 1 Sa	
	ndentVariable: q2 ctors: (Constant), c	29 Faktor	4 Complian	ce , q14 F	aktor 1 So	ciety
		29 Faktor Depende	4 Complian entVariable	ce , q14 F	aktor 1 So or 3 Finar	ciety
	ctors: (Constant), c	29 Faktor Depende indicator	4 Complian entVariable	ce , q14 F	aktor 1 Sc or 3 Finai	ciety ncial
		29 Faktor Depende indicator 1,004E	4 Complian entVariable	ce , q14 F	aktor 1 Sc or 3 Finar 0.000	ciety ncial
	(Constant), o	29 Faktor Depende indicator 1,004E -13	4 Complian entVariable rs 0.134	ce , q14 F 2: q2 Fakt	or 3 Finan 0.000	ncial 1,000
	(Constant), c (Constant) q29F1Effectiv	29 Faktor Depende indicator 1,004E	4 Complian entVariable rs	ce , q14 F	or 3 Finai	ncial 1,000
	(Constant), c (Constant) q29F1Effectiv enesst CG	29 Faktor Depende indicator 1,004E -13	4 Complian entVariable rs 0.134	ce , q14 F 2: q2 Fakt	or 3 Finan 0.000	ncial 1,000
	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2	29 Faktor Depende indicator 1,004E -13	4 Complian entVariable rs 0.134	ce , q14 F 2: q2 Fakt	or 3 Finan 0.000	ciety ncial 1,000 0.006
c. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring	29 Faktor - Depended indicator 1,004E -13 0.395	4 Complian entVariable rs 0.134 0.135	<u>ce , q14 F</u> :: q2 Fakt 0.395	or 3 Finar 0.000 2.919	ciety ncial 1,000 0.006
c. Predio Model	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4	29 Faktor - Depended indicator 1,004E -13 0.395	4 Complian entVariable rs 0.134 0.135	<u>ce , q14 F</u> :: q2 Fakt 0.395	or 3 Finar 0.000 2.919	ciety ncial 1,000 0.006 0.027
<u>c. Predi</u>	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295	4 Complian entVariable rs 0.134 0.135 0.135	ce , q14 F c: q2 Fakt 0.395 0.312	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027
<u>c. Predi</u>	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340	4 Complian entVariable rs 0.134 0.135 0.135	ce , q14 F c: q2 Fakt 0.395 0.312	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027
c. Predio Model	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295	4 Complian entVariable rs 0.134 0.135 0.135	ce , q14 F c: q2 Fakt 0.395 0.312	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027
c. Predio Model	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285	4 Complian entVariable rs 0.134 0.135 0.135	ce , q14 F c: q2 Fakt 0.395 0.312	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027
<u>c. Predi</u>	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110	4 Complian entVariable rs 0.134 0.135 0.135	ce , q14 F c: q2 Fakt 0.395 0.312	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027 0.036
<u>c. Predi</u> Model 3	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190	4 Complian entVariable rs 0.134 0.135 0.135 0.135	ce, q14 F 27 q2 Fakt 0.395 0.312 0.295	0.000 2.919 2.304	ciety ncial 1,000 0.006 0.027 0.036
c. Predic Model 3 a. Deper	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi	4 Complian entVariable rs 0.134 0.135 0.135 0.135	ce, q14 F 2 Fakt 0.395 0.312 0.295 cators	0.000 2.919 2.304 2.177	ciety ncial 1,000 0.006 0.027 0.036
c. Predic Model 3 a. Depee d. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), c	29 Faktor Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135	ce, q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c	0.000 2.919 2.304 2.177	ciety ncial 1,000 0.006 0.027 0.036
c. Predic Model 3 a. Deper d. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor q29 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135	ce, q14 F 27 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance	0.000 2.919 2.304 2.177 29 Faktor	nciety 1,000 0.006 0.027 0.036 0.036 0.002* 2
c. Predic Model 3 a. Deper d. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), c ing and reporting	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor q29 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135	ce, q14 F 27 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance	0.000 2.919 2.304 2.177 29 Faktor	nciety 1,000 0.006 0.027 0.036 0.036 0.002* 2
c. Predic Model 3 a. Deper d. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), c	29 Faktor Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 129 Faktor 0.22 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c nnce :: q2 Fakt	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153	ciety ncial 1,000 0.006 0.027 0.036 0.002 ^o 2 Flow 0.879
c. Predic Model 3 a. Deper d. Predi	(Constant), c (Constant) (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F MontVariable: q2 ctors: (Constant), c ing and reporting (Constant)	29 Faktor Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 029 Faktor 029 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135	ce, q14 F 27 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash	ciety ncial 1,000 0.006 0.027 0.036 0.002 ^o 2 Flow 0.879
a. Deper Model 3 a. Deper d. Predi Monitor	(Constant), c (Constant) (Constant) (29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), c ing and reporting (Constant) q11F5 Emissions	29 Faktor Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 129 Faktor 0.29 Faktor 0.20 Fakt	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	nciety 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.005
a. Deper d. Predi Monitor	(Constant), c (Constant) (Constant) q29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), c ing and reporting (Constant) q11 F5	29 Faktor Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 129 Faktor 0.22 Faktor	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c nnce :: q2 Fakt	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153	nciety 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.005
a. Deper d. Predi Monitor	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F ndentVariable: q2 ctors: (Constant), ring and reporting (Constant) q11F5 Emissions q14F2 Human rights	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 0.022 0.439 -0.338	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	nciety 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.005
a. Deper d. Predi Monitor	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F mdentVariable: q2 ctors: (Constant), q11F5 Emissions q14F2 Human rights R Square	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 0.22 0.439 -0.338 0.235	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	nciety 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.005
a. Deper d. Predi Monitor	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F mdentVariable: q2 ctors: (Constant), q11F5 Emissions q14F2 Human rights R Square Adjusted R	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 0.022 0.439 -0.338	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	nciety 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.005
c. Predic Model 3 a. Depee d. Predi	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F mdentVariable: q2 ctors: (Constant), q11F5 Emissions q14F2 Human rights R Square Adjusted R Square	29 Faktor - Depende indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor Depende 0.022 0.439 -0.338 0.235 0.194	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	ciety ncial 1,000 0.006 0.027 0.036 0.002' 2 Flow
a. Deper d. Predi Monitor	(Constant), c (Constant) (Constant) (29F1Effectiv enesst CG q29 F2 Monitoring q29 F4 Compliance R Square Adjusted R Square Residual F mdentVariable: q2 ctors: (Constant), q11 F5 Emissions q14F2 Human rights R Square Adjusted R Square Adjusted R Square Adjusted R Square	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 0.295 0.439 -0.338 0.235 0.194 27,110	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.148	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	ciety ncial 1,000 0.006 0.027 0.036 0.002 2 Flow 0.879 0.002
a. Deper d. Predi Monitor Model 4	(Constant), c (Constant) q29F1Effectiv enesst CG q29F2 Monitoring q29F4 Compliance R Square Adjusted R Square Residual F mdentVariable: q2 ctors: (Constant), q11F5 Emissions q14F2 Human rights R Square Adjusted R Square	29 Faktor Depender indicator 1,004E -13 0.395 0.312 0.295 0.340 0.285 27,110 6.190 Faktor 3 Fi 29 Faktor 0.22 0.439 -0.338 0.235 0.194 27,110 5.690	4 Complian entVariable rs 0.134 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.142 0.142 0.148 0.141	ce , q14 F 2 q2 Fakt 0.395 0.312 0.295 cators tiveness, c ance c q2 Fakt 0.444	0.000 2.919 2.304 2.177 29 Faktor or 4 Cash 0.153 2.958	ciety ncial 1,000 0.006 0.027 0.036 0.036 0.002 2 Flow 0.879 0.002

ESG performance indicators (*Model 1*) do not affect profitability (EPR- Economic Performance Return on), having

the adjusted R² value of -0.004. This may be attributable to the fact that Czech companies still do not realize that the profitability of a socially responsible enterprise benefits from minimizing its environmental impact, or that CG is not applied in any meaningful way. These companies may have adopted ISO 14 001, but view it only as a competitive necessity. Nevertheless, ESG performance indicators (Model 2) explained 24.9 % ($R^2 = 0.249$) of variation in economic results (EPER). The variables Compliance, and Company are associated with economic results (EAT, EBT, EBIT, Profit margin, Turnover size). The most prominent was the influence of ESG performance indicators (Model 3) on financial indicators (EPFI). It explained 28.5 % ($R^2 = 0.285$) of variation in financial indicators, meaning that 28.5 % of it is due to variables CG Effectiveness, Monitoring, and Compliance. The remaining 71.5 % must be accounted for by other variables. The most influential is the CG effectiveness variable (0.395).

The higher the level of CG effectiveness, the higher is the financial indicators. The same is true for the monitoring effect (0.312) and compliance (0.295). The impact on the financial indicators in the area of corporate governance indicators is entirely predictable, due to the fact that CG emphasizes the monitoring of liquidity, debt, and asset turnover. Cash flow (*Model 4*) is the least affected by ESG performance indicators. The adjusted R² value of 0.194 for cash flow variation (EPCF) means that the variation is 19.4 % due to variables Emission (0.439), Human Rights (-0.338), all being statistically significant (Sig. < 0.05).

The first hypothesis states that ESG indicators, as independent variables, improve economic performance. The results of the statistical tests make it clear that ESG indicators, as independent variables, have little effect on performance in terms of economic results, financial indicators and cash flow, and no effect on profitability. Therefore, the first hypothesis (*H1*) cannot be confirmed. The results of this study are consistent with the research of [11], [13], [30], [21-22] and [30], whose findings show that environmental, social and corporate governance performance indicators do not have a significant impact on economic performance.

V. CONCLUSIONS

Environmental performance indicators in the context of an Environmental Management Systems (EMS and EMAS) of the organisation should be address primarily those organisation's environmental impacts that are most significant and which the company can influence by its operations, management, activities, products and services to environment and sustainable growth. They should fulfil the dual purpose of as-siting the management of the organisation and providing information to stakeholders [28]. Corporate environmental (sustainable) reporting is the part of organisation's environmental communication that is directed from the organisation to various target groups. Nowadays corporate environmental reporting has evolved to sustainability reporting, which covers a wider area of the organisation's performance also including economic and social aspects [30]. This empirical study examines the relationship between ESG performance indicators and economic performance in Czech

companies within the manufacturing sector. Theoretical considerations suggest that the environmental and social performance have a positive effect, as asserted by authors [14], [17], [19] and [31], but also a negative impact on the company's economic success, per [11-12].

This empirical study therefore focuses on the link between the ESG performance indicators and economic indicators (profitability, financial results, financial ratios and cash flow) in companies active in the manufacturing sector during the period 2011-2012, T-test by means of correlation analysis. The T-test of the influence of economic performance on ESG performance indicators yielded no statistically significant results.

The correlation results support the conclusion that there exists a positive correlation between CG and the environment, social responsibility and economic performance. Conversely, no link was found between the ESG indicators and profitability (ROE, ROA, ROI, and ROS). This multiple regression analysis did not find a significant correlation between ESG indicators and economic indicators in the companies from the manufacturing sector. The hypothesis that better economic performance brings about better ESG performance in these companies has to be rejected due to inconclusive results. The results indicate that Czech companies have not discovered the connection between ESG indicators and economic indicators. A future study could possibly refine these results by focusing not only on the companies with ISO 14 001, but also on those that monitor and report the financial - and especially non-financial indicators, for example according to GRI, or which publish CSR reports. This could explain in part why the study did not provide an unequivocal confirmation of positive results.

ACKNOWLEDGMENT

This paper is supported by The Czech Science Foundation. Name of the Project: Construction of Methods for Multifactor Assessment of Company Complex Performance in Selected Sectors. Reg. Nr. P403/11/2085.

REFERENCES

- C. Kruse, and S. Lundbergh, "The governance of corporate sustainability," Rotman International Journal of Pension Management, vol. 3, pp. 46-51, 2010.
- [2] M. Maletič, D. Maletič and B. Gomišček, "An organizational sustainability performance measurement framework," In. R.A.R. Ramos, I. Straupe and T. Panagopoulos (eds.) Recent Researches in Environment, Energy Systems and Sustainability, WSEAS Press, 2012, pp. 220-225.
- [3] J. Hřebíček, M. Hodinka, O. popelka, M. Štencl, O. Trenz, "Sustainability indicators evaluation and reporting: case study for building and construction sector," In N. Altawell, K. Volkov, C. Matos and P.F. de Arroyabe (eds.) Recent Researches in Environmental and Geological Sciences, WSEAS Press, 2012, pp. 305-312.
- [4] A. Kocmanová, I. Šimberová and P. Němeček, "Construction of the social performance indicators for the determination of performance of ESG-indicators to support the decision- making," In D. Pavelkova, J. Strouhal and M. Pasekova (eds.) Advances in Finance and Accounting WSEAS Press, 2012, pp. 233-239.
- [5] M. Matei, C. Popescu and I.G. Radulescu, "The climate change related products and social responsible investment," N. Mastorakis, V. Mladenov and J. Savkovic-Stevanovic (eds.) Recent Researches in

Sociology, Financing, Environment and Health Sciences, WSEAS Press, 2011, pp. 132-137.

- [6] A. Bassen, and A.M. Kovacs, "Environmental, social and governance key performance indicators from a capital market perspective," Zeitschrift für Wirtschafts und Unternehmensethik, vol. 9, pp. 182–192, 2008.
- [7] C. Greenwald, "The importance of consistent and comparable ESG performance data," http://www.asset4.com/pdf/ASSET4-Theimportance-of-consistent-and-comparable-ESG-performance-data.pdf
- [8] H. Garz, F. Schnella, and R. Frank, "KPIs for ESG," http://www.dvfa.de/files/die_dvfa/kommissionen/non_financials/applica tion/pdf/KPIs_ESG_FINAL.pdf
- [9] I. Drongelen, J. Bilderbeek, and V. Kersens, "R&D performance measurement: More than choosing a set of metrics," R&D Management, vol. 29, pp. 35-46, 1999.
- [10] B. Marr, and C. Adams, "The Balanced Scorecard and intangible assets: similar ideas, unaligned concepts," Measuring Business Excellence, vol. 8, pp. 18-27, 2004.
- [11] W. Qian, "Revisiting the link between environmental performance and financial performance: who cares about private companies?" [11th A-CSEAR Conference. UOW's Social Accounting and Accountability Research Centre (SAARC) and the School of Accounting and Finance, Australie, 2012]
- [12] M. Wagner, "How to reconcile environmental and economic performance to improve corporate sustainability: corporate environmental strategies in the European paper industry," Journal of Environmental Management, vol. 76, pp. 105-118, 2005.
- [13] J. Aragon-Correa, and E. Rubio-Lopez, "Proactive corporate environmental strategies: Myths and misunderstandings," Long Range Planning, vol. 40, pp. 357-381. 2007.
- [14] A.A. King, and M.J. Lenox, "Does it really pay to be green? An empirical study of firm environmental and financial performance," Journal of Industrial Ecology, vol. 5, pp. 105-116, 2001.
- [15] B. Menguc, and L. Ozanne, "Challenges of the green imperative: A natural resource-based approach to the environmental orientationbusiness performance relationship," Journal of Business Research, vol. 58, pp. 430-438, 2005.
- [16] L. Lankoski, "Environmental performance and economic performance. The basic links" in Managing the Business Case for Sustainability S Schaltegger and M. Wagner, Eds. Greenleaf Publishing, 2006, pp. 29-46.
- [17] S. Schaltegger, and M. Wagner, "Managing sustainability performance measurement and reporting in an integrated manner," in Sustainability Accounting and Reporting, vol. 21, S. Schaltegger, M.D. Bennett, and R. L. Burritt, Eds. Dordrecht: Springer, 2006, pp. 681-697.
- [18] K.E. Aupperle, A. Carroll, and J.D. Hatfield, "An empirical examination of the relationship between corporate social responsibility and profitability," Academy of Management Journal, vol. 28, pp. 446-463, 1985.
- [19] M. Orlitzky, L. Frank, S. Schmidt, and L. Rynes, "Corporate social and financial performance: A meta-analysis," Organization Studies, vol. 24, pp. 403-441, 2003.
- [20] A. Punit, and D. Ravi, "Corporate governance and corporate social responsibility (CSR): The moderating roles of attainment discrepancy and organization slack corporate governance," An International Review, vol. 19, pp. 136-152, 2011.
- [21] P.C. Godfrey, C.B. Merrill, and J.M. Hansen, "The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis," Strategic Management Journal, vol. 30, pp. 425-445, 2009.
- [22] A. Kacperczyk, "With greater power comes greater responsibility? Takeover protection and corporate attention to stakeholders," Strategic Management Journal, vol. 30, 261-285, 2009.
- [23] A. Kocmanová, and P. Němeček, "Economic, environmental and social issues and corporate governance in relation to measurement of company performance," In: [Liberec Economic Forum 2009, Liberec: Technická univerzita v Liberci, pp.177-187, 2009]

- [24] A. Kocmanová, M. Dohnal, and T. Meluzin, "Qualitative simple equationless models as simple integrators of vague sustainability knowledge items," Transformations in Business&Economics, vol. 11, pp. 187-196, 2011.
- [25] A. Kocmanová, and I. Šimberová, "Modelling of corporate governance performance indicators," Engineering Economics, vol. 3, pp. 485-495, 2012.
- [26] A. Kocmanová, Z. Karpíšek, and M. Klímková, "The Construction of environmental indicators for determination of performance of ESG indicators to support decision-making of investors," Business: Theory and Practice, vol. 13, pp. 333-342, 2012.
- [27] J. Hřebíček, O. Popelka, M. Štencl, and. O. Trenz, "Corporate performance indicators for agriculture and food processing sector," Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, vol. LX, pp. 121-132, 2012.
- [28] J. Hřebíček, and J. Soukopová, Voluntary Company Assessment Report on the Linkages between Environment, Economy and Society (in Czech). Praha: Ministry of Environment of the Czech Republic, 2008.
- [29] D. De Vaus, "Analysing Social Science Data. 50 Key Problems in Data Analysis," London: SAGE Publications, 2002.
- [30] J. Hřebíček, J. Soukopová, and E. Kutová, "Standardization of key performance indicators for environmental management and reporting in the Czech Republic," International Journal of Energy and Environment, vol. 4, pp 169-176, 2010.
- [31] S. Chiu, and M.P. Sharfman, "Legitimacy, visibility, and the antecedents of corporate social performance: An investigation of instrumental perspective," Journal of Management, vol. 19, pp. 1558-1585, 2009.
- [32] A. Field, "Discovering statistics using SPSS". London: SAGE, pp. 324, 2009.
- [33] M.Meloun, J.Militký, "Kompendium statistického zpracování dat: metody a řešené úlohy včetně CD". Praha: Academia, pp. 764, 2002.

Ŧ	•	-	
	Ì		
Ĩ	ŝ	ļ	
	ŝ	5	
	2	C	

Variables Levens' Tate for Meanity of Yariances Levens' Tate for Texens' Fact for F Levens' Tate for Meanity of Yariances Texens' Fact for F Paradine F Paradin				q2 F 1 I	q2 F 1 Return on	1			q2 F 2 Ec	q2 F 2 Economic result	sult	
MEAN Pair Pair Pair Pair Pair Pair Pair Pair Pair			Levene's	Test for	T-tes	t for Equ	ality of	Levene's	Test for	- 1 1 2 1 L	. T	Jan Stranger
FP-valuetdf P^{-value} FSig.t df' P^{-u} EQVA*0.9320.3392.218 df' f_{-2-ud1} FSig.t df' P^{-u} EQVA*0.9320.3392.21819.0760.0634.5120.039-14667EQVA*2.3460.1320.541 477 0.5911.5650.217-0.612 471 EQVA*3.5560.0660.445 477 0.5911.5650.217-0.612 471 EQVA*3.5560.0660.445 477 0.5911.5650.217-0.612 471 EQVA*3.5560.0660.445 547 0.7230.4342.495 471 7234 471 EQVA*2.6940.1071.3880.1720.4920.4860.352 417 7234 471 EQVA*2.6940.1070.1080.1720.4920.486 0.357 471 7234 471 EQVA*1.2320.7411.2320.4440.1080.541 0.166 5.384 0.167 741 44 EQVA*0.1640.2371.232 441 766 7236 1.237 441 EQVA*0.1640.1810.5470.146 5.384 0.026 2.718 341 EQVA*0.1640.1612.16770.642 7.77 6.776 7.76 7.76 EQVA*0.1640.16	Variables		Equality of	variances		Means		Equality of	variances	I -test 101	r Equalit	yot Means
EQVA* 0.932 0.339 2.218 47 0.031 4.512 0.039 1.867 47 EQVA* 2.346 0.132 1.977 19076 0.065 0.211 -0.612 47 EQVA* 2.346 0.132 0.530 0.521 0.521 0.512 0.512 47 EQVA* 3.356 0.0166 0.442 2.632 0.0622 0.622 0.733 0.434 2.329 11026 EQVA* 3.356 0.017 1.388 47 0.723 0.492 0.436 0.154 47 EQVA* 2.694 0.107 1.381 47 0.723 0.492 0.187 47 EQVA* 2.694 0.107 1.381 47 0.723 0.432 0.187 47 EQVA* 2.694 0.107 1.381 47 0.723 0.432 0.187 47 EQVA* 1.232 0.142 0.723 0.186 0.357 0.187 44 EQVA* 1.232 0.273 1.221 4.4 0.966 5.344 0.173 13.917 EQVA* 1.232 0.241 0.142 0.542 0.166 0.167 44 EQVA* 0.012 0.911 1.927 29.941 0.144 0.661 44 EQVA* 0.012 0.912 0.921 0.924 0.924 0.766 0.536 0.747 44 EQVA* 0.012 0.912 0.941 0.144			F	P -value	t	df	P-value. (2-tail.)	F	Sig.	t	df	P-value. (2-tail.)
EQVNA**EQVNA**1.95719.0760.0650.050.0530.0510.1409.514EQVNA**2.3460.1320.541 47 0.5911.5650.2170.0612 47 EQVNA**3.5560.0660.4450.4320.6230.6230.6330.6520.73EQVNA**3.5560.0660.4450.1320.50110.6970.7330.55210.339EQVNA**3.5560.0060.4471.381 47 0.1720.4920.4860.154 47 EQVNA**2.6940.1071.381 47 0.1720.4920.4860.17313.729EQVNA**2.6940.1071.381 47 0.2050.4860.3520.187 44 EQVNA**1.2320.2131.381 44 0.2070.8860.3520.187 44 EQVNA**1.2320.2131.381 0.541 0.195 0.163 1.391 44 EQVNA**1.2320.2140.1440.296 5.384 0.026 0.681 13.917 EQVNA**0.0120.9120.9432.54910.144 0.256 0.534 0.716 0.718 3.739 EQVNA**0.0120.9120.9130.9410.144 0.956 0.756 0.718 3.738 EQVNA**0.0130.9111.8892.5200.966 5.384 0.756 0.766 1.576 EQVA*0.0130	q29 F 1 CG effectiveness	EQVA*	0.932	0.339	2.218	47	0.031	4.512	0.039	-1.867	47	0.068
EQVA* 2.346 0.132 0.541 47 0.501 1.565 0.217 0.612 47 EQVA** 2.3556 0.066 0.445 47 0.623 0.623 0.624 1.039 EQVA** 3.556 0.066 0.445 47 0.659 0.623 0.434 2.405 EQVA** 2.694 0.107 1.381 0.0723 0.623 0.434 2.229 11.026 EQVA** 2.694 0.107 1.647 3.597 0.102 0.492 0.187 447 EQVA* 2.694 0.107 0.128 0.492 0.466 0.187 44 EQVA* 4.205 0.046 1.281 44 0.207 0.886 0.352 0.187 44 EQVA* 4.205 0.046 1.281 44 0.207 0.886 0.352 0.187 44 EQVA* 1.232 0.045 1.281 0.440 0.542 0.466 0.617 44 EQVA* 1.232 0.045 1.281 0.440 0.542 0.661 0.661 0.576 EQVA* 0.012 0.045 1.232 0.045 0.046 0.141 0.767 0.166 EQVA* 0.012 0.045 0.144 0.576 0.006 0.617 44 EQVA* 0.016 0.612 0.642 0.661 0.617 44 EQVA* 0.016 0.612 0.046 0.617 0.686 1.567 <t< td=""><td></td><td>EQVNA**</td><td></td><td></td><td>1.957</td><td>19.076</td><td>0.065</td><td></td><td></td><td>-1.409</td><td>9.514</td><td>0.191</td></t<>		EQVNA**			1.957	19.076	0.065			-1.409	9.514	0.191
EQVNA**EQVNA** 0.550 0.653 0.623 0.623 0.524 10.339 EQVA* 3.556 0.066 0.445 47 0.659 0.623 0.434 2.405 47 EQVA* 3.556 0.066 0.445 47 0.539 0.623 0.434 2.405 47 EQVA* 2.694 0.107 -1.388 477 0.172 0.492 0.134 2.209 1.026 EQVA* 2.694 0.107 -1.388 477 0.122 0.432 0.172 1.3729 47 EQVA* 1.203 0.046 1.281 1.647 3.597 0.186 0.177 44 EQVA* 1.232 0.273 1.322 0.144 0.192 0.661 0.681 44 EQVA* 0.012 0.912 0.943 44 0.193 0.542 0.661 1.570 EQVA* 0.012 0.912 0.943 24.767 0.964 5.384 0.025 1.596 44 EQVA* 0.013 0.911 1.502 0.944 0.747 0.681 1.573 EQVA* 0.013 0.911 1.889 51 0.767 0.766 1.573 EQVA* 0.013 0.911 0.944 0.027 0.747 44 EQVA* 0.013 0.911 0.964 0.717 0.766 1.573 EQVA* 0.013 0.911 0.964 0.027 0.747 44 EQVA* <t< td=""><td>q29 F 2 Monitoring and</td><td>EQVA*</td><td>2.346</td><td>0.132</td><td>0.541</td><td>47</td><td>0.591</td><td>1.565</td><td>0.217</td><td>-0.612</td><td>47</td><td>0.544</td></t<>	q29 F 2 Monitoring and	EQVA*	2.346	0.132	0.541	47	0.591	1.565	0.217	-0.612	47	0.544
EQVA* 3.556 0.066 0.445 47 0.659 0.623 0.434 2.405 47 47 EQVA* 2.094 0.107 1.388 47 0.172 0.723 0.434 2.405 47 47 EQVA* 2.694 0.107 1.388 47 0.172 0.132 0.132 1.026 EQVA* 2.694 0.107 1.388 44 0.207 0.986 0.167 47 EQVA* 1.202 0.044 1.281 44 0.207 0.886 0.167 44 EQVA* 1.232 0.273 1.281 44 0.207 0.886 0.167 44 EQVA* 1.232 0.273 1.281 44 0.207 0.886 0.167 44 EQVA* 0.012 0.912 0.943 44 0.207 0.886 0.617 44 EQVA* 0.012 0.912 0.943 44 0.207 0.964 0.747 44 EQVA* 0.012 0.912 0.943 44 0.766 0.747 44 EQVA* 0.013 0.911 1.892 24767 0.964 0.727 0.747 44 EQVA* 0.164 0.661 2.767 0.964 0.726 0.747 44 EQVA* 0.013 0.914 0.661 2.761 0.964 0.747 44 EQVA* 0.011 0.681 0.771 0.716 0.716 0.766 1747 <	reporting	EQVNA**			0.500	20.632	0.622			-0.524	10.339	0.611
EQVNA** 0.361 16.907 0.723 0.723 0.172 0.172 0.173 11.026 EQVNA** 2.694 0.107 -1.388 47 0.172 0.492 0.154 47 EQVNA** 2.694 0.107 -1.388 47 0.172 0.492 0.173 13.729 EQVNA** 4.205 0.046 1.281 44 0.207 0.187 47 47 EQVNA** 4.205 0.046 1.281 44 0.207 0.187 47 47 EQVNA** 1.232 0.046 1.281 0.440 0.295 0.187 44 EQVNA** 1.232 0.441 0.296 5.384 0.025 1.996 44 EQVNA** 0.101 1.502 29491 0.144 0.966 5.384 0.025 1.596 44 EQVNA** 0.106 0.913 0.446 0.661 1.570 0.766 1.573 41 EQVNA** 0.0	q29 F 3 CG structure	EQVA*	3.556	0.066	-0.445	47	0.659	0.623	0.434	2.405	47	0.020
EQVA* 2.694 0.107 1.388 47 0.172 0.492 0.486 0.154 47 47 EQVA** -1.647 35.997 0.108 -0.173 13.729 -0.173 13.729 EQVA* -1.232 0.046 1.281 -44 0.207 0.886 0.352 -0.187 44 EQVA* -1.232 0.046 1.281 -44 0.207 0.108 -0.167 -0.167 -0.169 EQVA* -1.232 0.073 1.222 -44 0.296 -5.384 0.067 -0.169 -0.681 EQVA* -0.012 0.012 0.043 -44 0.966 5.384 0.027 -44 EQVA* 0.012 0.012 0.043 -47 -0.681 -3.681 -47 EQVA* 0.013 0.911 1.802 2.4701 0.026 -0.574 -0.681 -47 EQVA* 0.013 0.911 1.802 2.027 0.026 -0.574 -0.681 -47 EQVA* 0.013 0.911 1.802 2.020 0.054 -0.026 -0.766 -0.767 -0.767 EQVA* 0.013 0.911 1.802 2.012 -0.026 -0.571 -0.681 -0.681 EQVA* 0.013 0.911 0.869 -0.771 -0.761 -0.766 -0.766 -0.767 EQVA* 0.013 0.911 0.914 -0.681 -0.761 -0.681 -0.761 EQVA*<		EQVNA**			-0.361	16.907	0.723			2.229	11.026	0.048
EQVNA** $= 0.013$ $= 1.647$ 35.97 0.108 0.016 0.0173 13.729 13.729 EQVA* 4.205 0.046 1.281 44 0.207 0.886 0.352 0.187 44 EQVA* $= 1.080$ 1.281 1.080 16.440 0.296 0.352 0.187 44 EQVA* $= 1.022$ 1.020 1.020 0.966 0.617 0.46 0.617 44 EQVA* $= 1.023$ 0.023 1.322 44 0.193 0.542 0.661 44 EQVA* $= 0.012$ 0.912 0.043 24.767 0.966 5.384 0.027 44 EQVA* 0.012 0.912 0.043 24.767 0.964 5.384 0.727 44 EQVA* 0.0164 0.687 0.681 2.718 38.738 2.718 38.738 EQVA* 0.013 0.911 1.889 51 0.063 0.747 44 2.776 EQVA* 0.013 0.911 1.889 51 0.063 0.747 44 2.778 EQVA* 0.013 0.911 1.889 51 0.063 0.747 44 2.778 EQVA* 0.013 0.911 1.889 51 0.063 0.747 44 EQVA* 0.013 0.911 1.889 51 0.966 1.747 EQVA* 0.013 0.911 0.916 0.160 0.136 0.716 1.747 EQVA* <td>q29 F4 Compliance</td> <td>EQVA*</td> <td>2.694</td> <td>0.107</td> <td>-1.388</td> <td>47</td> <td>0.172</td> <td>0.492</td> <td>0.486</td> <td>-0.154</td> <td>47</td> <td>0.878</td>	q29 F4 Compliance	EQVA*	2.694	0.107	-1.388	47	0.172	0.492	0.486	-0.154	47	0.878
$EQVA*$ 4.205 0.046 1.281 44 0.207 0.886 0.352 0.187 44 44 $EQVA**$ \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 44 \ldots $EQVA**$ \ldots 44 \ldots $EQVA**$ \ldots 44 $EQVA**$ \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 44 $EQVA**$ \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 44 $EQVA**$ \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 44 $EQVA**$ \ldots 44 $EQVA**$ \ldots 44 $EQVA**$ \ldots		EQVNA**			-1.647	35.997	0.108			-0.173	13.729	0.865
EQVNA** 1.080 16.440 0.296 0.166 10.661 10.969 EQVA* 1.232 0.273 1.322 44 0.193 0.542 0.617 44 EQVA* 1.232 0.273 1.322 44 0.193 0.542 0.6617 44 EQVA* 1.502 29.491 0.144 -0.681 13.917 EQVA* 0.012 0.912 0.043 24.767 0.966 5.384 0.025 1.596 44 EQVA* 0.012 0.912 0.043 24.767 0.964 -0.681 2.718 38.738 EQVA* 0.012 0.912 0.610 26.220 0.547 0.900 0.989 0.747 44 EQVA* 0.013 0.911 1.889 51 0.065 1.570 0.747 44 EQVA* 0.013 0.911 1.889 51 0.063 1.570 0.747 44 EQVA* 0.013 0.911 1.889 51 0.063 1.747 44 EQVA* 0.013 0.911 1.889 51 0.063 1.747 44 EQVA* 0.013 0.911 1.889 51 0.066 1.2573 1.747 EQVA* 0.013 0.013 0.013 0.053 0.026 1.2573 1.747 EQVA* 0.013 0.013 0.013 0.013 0.058 1.747 1.44 EQVA* 0.027 0.869 0.007 21.07 <td>q14 F 2 Human rights</td> <td>EQVA*</td> <td>4.205</td> <td>0.046</td> <td>1.281</td> <td>44</td> <td>0.207</td> <td>0.886</td> <td>0.352</td> <td>-0.187</td> <td>44</td> <td>0.852</td>	q14 F 2 Human rights	EQVA*	4.205	0.046	1.281	44	0.207	0.886	0.352	-0.187	44	0.852
$EQVA*$ 1.232 0.273 1.322 44 0.193 0.542 0.6617 44 44 $EQVA**$ \ldots \ldots 1.502 29.491 0.144 \ldots 0.681 13.917 44 $EQVA*$ \ldots \ldots 1.502 29.491 0.144 \ldots 0.681 13.917 44 $EQVA*$ 0.012 0.912 0.043 24.767 0.966 5.384 0.025 1.596 44 $EQVA*$ 0.0164 0.687 0.657 24.767 0.964 \ldots 2.718 38.738 $EQVA*$ 0.0164 0.687 0.564 44 0.576 0.000 0.989 0.747 44 $EQVA*$ 0.013 0.911 1.889 51 0.063 1.570 0.766 17.457 $EQVA*$ 0.013 0.911 1.889 51 0.063 1.570 0.616 17.457 $EQVA*$ 0.013 0.911 1.889 51 0.063 1.570 0.716 17.457 $EQVA*$ 0.027 0.911 1.889 51 0.063 1.747 24 0.716 $EQVA*$ 0.027 0.921 0.906 51 0.716 0.716 17.457 $EQVA*$ 0.027 0.968 0.007 0.146 0.716 0.716 17.457 $EQVA*$ 0.027 0.968 0.007 0.146 0.716 0.716 17.457 $EQVA*$ 0.239 0.738 0.000 <		EQVNA**			1.080	16.440	0.296			-0.169	10.969	0.869
EQVNA** $=$ 0.012 0.912 0.043 $2.4.91$ 0.144 -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 $1.3.917$ -0.681 -0.681 -0.681 -0.681 -0.681 -0.786 -0.781 38.738 -0.618 -0.781 -0.781 -0.781 -0.781 -0.781 -0.781 -0.74	q14 F 1 Society	EQVA*	1.232	0.273	1.322	44	0.193	0.542	0.466	-0.617	44	0.541
$EQVA*$ 0.012 0.912 0.043 44 0.966 5.384 0.025 1.596 44 44 $EQVA*$ \dots		EQVNA**			1.502	29.491	0.144			-0.681	13.917	0.507
	q14 F 3 Labour Practices and	EQVA*	0.012	0.912	0.043	44	0.966	5.384	0.025	1.596	44	0.118
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Decent Work	EQVNA**			0.045	24.767	0.964			2.718	38.738	0.010
	q14 F4 Product	EQVA*	0.164	0.687	0.564	44	0.576	0.000	0.989	-0.747	44	0.459
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Responsibility	EQVNA**			0.610	26.220	0.547			-0.766	12.573	0.458
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	q11 F 1 Environmental	EQVA*	0.013	0.911	1.889	51	0.065	1.570	0.216	-0.571	51	0.570
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	investments	EQVNA**			1.927	29.920	0.063			-0.686	17.457	0.502
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	q11 F 2 Waste	EQVA*	1.224	0.274	0.960	51	0.342	0.134	0.715	0.125	51	0.901
EQVA* 0.027 0.869 -0.007 51 0.995 15.348 0.000 -2.004 51 EQVA* 0.07 0.086 -0.008 45.741 0.994 -1.032 9.209 EQVA* 0.559 0.458 0.638 51 0.526 0.633 -0.435 51 EQVA* 0.559 0.6428 0.662 31.162 0.513 -0.435 51 EQVA* 0.662 31.162 0.513 -0.439 13.655		EQVNA**			1.125	42.107	0.267			0.146	16.635	0.886
EQVNA** - -0.008 45.741 0.994 -1.032 9.209 EQVA* 0.559 0.458 0.638 51 0.526 0.633 -0.435 51 EQVA* 0.6529 0.6458 0.662 31.162 0.513 -0.439 13.655	q11 F 3 Source	EQVA*	0.027	0.869	-0.007	51	0.995	15.348	0.000	-2.004	51	0.050
EQVA* 0.559 0.458 0.638 51 0.526 0.230 0.633 -0.435 51 EQVNA** 0.662 31.162 0.513 -0.439 13.655 51	consumption	EQVNA**			-0.008	45.741	0.994			-1.032	9.209	0.329
0.662 31.162 0.513 -0.439 13.655	q11 F 5 Emissions	EQVA*	0.559	0.458	0.638	51	0.526	0.230	0.633	-0.435	51	0.665
		EQVNA**			0.662	31.162	0.513			-0.439	13.655	0.667

TESTING OF THE STATISTICAL SIGNIFICANCE (T-TEST) OF THE FACTORS IN THE ECONOMIC PERFORMANCE (Q2 F 1 AND Q2 F 2) TABLE II.

ч.	
dix	
oen	
Apt	

			I -test for Equality of Means	P-value. (2-tail.)	47 0.766	0.782	47 0.551	93 0.536	47 0.075	37 0.117	47 0.829	33 0.840	44 0.783	18 0.774	44 0.688	.77 0.672	44 0.442	54 0.408	44 0.848	04 0.841	51 0.314	69 0.316	51 0.463	00 0.418	51 0.348	37 0.255	51 0.597	72 0.610
Flow			tor Equal	df	66	80 29.022	0.600	0.625 40.093		22 25.237	0.217	0.203 29.133	LL L	89 31.118	0.404	0.428 32.277	0.776	0.838 33.954	93	02 31.104	1.017	1.015 42.569	40	-0.816 50.800	0.948	1.157 34.237	0.533	0.514 37.772
q2 F 4 Cash Flow		E	I-test	t	-0.299	-0.280	9.0		-1.818	-1.622	0.2	0.2	-0.277	-0.289	0.4	0.4	0.7	8.0	-0.193	-0.202	1.0	1.0	-0.740	-0.8	0.0	1.1		0.5
b	Test for	ity of	nces	Sig.	0.583		0.392		0.094		0.384		0.821		0.383		0.372		0.418		0.827		0.130		0.037		960'0	
	Levene's Test for	Equality of	Variances	F	0.306		0.748		2.916		0.772		0.052		0.776		0.813		0.668		0.048		2.372		4.605		2.882	
			of Means	P-value. (2-tail.)	0.048	0.120	0.670	0.702	0.629	0.681	0.013	0.007	0.096	0.098	0.397	0.428	0.117	0.235	0.023	0.039	0.002	0.002	0.163	0.290	0.779	0.723	0.447	0.466
icators		-	I -test for Equality of Means	df	47	15.558	47	18.066	47	16.750	47	27.425	44	22.708	44	19.773	44	14.764	44	19.500	51	31.085	51	18.065	51	48.954	51	26.403
q2 F 3 Financial indicators		E	I -test tor	t	2.034	1.645	0.429	0.389	0.487	0.418	2.581	2.912	1.700	1.724	0.855	0.809	1.597	1.238	2.353	2.208	3.311	3.433	-1.414	-1.091	-0.282	-0.356	0.766	0.739
q2 F 3	Test for	ity of	nces	P -value	0.020		0.203		0.253		0.324		0.595		0.641		0.015		0.179		0.630		0.013		0.810		0.738	
	Levene's Test for	Equality of	Variances	F	5.775		1.664		1.341		0.994		0.286		0.221		6.472		1.863		0.234		6.665		0.059		0.113	
					EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**	EQVA*	EQVNA**
		Variables			q29 F 1 CG effectiveness		q29 F 2 Monitoring and	reporting	q29 F 3 CG structure		q29 F4 Compliance		q14 F 2 Human rights		q14 F 1 Society		q14 F 3 Labour Practices	and Decent Work	q14 F4 Product	Responsibility	q11 F 1 Environmental	investments	q11 F 2 Waste		q11 F 3 Source	consumption	q11 F 5 Emissions	

4
2 F
ò
Ð
Z
<,
£
2
g
Э
Ż
ΨP
2
\sim
PEI
C)
Ĭ
ğ
ð
õ
ΗE
I T F
Z
\mathbb{RS}
0
Ē
¥
E CO
ΗE
F TF
OF
Ē
ES
Ē
÷
NCE (
Ŋ
EL.
~
SIG
1
ũ
EL
Ξ.
<u>ک</u>
ST_{I}
01
01
ΉE
OF THE S
NG OF THE S
TING OF THE S
STING OF THE S
TING OF THE S
ESTING OF THE S
ESTING OF THE S
. TESTING OF THE S
ESTING OF THE S

••
ŝ
×
•=
р
E
a
Õ.
d
◄

Factors	q14 F1	q14 F2	q14 F3	q14 F4	q11 F1	q11 F2	q11 F3	q11 F5	q29 F1	q29 F2	q29 F3	q29 F4	q2 F1	q2 F2	q2 F3	q2 F4
q14 F 1 Society	1															
q14 F 2 Human rights	0.119	1														
q14 F 3 Labour Practices and Decent Work	0.003	-0.139	1													
q14 F 4 Product responsibility	0.071	0.294	0.364^{*}	1												
q11 F 1 Environmental investments	0.434^{*}	0.376*	0.143	0.409^{*}	1											
q11 F 2 Waste	0.017	0.063	-0.602**	-0.143	-0.062	1										
q11 F 3 Source consumption	-0.040	-0.232	-0.010	0.095	0.134	-0.299	1									
q11 F 5 Emissions	0.240	0.121	0.149	0.156	0.236	-0.331	0.209	1								
q29 F 1 CG effectiveness	0.157	0.432^{*}	0.204	0.343^{*}	0.231	-0.249	0.019	0.335	1							
q29 F 2 Monitoring and reporting	0.294	0.057	0.000	-0.101	0.025	-0.211	-0.235	0.100	0.210	1						
q29 F 3 CG structure	-0.147	0.120	0.101	0.368^{*}	0.219	-0.124	-0.173	-0.086	0.004	-0.033	1					
q29 F 4 Compliance	0.136	0.252	0.158	0.209	0.481^{**}	-0.276	0.125	0.336	0.094	0.025	0.042	1				
q2 F 1 Return on	0.003	-0.228	-0.353*	-0.280	-0.295	0.324	0.027	-0.137	0.055	0.131	-0.244	-0.092	1			
q2 F 2 Economic result	0.224	-0.263	0.142	-0.086	-0.334	-0.133	790.0-	-0.288	-0.078	-0.082	0.105	-0.384*	0.028	1		
q2 F 3 Financial indicators	0.373^{*}	0.184	0.243	0.007	0.264	-0.388*	-0.071	0.335	0.528**	0.268	0.022	0.411^{*}	-0.032	-0.071	1	
q2 F 4 Cash Flow	0.131	-0.125	0.173	-0.081	0.209	-0.300	690.0	0.321	0.259	0.408^{*}	-0.043	0.037	-0.026	-0.275	0.299	1
														Source:	Source: own processing of research	g of research

TABLE IV. CORRELATION MATRIX THE INFLUENCE OF ESG PERFORMANCE ON ECONOMIC PERFORMANCE INDICATORS

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).