

# CONSTRUCTION OF THE ECONOMIC INDICATORS OF PERFORMANCE IN RELATION TO ENVIRONMENTAL, SOCIAL AND CORPORATE GOVERNANCE (ESG) FACTORS

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## Abstract

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The article is focused on economic performance in relation to environmental, social and corporate governance indicators. Indicators are increasingly used by investors to understand the processes in company, focusing on the key factors. Many international institutions engaged in the development of environmental, social and corporate governance indicators and they are in accordance with financial institutions trying to find a common language in defining the environmental, social and corporate governance indicators affecting their common objectives to achieve sustainable, long-term growth and prosperity. The aim of the article is searching for the way of measuring economic performance of the company in relation to environmental, social and corporate governance indicators. On the basis of analysis of the environmental, social and corporate governance performance indicators of international organizations has been carried out empirical research of economic indicators for the companies in the manufacturing sector. The expected result of the research is the design of the economic indicators of performance in relation to environmental, social and corporate governance indicators. These proposed economic performance indicators should enable companies to measure the economic performance and added value towards sustainability.

performance, key performance indicators, ESG performance, integrated reporting, empirical research, Person Chi-Square, T-test, Economic scales of the performance, Economic indicators, Economic Value Added

## Introduction

For the evaluation of sustainable development at the level of enterprises abroad there is number of environmental, social and corporate governance (ESG) indicators which reflect the development of changes in the development of company within the specified time period. In recent years investment managers preferred the importance of ESG indicators that show the long-term performance of companies in which they invest financial resources. Surveys suggest that investors are increasingly convinced that integration of ESG into their investment process maximizes their long-term

interest and that good corporate governance and sustainability will contribute to the creation of long-term value for shareholders.

Investors are usually interested in proprietary approaches and models for evaluation of companies but many are now trying to include in their decision-making the ESG performance indicators which may include key performance indicators (KPIs) as follows: *Environmental*: Climate change (gas emissions), Environmental management systems and compliance, Efficiency (waste, water, energy), Other environmental issues (e.g. toxics, biodiversity) etc. *Social*: Workplaces H&S, Human capital

management, Stakeholder management/license to operate. *Corporate Governance*: Board effectiveness, Corporate conduct (e.g. bribery and corruption).

The project applicant Faculty of Business and Management, Brno University of Technology (FBM BUT) and the co-applicant Faculty of Business and Economics of Mendel University in Brno (FBE MENDELU) deals in the framework of solution of the project No. P403/11/2085 *Construction of Methods for Complex Multifactor Assessment of Company Performance in Selected Sectors* funded by the Grant Agency of the Czech Republic.

Creating a reliable method for measuring the performance of ESG, where the effect from more complex factors can be considered as a prerequisite for success not only in decisions but also with regard to corporate management, possibility for comparison, competitiveness of companies, etc. For ESG data on output it is necessary to establish key performance indicators (KPIs). Let us consider that KPIs are organized to the four pillars (Environmental, Social and Corporate Governance, Economics) and fifth pillar Sustainability of Success (Kocmanová, Němeček, 2009), (Kocmanová *et al.*, 2011), (Chvátalová, Kocmanová, Dočekalová, 2011), (Kocmanová *et al.*, 2010), (Hřebíček *et al.*, 2011, 2011a), (Bartes, 2011).

There were conducted many studies dealing with the relationship between environmental, social and economic performance by Horváthová (2010); López-Gamero *et al.* (2009); Barnett, Salomon (2006) and the conclusion is not unambiguous. However,

companies should focus on the management of ESG factors of the corporate performance.

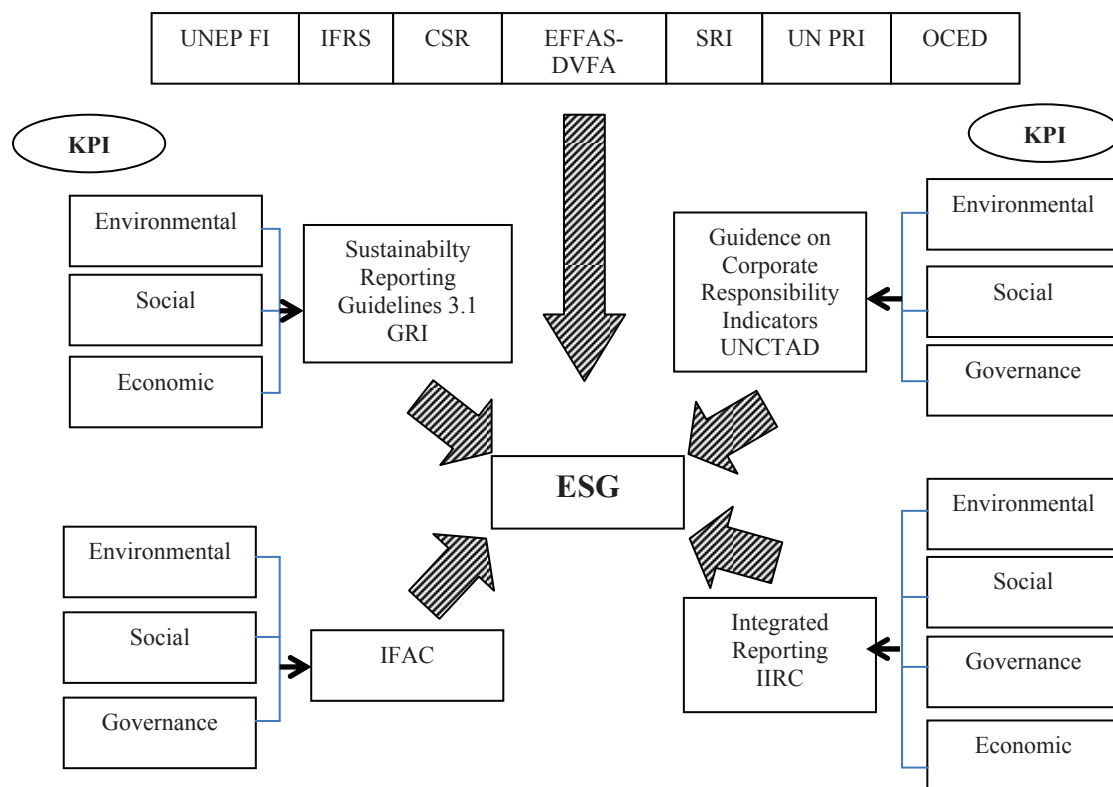
The positive effects arising from the management of all components of corporate performance are described for example in (Kocmanová, Dočekalová, 2011), (Hřebíček, Soukopová, 2008), (Hřebíček *et al.*, 2009, 2011, 2011a). Theoretical approaches of international organisations arising from the research in relation to the development of ESG indicators can be summarized in the following picture Fig. 1.

## 2 Integration environmental, social and corporate governance (ESG) performance

The companies should establish the key ESG indicators and they should also select appropriate supplementary indicators according to important aspects. These may be based on internal and external audits, on which basis the company shall propose the supplementary indicators. The co-operating workplace FBE MENDELU by Hřebíček *et al.* (2011) deals with the research of environmental indicators.

An important element of the social performance is occupational health and safety (OHS). For the corporate governance of each company this indicates the need of permanent creation of such conditions at work that guarantee a high degree of safety for the employees of the enterprise as well as its customers and surroundings.

The trend underscoring the social aspects of sustainable development is the concept of Corporate



1: International organization dealing with the ESG-indicators

Social Responsibility (CSR). Social performance indicators generally include: Leadership-Accountability, Reporting, Development, Employees-Diversity, Training, Labour relations, Customers-Product safety, Responsible marketing, Communities-Human rights, Social investments, Transparency.

Other key issues related to the CSR are: Human rights, Employees' rights, Involvement of municipalities and relationships with suppliers, Information policy including issues such as releasing information, Transparency, Educating the consumers and anti-corruption measures.

The importance of the corporate social aspects is mainly linked to the human resources.

Key performance indicators are focusing of social for NACE economic activities on the following areas from GRI's Reporting Guidelines:

1. Labor Practices and Decent Work indicators: *Employment, Occupational Health and Safety, Training and Education, Diversity and Equal Opportunity, Equal Remuneration for Women and Men.*
2. Human Rights indicators: *Non-discrimination, Child labour.*
3. Society indicators: *Public policy.*
4. Product responsibility indicators: *Products and Services Labelling.*

The importance of Corporate Governance consists in its contributing to not only corporate prosperity, but also to responsibility. Along with the development of global markets investors' activity increases, with them demanding higher standards of responsibility, conduct and performance. Investors tend to seek opportunities outside their domestic markets ever more often. The companies trying to gain resources on the international capital markets, however, often find that capital is only available for those who conform to the internationally accepted standards of Corporate Governance and publishing of information. The defining of Corporate Governance is not a matter of unified terminology. In the evaluation of the corporate governance is described with the following quotes: a system through which companies are managed and controlled (Kavalíř, 2005).

The statutory bodies are responsible for corporate management. The responsibility of a body covers the setting of a company's strategic goals, the management keeping check on realization of the goals, supervision of the management and informing shareholders about the performance of duties of a steward (Cadbury, 1992). According to another description of Corporate Governance it is a process through which companies respond to the rights and requests of stakeholders (Demb, Neubauer, 1992).

5. In the Czech Republic a *Code of supervision and management*<sup>1</sup> of companies based on the OECD

principles was introduced as early as 2001 and was last updated in 2004.

ESG key indicators of performance provide to companies the ways how to measure progress towards achievement of the strategic objectives of the sustainability. They provide quantitative or qualitative forms of a feedback which reflect the results in the framework of their corporate strategy. The approach is not differed when managing environmental, social and governance issues. Furthermore, the ESG indicators should help to investors to achieve excellent financial returns under predetermined risk. The integration of ESG indicators into the investment strategy should focus on the economic consequences of the long-term risks and opportunities, in conjunction with strategies of the companies where the investments are being made. ESG performance indicators should reflect the future cash flows.

### 3 Approaches to the determination of economic performance

Investors want above all to achieve excellent financial returns under the predetermined risk. The integration of ESG indicators into the investment strategy should focus on the economic consequences of the long-term risks and opportunities, in conjunction with strategies of the companies where the investments are being made. ESG performance indicators should reflect the future cash flows. The aim of the paper is a proposal of the economic indicators of performance in relation to ESG indicators at the corporate level, which would promote the decision-making of the investors and were part of the currently discussed Integrated reporting (IIRC, 2012).

Easy and quick evaluation of the economic performance of the company is the main desire of investors and owners of the company. From their point of view it is important to determine whether the company is able to increase its value and provide them with adequate return on their investment. The basic goal of most businesses is generally considered maximizing and increasing in term of market value over a longer period of time.

In the Czech Republic dominates the classical approach to assessment of business performance, based on monitoring of standard indicators ROE, ROA, ROCE, ROS. However, there is gradual shift towards the evaluation of business performance through creation of the value. These are new value criteria, based on the concept of value management which emphasizes the maximization of added value for owners. In recent years is heavily promoted by the EVA-indicator (Economic Value Added).

Financial reporting standards, such as International Financial Reporting Standards (IFRS) and US Generally Accepted Accounting Principles

1 [http://www.mfcr.cz/cps/rde/xbcr/mfcr/KODEX\\_KCP\\_2004\\_pdf.pdf](http://www.mfcr.cz/cps/rde/xbcr/mfcr/KODEX_KCP_2004_pdf.pdf)

(U.S. GAAP) and ESG reporting frameworks, principally the GRI Guidelines, will act as structural supports for potential integrated reporting frameworks of integrated economic performance.

Research for determination of the economic indicators focused on the analysis of the reporting sources the Global Reporting Initiative (G3.1, 2011) and Sustainability Framework 2.0 (International Federation of Accountants IFAC, 2011). Furthermore, the research dealt with economic indicators which monitor published in the Yearbook of Czech Statistical Office (Czech Statistical Office, 2011) and selected economic indicators of financial statements according to Czech accounting standards (2011) and there was also made a comprehensive analysis of the voluntary reporting of 10 large Czech companies in the manufacturing sector.

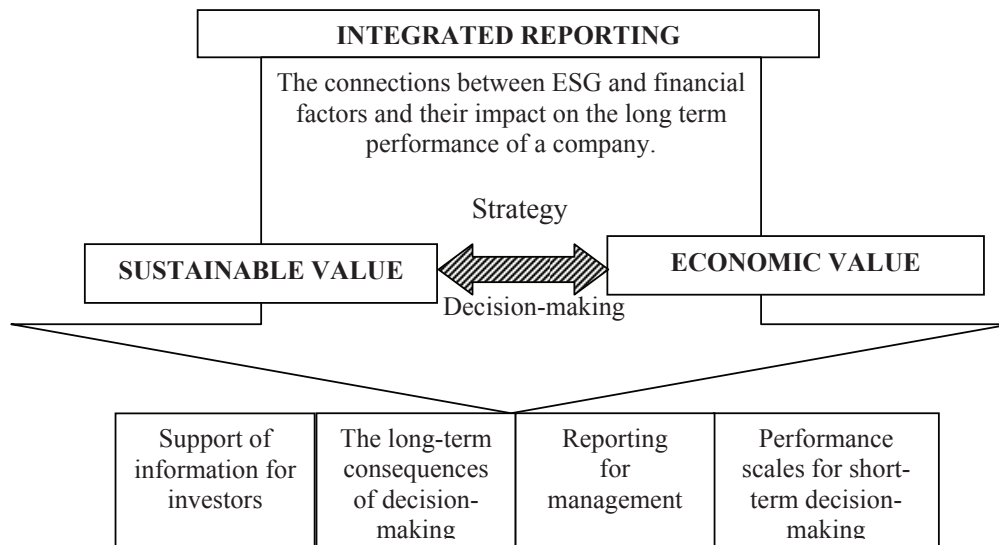
#### 4 Methodology and empirical research of the economic indicators

The integration of ESG-indicators, to be used for the evaluation of sustainable performance for investors, is pushing companies to issue transparent integrated reports. The emphasis will gradually move from the financial information on an integrated approach, where are all the types of relevant information for the assessment and evaluation of the quality of corporate governance and environmental, social and economic performance. Integrated reporting helps to realize the strategy of sustainability and get the ESG indicators into the string value of the investment in the financial markets for a wider group of stakeholders, Fig. 2.

Integrated report, which should measure the sustainable profit as one comprehensive triple-bottom-line becomes the current paradigm.

I: Comparison of indicators GRI, IFAC and CSO

Global Reporting Initiative	International Federation of Accountants	Czech Statistical Office
<b>Economic Performance</b> <ul style="list-style-type: none"> <li>● EC1 Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.</li> <li>● EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change.</li> <li>● EC3 Coverage of the organization's defined benefit plan obligations.</li> <li>● EC4 Significant financial assistance received from government.</li> </ul> <b>Market Presence</b> <ul style="list-style-type: none"> <li>● EC5 Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.</li> <li>● EC6 Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.</li> <li>● EC7 Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.</li> </ul> <b>Indirect Economic Impacts</b> <ul style="list-style-type: none"> <li>● EC8 Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.</li> <li>● EC9 Understanding and describing significant indirect economic impacts, including the extent of impacts.</li> </ul>	<ul style="list-style-type: none"> <li>● Revenues</li> <li>● Operating costs</li> <li>● Employee wages and benefits</li> <li>● Payments to providers of capital</li> <li>● Payments to government in taxes</li> <li>● Research and development expenses</li> <li>● Sustainable innovations</li> <li>● Customer satisfaction</li> <li>● Relevant product/service ranges</li> <li>● Product safety and quality</li> <li>● Capital and exploration expenditure</li> <li>● Contributions to local economic development</li> </ul>	<ul style="list-style-type: none"> <li>● Values of assets, liabilities and components</li> <li>● Acquisition of total fixed assets</li> <li>● Total revenues</li> <li>● Turnover</li> <li>● Turnover (revenues) from own goods and services</li> <li>● Turnover (revenues) from merchandise refers to revenues from sales</li> <li>● Total expenses</li> <li>● After tax economic result</li> <li>● Production value</li> <li>● Book value added</li> <li>● Margin</li> <li>● Book value employee</li> <li>● Return on assets, ROA.</li> <li>● Return on equity, ROE</li> <li>● Return on sales, ROS</li> <li>● Return on costs</li> <li>● Expense-to-revenue</li> <li>● Inventories turnover time</li> <li>● Environmental protection investment</li> <li>● Non-investment environmental expenditure</li> <li>● Environmental protection expenditure</li> <li>● Expenditure on R&amp;D</li> </ul>



2: Integrated reporting  
Source: IIRC, 2012

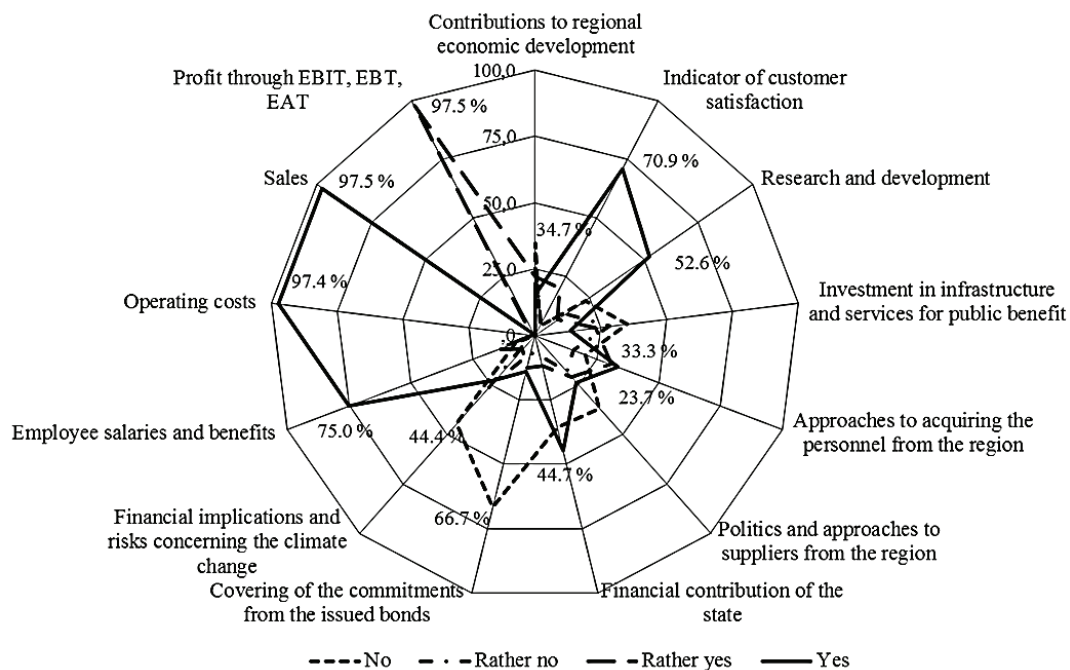
#### 4.1 Empirical research of the economic indicators

The empirical research of author team was focused on economic performance indicators in large companies with over 250 employees. For research were asked in total 79 large companies in the sector of the manufacturing industry. Criteria for distribution of questionnaires to companies according to their business field have been chosen on the basis of classification of economic activities CZ-NACE. The way of analysing was controlled by the goal to describe and investigate examined indicators in relation to the ESG performance of manufacturing companies which have put in place

some of the voluntary instruments ISO 9000, ISO 14000, EMAS, ČSN OHSAS 18000, CSR, Cleaner production, etc. The electronic form of the questionnaire is mentioned also in Hřebíček *et al.* (2011).

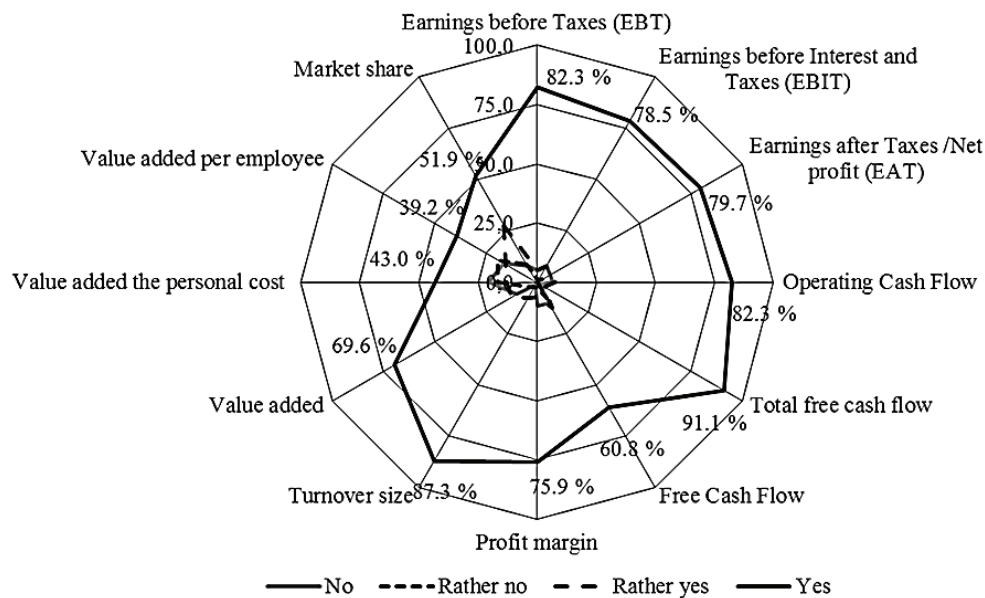
In order to identify the relevant indicators a sample of selected companies in the manufacturing sector was asked the question: *which economic indicators are monitored*. Respondents could express whether they monitor the indicator in a range from *Yes* (4) or *No* (1).

The questionnaires showed that all the companies are monitoring the profit through EBIT, EBT or EAT 97.5% or a combination thereof. Furthermore,



3: The economic indicators companies in the manufacturing sector CZ-NACE





4: Economic scales of the performance companies in the manufacturing sector CZ-NACE

the vast majority of companies monitors the sale indicator 97.5% and operating costs 97.4% (i.e., variables from which is calculated the profit).

The relevant indicators are the employee salaries and benefits 75.0% and the indicator of customer satisfaction 70.9%. The answer about the monitoring of expenditure on research and development varies around 52.6%, however, most companies argue that they monitor these expenses. On the contrary, companies are watching less the indicators relating to the region, i.e. the indicator Politics and approaches to suppliers from the region, Approaches to acquiring the personnel from the region and Contributions to regional economic development. Biggest fluctuation shows the answer to the point relating to the financial implications and risks concerning the climate change 44.4% and covering of the commitments from the issued bonds 66.7%, most companies don't monitor these indicators, Fig. 3.

Empirical research has dealt with the question which performance indicators use the companies of the manufacturing industry as an economic scale. The answers of this question confirmed the relevance of the profit indicators: profit before tax (EBT) 82.3%, profit after tax (EAT) 79.7% and profit before interest and tax (EBIT) 78.5%.

Most businesses use as the indicator for the evaluation of the performance the size of turnover. Used indicator is operational cash flow 82.3% and

total free cash flow 91.1%. A surprising result is the market share, where respondents indicated only 51.9%, from the perspective of companies the least interested are indicators of value added per employee 39.2% and the personal cost 43.0%, and these indicators also show the highest rate of fluctuation, Fig. 4.

Empirical research has also dealt with the mutual dependency between the classic performance scales, modern Economic Value Added (EVA) scales and strategic instrument Balance Scorecard (BSC) for measurement of the economic performance according to the owner, legal form of the business and companies in the manufacturing industry. In the empirical research was gradually examined the mutual dependency of the manufacturing industry, of the owner, legal forms of business with the classical performance indicators, modern indicator EVA, BSC.

For the basic test of mutual dependency was used chi-square test about the independence, null hypothesis  $H_0: \pi_{ij} = \pi_{i \cdot 0}$ . For testing has been used Pearson Chi-Square:

$$\chi_p^2 = \sum_{i=1}^R \sum_{j=1}^S \frac{(n_{ij} - m_{ij})^2}{m_{ij}}.$$

Testing of the ownership influence (domestic versus foreign one) with the classic performance

## II: Chi-Square test about independence variable the legal form of the enterprise and classic performance indicator

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.693 <sup>a</sup>	3	0.875
Likelihood Ratio	0.908	3	0.824
N of Valid Cases	79		

a. 6 cells (75,0%) have expected count less than 5. The minimum expected count is 0.11.

## III: Chi-Square test about independence variable the dependency of the processing industry and classic performance indicators

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.296 <sup>a</sup>	5	0.998
Likelihood Ratio	0.308	5	0.997
N of Valid Cases	78		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 0.92.

## IV: T-test Economic Value Added (EVA) and economic scales of the performance, economic indicators

Economic Value Added (EVA)		N	Mean	Std. Deviation	Std. Error Mean
Economic scales of the performance	Yes	42	10.33	2.008	0.310
	No	37	8.92	3.086	0.507
Economic indicators	Yes	42	8.45	2.520	0.389
	No	37	6.92	2.216	0.364

## Independent Samples Test

Economic Value Added (EVA)		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Economic scales of the performance	Equal variances assumed	9.871	0.002	2.442	77	0.017	1.414	0.579	0.261	2.568
	Equal variances not assumed			2.379	60.483	0.021	1.414	0.594	0.226	2.603
Economic indicators	Equal variances assumed	2.188	0.143	2.854	77	0.006	1.533	0.537	0.464	2.603
	Equal variances not assumed			2.878	77.000	0.005	1.533	0.533	0.472	2.594

## V: T-test Balanced Scorecard (BSC) and economic scales of the performance, economic indicators

Balanced Scorecard		N	Mean	Std. Deviation	Std. Error Mean
Economic scales of the performance	Yes	26	10.35	1.765	0.346
	No	52	9.29	2.953	0.409
Economic indicators	Yes	26	8.23	2.286	0.448
	No	52	7.40	2.515	0.349

## Independent Samples Test

Balanced Scorecard		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Economic scales of the performance	Equal variances assumed	7.124	0.009	1.679	76	0.097	1.058	0.630	-0.197	2.312
	Equal variances not assumed			1.973	73.434	0.052	1.058	0.536	-0.011	2.126
Economic indicators	Equal variances assumed	0.365	0.547	1.410	76	0.163	0.827	0.586	-0.341	1.995
	Equal variances not assumed			1.456	54.612	0.151	0.827	0.568	-0.311	1.965

## VI: KPIs of economic performance

Indicator	KPI	Measurement
EC1-Profit	EBIT	Earnings before Interest and Taxes
	EBITDA	Earnings before Interest, Taxes, Depreciation and Amortization.
	EAT	Earnings after Taxes /Net profit
	EPS	Earnings Per Share, P/E = Price Earnings Ratio.
EC2-Cash Flow	Free Cash Flow	EBIT - Taxes + Amortization - expenditure on the acquisition of fixed assets + /-increases in working capital.
	Operating Cash Flow	All the cash flows arising from the main activity of the company, which is the subject of its business (the movement of stocks, receivables, obligations).
EC3-Revenues	Total revenues	Revenues from own goods and services + Revenues from sale of merchandise (goods for resale) + Revenues of fixed assets + Revenues from sale of materials + Revenues of securities.
EC4-Turnover size	Turnover size	Revenues from own goods and services + Revenues from sale of merchandise (goods for resale) + Revenues of securities
EC5-Profit margin	Profit margin	The difference between turnover (revenues) from sales of goods and expenses on merchandise sold (i.e. on goods sold in the same condition as received).
EC6-Indicators of economic performance	Return on Equity	ROE = EAT/ Equity
	Return on Investment	ROI = EBIT/Total capital
	Return on Assets	ROA = EBIT/Assets
	Return on Sales	ROS = EAT/ Revenues
	Return On Capital Employed	ROCE = EBIT/ Equity + Long-term liabilities
EC7-EVA	Economic Value Added	EVA = (ROE - $r_c$ ) * Equity
<b>Additional indicators</b>		
EC8-Value added	Value Added	The difference between production value and production consumption.
EC9-Production	Production	The sum of turnover (revenues) from sales of own goods, services, merchandise, changes in the stock of finished products and work in progress, and capitalization minus expenses on merchandise sold.
EC10-Investment	Total Investment	Acquisition of total fixed assets is a sum of gross acquisition of tangible and intangible fixed assets. Net Present Value (NPV), Discounted Cash Flow (DCF).
	Environmental protection investment	Environmental protection expenditures include expenditures on the acquisition of fixed assets for environmental protection and environmental protection non-investment expenditures, which arise as a result of operating activities of the enterprise, include wage costs, payments for rent, energy and other materials and supplies.
EC11-Market share	Market share	Turnover of industry / company specific turnover.
EC12-Other	Expenditure on R&D	Total expenditure consists of all R&D current and capital expenditure made within the statistical unit or economic sector irrespective of the source of funds.

indicators, EVA and BSC, didn't bring any statistically significant results, in fact there is no real relationship between these factors. Positive results have been achieved only in the dependency between the legal form of the enterprise and classic performance indicators, where according to Pearson Chi-Square Value 0.693 < Asymp.Sig 0.875, see Tab. II, and dependency of the processing industry and classic performance indicators, Value 0.296 < Asymp.Sig 0.998, see Tab. III.

The empirical research has further shown that companies applying modern performance

measures (EVA), apply a broader range of economic standards of performance scales and economic indicators than undertaking, ignoring the modern scales of performance, see Tab. IV.

Different situation, however, is connected with the BSC, which does not have influence on the undertaking in monitoring of the items in the questionnaire relating to the economic scales of performance and economic indicators.

On the basis of empirical research of the economic indicators in companies of the processing industry according to CZ-NACE can be derived key economic



indicators, from which you can determine the Economic Value in relation to the ESG indicators.

## 5 RESULTS AND DISCUSSION

For the measurement of economic performance in relation to the ESG indicators are proposed the Key Performance Indicators (KPIs). The economic performance indicators provide quantitative forms of a feedback which reflect the results in the framework of their corporate strategy. The approach is not differed when managing environmental, social and governance issues. The non-financial KPIs that a business develops, manages against and ultimately reports – whether internally or externally – will depend on its strategic corporate priorities, and will reflect the unique nature of the organization. The most important is to recognize what is measured, what is controlled, and it is important that the measures create value for the company and its stakeholders.

KPIs can help companies plan and manage their environmental, social and governance priorities – particularly when KPIs are linked to core business strategies through action plans that include performance targets. KPIs can help companies to plan and manage their economic priorities, in particular, when the indicators are focused on the core business strategy, by means of operational plans, which include performance targets. Moreover, the actual process of defining, selecting and measuring non-financial KPIs adds value by providing a more informed view of the company's economic performance.

The proposed KPIs for measurement of the performance in relation to the ESG indicators were established on the basis of the results of empirical research by the workplace FBM BUT, see Tab. VI.

The KPIs should choose the company itself on the basis of their relevance and in terms of its strategy, these performance indicators should help companies demonstrate progress towards the objectives of sustainability and ensure that they cover their environmental, social and economic impacts. Use of KPIs in a particular organisational context can be challenging. Before a company decides to establish scales of the key performance indicators, it is necessary to understand how they can best be used and integrated into internal management and how they can help and support Sustainable reporting.

Managers must consider how to present the KPIs in their internal and external reporting. Identification and selection of key performance indicators depends on the context within the company and industry.

## 6 CONCLUSIONS

The primary and crucial basis of the conception is the reporting of real-life conditions, their good knowledge, gathering of empirical data, when mainly the values of the mentioned ESG factors come to the fore, for the individual phases of the economic, environmental, social and corporate governance performances, while not only their values, but also their roles and priorities, content and functions and mutual interaction will be monitored, and proposals and methodical procedures will be formulated based on them as benefits to help boost company performance. It is important to create measurable and relevant objectives for sustainability and appropriate metrics.

Empirical research deals with the selection of economic performance indicators for the CZ-NACE sector – manufacturing industry. Based on analysis of available documents of national and international organizations dealing with the determination of ESG indicators a questionnaire was formed. The research has examined 22 economic indicators that were based on sources of GRI, IFAC, CZO and Czech accounting standards. This set of 22 indicators has presented a multidimensional view and could be considered as a large one and this might lead to reduction of their clarity and meaningfulness. Based on these facts a modifications were made in the selection of economic indicators. These modifications preceded the univariate analysis of all variables, two-dimensional analysis and the level of dependence for the two nominal variables and chi-square test of independence were further tested. For the economic indicators mean and median were calculated. Based on the statistical findings economic performance indicators in relation to ESG performance indicators were proposed.

ESG indicators in an integrated reporting can provide relevant information, and even over time. Integrated reporting integrates environmental, social, corporate governance and economic performance indicators, which should include Sustainable Value and Economic Value.

## SUMMARY

The article is focused on economic performance in relation to environmental, social and corporate governance (ESG) indicators. In recent years investment managers preferred the importance of ESG indicators that show the long-term performance of companies in which they invest financial resources. This trend is very universal and there is no doubt that the ESG relations will influence the companies and that the objective of investors is to achieve sustainable growth and prosperity in the future. The aim of the article is searching for the way of measuring economic performance of the company in relation to environmental, social and corporate governance (ESG) indicators. The project holder Faculty of Business and Management, Brno University of Technology and in the construction

sector co-holder Faculty of Business and Economics of Mendel University in Brno deals in the framework of solution of the project No. P403/11/2085 *Construction of Methods for Complex Multifactor Assessment of Company Performance in Selected Sectors* funded by the Grant Agency of the Czech Republic with the ESG-indicators in the manufacturing sector in the Czech Republic for companies with over 250 employees. On the basis of analysis of the environmental, social and corporate governance (ESG) indicators of international organizations has been carried out empirical research of economic indicators for the companies in the manufacturing sector.

Empirical research deals with the selection of economic performance indicators for the CZ-NACE sector-manufacturing industry. Based on analysis of available documents of national and international organizations dealing with the determination of ESG indicators a questionnaire was formed. The research has examined 22 economic indicators that were based on sources of GRI, IFAC, CZO and Czech accounting standards. This set of 22 indicators has presented a multidimensional view and could be considered as a large one and this might lead to reduction of their clarity and meaningfulness. Based on these facts a modifications were made in the selection of economic indicators. These modifications preceded the univariate analysis of all variables, two-dimensional analysis and the level of dependence for the two nominal variables and chi-square test of independence were further tested. ESG indicators in an integrated reporting can provide relevant information, and even over time. Integrated reporting integrates environmental, social, corporate governance and economic performance indicators, which should include Sustainable Value and Economic Value.

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#### REFERENCES

- BARNETT, M. L., SALOMON, R. M. 2006: Beyond Ditchomy: The Curvilinear Relationship Between Social Responsibility And Financial Performance, *Strategic Management Journal* No 27, pp. 1101–1122. ISSN 1097-0266.
- BARTES, F. 2010: Competitive intelligence – tool obtaining specific basic for strategic decision making TOP management firm. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 2010, LVIII, No. 6, pp. 43–50. ISSN 1211-8516.
- CADBURY, A. 1992: The Committee on the Financial Aspects of Corporate Governance and Gee and Co. Ltd. Report. 1992, p. 61.
- CA, 2010 : Environmental, Social and Governance (ESG) Issues in Institutional Investor Decision Making: <http://www.cica.ca/publications/list-of-publications/manual/item41881.pdf>.
- CFA Institute, 2008. Environmental, Social, and Governance Factors at Listed Companies: A Manual for Investors. Available from internet: <http://www.cfapubs.org/toc/ecb/2008/2008/2>.
- Czech Statistical Office, 2012: [http://vdb.czso.cz/vdbvo/maklist.jsp?kapitola\\_id=33&expand=1](http://vdb.czso.cz/vdbvo/maklist.jsp?kapitola_id=33&expand=1)
- DEMB, A., NEUBAUER, F. F., 1992: The Corporate Board-Confronting The Paradoxes. New York, Oxford University Press 1992.
- DVFA, 2008: KPIs for ESG. Key Performance Indicators for Environmental, Social and Governance Issues. A Guideline for Corporates on How to Report on ESG and a Benchmark for Investment Professionals on How to Integrate ESG into Financial Analysis, *DVFA Financial Papers* No. 8/08\_e, DVFA, Dreieich.
- FEE, 2011: Environmental, Social and Governance (ESG) indicators in annual reports – An introduction to current frameworks: [http://www.fee.be/publications/default.asp?library\\_ref=4&content\\_ref=1392](http://www.fee.be/publications/default.asp?library_ref=4&content_ref=1392).
- G3.1 Guidelines, 2011: G3.1 Guidelines, Available: <http://www.globalreporting.org/ReportingFramework/G31Guidelines/>.
- G4 Development, 2012: Available: <https://www.globalreporting.org/resourcelibrary/G4-PCP1-Full-Report.pdf>.
- HORVÁTHOVÁ, E., 2010: Does environmental performance affect financial performance? A meta-analysis. *Ecological Economics*, 70 (1), 52–58. ISSN 0921-8009.
- HŘEBÍČEK, J., SOUKOPOVÁ, J., 2008: *Voluntary Company Assessment Report on the linkages between environment, economy and society* (in Czech). Praha: Ministry of Environment of the Czech Republic, 61. ISBN 978-80-7212-495-4.
- HŘEBÍČEK, J., SOUKOPOVÁ, J., ŠTENCL, M., TRENTZ, O., 2011: Corporate Key Performance Indicators for Environmental Management and Reporting. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis* 59, 2: 99–108, ISSN 1211-8516.
- HŘEBÍČEK, J., SOUKOPOVÁ, J., ŠTENCL, M., TRENTZ, O., 2011a: Integration of Economic, Environmental, Social and Corporate Governance Performance and Reporting in Enterprises. *Acta*

- Universitatis Agriculturae et Silviculturae Mendelianae Brunensis* 59, 7: 157–177, ISSN 1211-8516.
- CHVÁTALOVÁ, Z., KOCMANOVÁ, A., DOČEKALOVÁ, M., 2011: Corporate Sustainability Reporting and Measuring Corporate Performance, In: Environmental Software Systems. Frameworks of eEnvironment. 9th IFIP WG 5.11 International Symposium. ISESS 2011. Heidelberg: Springer, 398–406, ISBN 978-3-642-22284-9.
- IFAC, 2012: Investor demand for environmental, social and governance disclosures: <http://www.ifac.org/publications-resources/investor-demand-environmental-social-and-governance-disclosures>.
- IIRC, 2012: The International Integrated Reporting Council website. Available: <http://www.theiirc.org/>.
- KLÍROVÁ, J., 2001: Corporate Governance – správa a řízení obchodních společností. Praha, ManagementPress, 2001. 119 s. ISBN 80-7175-140-5.
- KAVALÍŘ, P., 2005: Hodnocení corporate governance v České republice. Centrum ekonomických studií VŠEM, *Working Paper CES VŠEM* No. 14/2005. ISSN 1801-2728.
- KLÍROVÁ, J., KAVALÍŘ, P., 2004: Demand for Education in Corporate Governance on Increase. *Acta Oeconomica Pragensia*, No. 5, 13–21. ISSN 0572-3043.
- KOCMANOVÁ, A., DOČEKALOVÁ, M., 2011: Environmental, social and economic performance and sustainability in SMEs. In: Liberec Economic Forum 2011. 1. Technical University of Liberec, Czech Republic: Technical University of Liberec, Czech Republic. p. 242–252. ISBN 978-80-7372-755-0.
- KOCMANOVÁ, A., DOČEKALOVÁ, M., 2011: Corporate sustainability: Environmental, Social and Corporate performance. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 7, 203–209. ISSN 1211-8516.
- KOCMANOVÁ, A., DOČEKALOVÁ, M., NĚMEČEK, P., ŠIMBEROVÁ, I., 2011: Sustainability: Environmental, Social and Corporate Governance Performance in Czech SMEs. In: The 15th World Multi-Conference on Systemics, Cybernetics and Informatics. 2011. IFSR, Orlando, USA: WMSCI 2011, Orlando, USA, 2011. p. 94–99. ISBN 978-1-936338-42-9.
- LÓPEZ-GAMERO, M. D., MOLINA-AZORÍN, J. F., CLAVER-CORTÉS, E., 2009: The whole relationship between environmental variables and firm performance: competitive advantage and firm resources as mediator variables. *Journal of Environmental Management* 2009(10): 3110–3121. ISSN 0301-4797.
- OECD Guidelines, 2010: OECD Guidelines for Multinational Enterprises. Available [http://www.oecd.org/document/28/0,3746,en\\_2649\\_34889\\_2397532\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/28/0,3746,en_2649_34889_2397532_1_1_1_1,00.html).
- OECD, Principles of Corporate Governance. Available at: <http://www.oecd.org/dataoecd/32/18/31557724.pdf>.
- Sustainability Reporting Framework, 2012: website on Globalreporting. Available: <https://www.globalreporting.org/reporting/reporting-framework-overview/Pages/default.aspx>.
- UN Global Compact, 2010: United Nations Global Compact. Available: <http://www.unglobalcompact.org/>.
- UNEP FI, 2010: United Nations Environment Programme Finance Initiative. Available: <http://www.unepfi.org/about/index.html>.

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