

CORPORATE GOVERNANCE – RESEARCH OF KEY INDICATORS ON MARKET OF PROCESSING INDUSTRY IN THE CZECH REPUBLIC VIA CLUSTER ANALYSIS

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Abstract

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The discussion on corporate governance has oriented on practical problems, including corporate fraud, the abuse of managerial power and social irresponsibility. Contemporary cognition implicates the fact that the questions regarding to corporate governance are very actual especially in relation to company competitiveness, company performance and sustainability of success (long term viability). Paper is focused to the current questions regarding to the definition of corporate governance, looking for the appropriate conceptual framework and identification of key corporate governance indicators in selected industrial market in the Czech Republic via cluster analysis. The scientific aim is looking for the appropriate key indicators in processing industry as a base for the corporate governance performance measurement. The presentations of the results in the paper are just part of selected results in the framework of the elaborated research project titled “Construction of Methods for Multifactor Assessment of Company Complex Performance in Selected Sectors”.

corporate governance, processing industry, performance, key indicators, cluster analysis, Czech Republic

Corporate governance (CG) seems to be the crucial issue of nowadays. CG has assumed prominence over at least the last two decades. Much of the current discussion on corporate governance has oriented on practical problems, including corporate fraud, the abuse of managerial power and social irresponsibility (Letza, Sun, Kirkbride, 2004; Spitzek, 2009). The role of corporate governance and the importance of understanding the functions of CG have been at the center of much controversy since the inception of Modern Corporation (Murphy, Topyan, 2005). Authors also note that the differences in structure and characteristics of corporation studies have made the comparisons much more complicated. A lot of studies interesting in this area are based on differences principles, data reliability and integrity. As a result the CG problem

remained a collection of disparate studies that lacked collective coherence. Another key question is based on the discussion about the “Agency theory” and is related to questions of CG efficiency measuring, especially for all stakeholders, not just for shareholders. Authors Murphy, Topyan (2005) emphasizes that the studies of many authors are produced as answers to recently surfaced problems. Denis and McConnell (2003) classify the literature deal with CG into two groups: First generation literature and second – generation literature. First generation studies examine mainly the governance mechanism; there are important differences in governance system across economies. The task to explain these differences is taken up in second – generation corporate governance research.

In contrast, the fundamental problem of corporate governance in continental Europe and in most of the world is different. Corporate governance in the Czech Republic is such that companies are very reluctant to pass on good governance model, recommended by international standards and it often leads to reduced performance and competitiveness in the market compared to foreign companies. The rankings of competitiveness of Czech Republic are lagging behind and one of the causes is also the poor corporate governance practice. There is often criticized vague judiciary, lack of regulatory interventions; there are criticized links of municipalities with the private sector and rampant corruption. Freedom of corporate governance is impossible without compliance with legal requirements such as legal, economic, environmental and social, i.e. also ethical standards.

The purpose of the paper is to present the selected research results related to the current situation of the corporate governance in the Czech processing companies. The scientific aim is looking for the appropriate key indicators in processing industry as a base for the corporate governance performance measurement.

Corporate Governance in the Czech Republic

The concept of corporate governance in the Czech Republic was almost unknown a decade ago and this was reflected in the practice. Recently, however, awareness and education in this field begins to improve, especially due to pressure from European Union and initiatives of institutions such as the Securities Commission, the Institute of administrative authorities (CioD), Czech Institute of Company Secretaries and others. There are companies that are specialized directly on education and advisory in this field as e.g. CG Partners.

The international standards *Corporate Governance* were applied in the national level within the framework of the Corporate Governance and Management Code. The corporate Governance and Management Code, based on the OECD principles, was released in the Czech Republic in the year 2001 for the first time; an amended version was published in 2004. The working group of the Securities Commission (Komise pro cenné papíry – Czech title) under the supervision of Mr. Tomáš Ježek formulated the code. Mentioned code lays down a summary of the rules for the due practice of the governance and management of the company, some of them are already included in the rule of court of the Czech Republic. The code is intended especially for the companies traded in the public market; nevertheless, it is also the interest of other capital companies to follow the rules presented in the Code. The fundamental principles, upon the Code is based on, are as follows: personal responsibility of the executive directors, transparency of the acts of the board of directors, accountability of the governance and management by the shareholders, public and government.

In the Czech Republic we may find companies that inclined to the Anglo – Saxon model, but also companies that inclined more to the German model. Important role in the ownership control of companies still play the banks. The characteristic form of corporate governance in the Czech Republic, according to Blazek (1999) is the result of a specific form of voucher privatization method. Although the Czech model of corporate governance may commemorate the Anglo-Saxon model, it is different in many ways. Above all, it is the position of banks, which became after privatization significant owners, but also creditors of many enterprises. Confused capital market is another difference of the Czech model from Anglo – Saxon model of corporate governance. This could imply that the Czech model is rather similar to the German model, but there are also some differences. In the Czech model, however, due to lack of legal regulation is in many cases exactly the opposite situation. So, the chairman of the Board can be also one of the principal owners. Such an arrangement reduces the powers of the management and disrupts the integrity of management, but also reduces their responsibility for bad decisions.

According to Kavalíř (2005) there is the level of good corporate governance plays an increasingly important role in the assessment and valuation of companies by investors. High importance of corporate governance comes from the fact that most large companies are owned by one group of people (owners) and governed by entirely different group of people (executive management). Adherence to the principles of good governance is one factor that increases the owners' confidence in the executive management and contributes to the protection and development of their investment.

Theoretical principles

As we can see, there have been many opinions of different authors in the theoretical and practical sources analysis. In the past decades the various instruments have been introduced, involved in the corporate governance, either the reports discussing the risks and deficiencies of the companies and the codes of the good governance and management, the recommendations, setting the objective of more efficient governance and management of the companies. Besides the improvement of the effectiveness and company performance their objective is also to protect the owners, shareholders, creditors and other stakeholders. These recommendations contain the best practices, empirically verified codes of conduct (decision – making, target identification), facilitating the company to enhance higher efficiency. Important role here also play intelligence analysis which seems to be appropriate tool for processing and utilization of company data (Bartes, 2011).

Many authors are interesting in definition of the corporate governance, understanding of the different principles and codes regarding

characterization of corporate governance on the universal, European or national levels.

Definition of Corporate Governance

Important publication in the field of corporate governance has been the work by authors Berle, Means (1933) where they analyzed the impact of corporations and their managers influence not only on the venture but on the entire company. As the main issue of their book should be considering the warning against concentration of economic power of professional managers who are isolated and protected against pressures from the stakeholders. Corporate governance is defined by many of authors in the ninetieths mainly as a system or a complex of structures, processes, cultures and systems, whereby is company managed, controlled and which stimulate successful progress of the company (Cadbury, 1992; Keasley, Thompson and Wright, 1997). New trends in corporate governance can be seen according to Kay, Silberston, (1999) in a single common goal, namely “to give the executive management the greatest possible freedom to develop long – term business in any way that seem them appropriate once they will have exactly specified responsibilities to all stakeholders involved in this business for their long – term performance. Herewith the hostile takeovers of companies will become really impossible; when from ownership of a majority share won't imply any rights for appointment of executive management.”

Main questions of current research in the area of corporate governance

Questions of the research in the area of corporate governance concern about well-governed corporation and good practices (Klířová, 2008; Klířová, Kavalíř, 2009; Krivogorsky, 2011), principles of good corporate governance (ethical approach-culture, society, organizational paradigm; a decision – making process is in place which is based on a model reflecting the above giving due weight to all stakeholders; stakeholders are treated with equal concern – albeit some have greater weight than others; accountability and transparency: to all stakeholders).

Several researchers intend their focus into theorize the integration of responsibility issues into the governance systems (Paine, 1994; Blair, 1995; Bird, 2001; Manville and Ober, 2003; Ricacrt *et al.*, 2005; Aguilera *et al.*, 2006; Elkington, 2006; White, 2006) and many countries have issued guidance documents regarding good governance practice (Combined Code in UK, second King Report in South Africa, German Code, Austrian Code, OECD guidelines, etc.). Most of these recommendations either explicitly or implicitly refer to corporate responsibility (CR) topics such as stakeholder engagement, human rights and environmental sustainability (Mallin, 2002). The Worldwide Governance Indicators (WGI) is a long – standing research project to develop cross –

country indicators of governance (Kaufmann, Kraay, Mastruzzi, 2010). Williams and Segui – Mas (2012) looked in their research at CG in the European Union via cluster analysis. Their research presents a unique cluster analysis based on 38 factors used in the EFW index (Economic Freedom of the World).

In connection with the professional and scientific sources, results of research and the requirements of the environments it is now in the centre of the Czech company performance monitoring necessary to establish key indicators of corporate governance (Hřebíček, Soukupová, 2008; Kocmanová, Němeček, 2009; Kocmanová, Hornugová Klimková, 2010; Hřebíček, Štencl, Trenz, Soukupová, 2011, 2011a; Chvátalová, Kocmanová, Dočekalová, 2011; Kocmanová, Dočekalová, Němeček, Šimberová, 2011; Šimberová, Kocmanová, Němeček, 2011; Hřebíček *at all* 2012; Kocmanová, Dočekalová, 2011, 2012;), which would be part of key performance indicators ESG and would characterize the global environmental, social and governance (Corporate Governance) issues that investors are considering in the context of corporate behaviour.

The basis for evaluation of the sustainable company performance are indicators defined in the Global Reporting Initiative (2011), UN Global Compact, the OECD, UNCTAD, CFA Institute, the EFFAS – DVFA, IFAC, WBCSD, UNEP FI, Corporate EEA, EUROSTAT, CZO, ILO, etc.

MATERIALS AND METHODS

Research sample

Data was acquired by empirical research in the Czech Republic which was completed in 2011 within the mentioned research project supported by Grant Agency of the Czech Republic (GACR). The sample was used from the Czech database of the companies according to Classification of Economic Activities (CZ – NACE) The sample was consist of 79 processing companies – ee in Tab.1. From the compiled database of companies, 79 companies were selected and personally addressed according to legal form of business having more than 250 employees according to the EU – criterion, i.e. manufacture of electrical engineering, engineering, medical products 31 companies (38.5 %), electricity, gas, water and waste processing 12 companies (15.4 %), foundry production 11 companies (14.1 %), manufacture of textile and leather 9 companies (11.5 %), manufacture of chemical 8 companies (10.3 %), and manufacture of food 8 companies (10.3 %).

Production companies were selected deliberately, for reasons of data comparability and that have large fields of influence in the environmental, social and economic dimension. From the voluntary management instruments in the companies of manufacturing industry is used the standard ISO 9000 with 89.9% of the companies, then is followed by the standard ISO 14 000 with 55.7%, CSR with 25.3 %, although from the total number of

I: *Manufacturing companies according to Classification of Economic Activities (CZ – NACE)*

Classification of Economic Activities (CZ-NACE)		Frequency	Valid Percent	
Valid	C *	10-11 Manufacture of food	8	10.3 %
		13-16 Manufacture of textile and leather	9	11.5 %
		20-23 Manufacture of chemical	8	10.3 %
		24-25 Foundry production	11	14.1 %
		26-33 Manufacture of electrical engineering, medical products	30	38.5 %
	(D+E)*	35-38 Electricity, gas, water and waste processing	12	15.4 %
		Total	78	100.0 %
Missing	System	1		
Total		79		

*C Manufacturing

*D+E Water supply, Waste management and Remediation Activities

companies it was introduced only in half, the same also applies to the OHSAS 18 000 48.1% and MRP 48.1%. The companies consider the other voluntary instruments for management for less significant.

From the point of view of ownership, of the 79 participating companies 44 (55.7%) were exclusively in domestic ownership, the remaining 35 (44.3%) are divided into branches of multinational corporations and companies with a foreign investor.

Methods

From the questionnaires emerged that 70.0% of the members of the CG in the Czech Republic are members of top management.

The questionnaire was constructed on the theoretical knowledge of the huge of current international and domestic sources and was intended for the survey of the "Performance of the company: environmental, social, economical and corporate governance". Research data processing was running with several ways in the relation to partial research questions. The scientific aim of the mentioned research project is identification of the appropriate complex of key indicators (environmental, economical, social and corporate governance) for selected industry as a base for

construction of the multifactor method of the corporate performance measurement.

In our paper we focus to partial research results related to the process of looking for appropriate corporate governance indicators in processing industry. For the cluster analysis needs we were using the data of the questionnaire asking managers for their opinion which crucial indicators they consider important related to the corporate governance. For the paper were used the question 30. and 31. of the questionnaire (Tab. II) – 12 variables. Respondents could comment on the basis of five Point Likert – type scales: 1 = No, 2 = Rather no, 3 = Rather yes, 4 = Yes and 5 = I don't know.

Data was processing and analyzing by SPSS 20.0 software. The cluster analysis was processed by the Ward method, which is based on the minimum sum of squares of distances. For the method of distances between the variables, Euclidean distance was chosen. The descriptive statistic was derived to reveal certain specifics of the variables under examination, that influence the outcome of the methods deployed in subsequent phase. Calculated were the following values: mean and variance (in the framework of data analysing and processing were used also values of standard deviation (SD)

II: *Selected questions from the questionnaire processing for the Cluster analysis*

Q 30a	There are ethical behaviour supported by CG in your company?
Q 31	Which of following indicators are considered important related to CG of your company?
31a.	Structure of CG;
31b.	CG and top management (representation);
31b1c.	The remuneration CG;
31d.	Shareholder rights;
31e.	Vision, strategy show lower variability and were excluded from the database;
31f.	Corruption
31g.	Equal opportunities: ratio of women/men in CG;
31h.	Benefits to political parties;
31i.	Court decisions;
31j.	Conflict of interest;
31k.	Effectiveness of CG;

III: Statistical Description of the Variables

Questions	Variable	Mean	Std. Deviation	Variance	The Coefficient of Variation (%)
30a.	Ethical behaviour	3.58	0.765	0.585	21.37
31a.	Structure of CG	3.43	0.893	0.797	26.03
31b.	CG and top management (representation)	3.36	0.839	0.705	24.97
31b1c.	Remuneration CG	3.12	0.832	0.693	26.67
31d.	Shareholder rights	2.93	1.129	1.274	38.53
31e.	Vision, strategy show lower variability and were excluded from the database	3.84	0.267	0.135	6.95
31f.	Corruption	3.11	1.035	1.071	33.28
31g.	Equal opportunities: ratio of women/men in CG	2.59	1.052	1.107	40.62
31h.	Benefits to political parties;	1.38	0.615	0.379	44.57
31i.	Court decisions	2.43	1.074	1.153	44.20
31j.	Conflict of interest	2.75	1.079	1.165	39.24
31k.	Effectiveness of CG	3.70	0.490	0.241	13,24

and the coefficient of variation). On the base of the coefficient variation value were selected the CG indicators see (Tab. III).

Results of the cluster analysis

The second phase of the research analysed 12 original corporate governance indicators using cluster analysis regardless of the outcome of the previous statistical check.

The cluster analysis was carried out on 60 observations (75.9% of the samples), as 19 observations (24.1%) had missing values for one or more variables. The clusters were created using the Ward method on the analysed variables.

As a variables involved into the cluster analysis were selected indicators of the question 30 and 31 of the questionnaire (Tab. II).

In quest of appropriate indicators the cluster analysis should peg the selected variables into the clusters, which have specific information in the complex assessment. Cluster Analysis is multidimensional statistical method, which is used for classification of objects. For the Cluster analysis was used the hierarchical method called Ward method. For the method of distances between variables was chosen *Euclidean distance*:

$$d(X_i, X_j) = \sqrt{\sum_{k=1}^p (x_{ik} - x_{jk})^2},$$

where x_{ik} is the value of k -th observation on the i -th element and x_{jk} is the value of k -th observations on the j -th element.

Cluster analysis was performed on standardized values. The dendrogram shows the gradual process of clustering, see Fig. 1. The results of the cluster analysis according to the Ward method suggest that the most similar are the corporate governance indicators in: **1st Cluster** (31a.Structure of CG; 31b. CG and top management (representation); 31b1c. The remuneration CG; 31d.Shareholder rights;), **2nd**

Cluster (31i.Court decisions; 31j.Conflict of interest; 31f.Corruption; 31h.Benefits to political parties;), **3rd Cluster** (31e.Vision, strategy; 31k.Effectiveness of CG; 30a.Ethical behaviour; 31g.Equal opportunities: ratio of women/men in CG;).

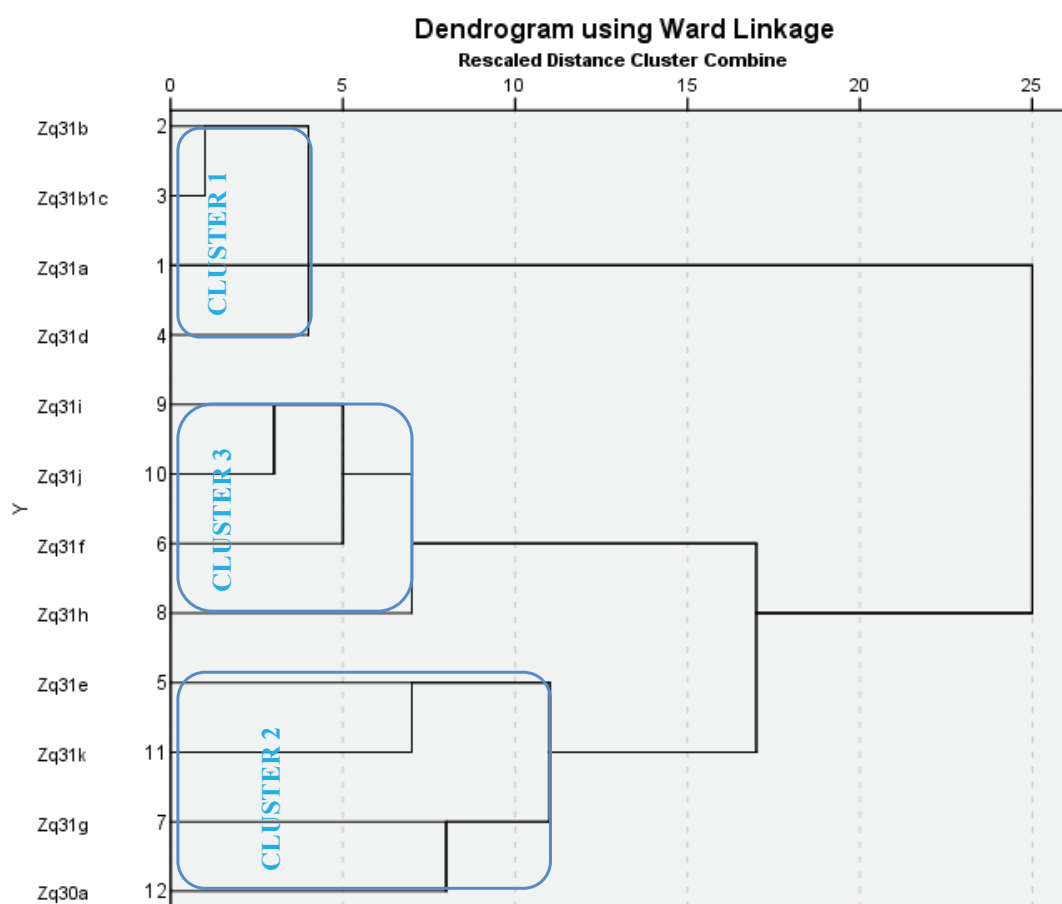
The analysis by the Ward method yielded 3 clusters, each of them containing some greatly similar indicators of corporate governance in Tab. IV.

DISCUSSION

Selection of significant indicators proceeded from the inlet database, analyzed and verified by basic descriptive statistics. The objective of descriptive statistics working with all initial input indicators, obtained by the analysis of available expert sources and empirical research, was the identification of particularities of variables, having any impact on the results of other methods of subsequent research stages.

Selection of significant indicators for reviewed industry from the input database was the aim. The purpose was not to substitute identified database, but to establish an alternative file of appropriate variables. The objective of further data processing was the reduction of original broad file of indicators, namely by expert analysis and subsequent decision made by the team of authors, representing the input for subsequent application of multi – dimensional statistical methods. The paper presents the results of cluster analysis of selected questions (no. 30 and no. 31) included in the research questionnaire, connected with the identification of corporate governance indicators.

Carried – out analysis showed 3 clusters (see Fig. 1), characterizing three areas of indicators – structure and system, compliance and effectiveness CG. The result (see Tab. III. and Tab. IV.) indicates the issue of consideration of relevancy of the implementation of indicators with variance coefficient higher than 40%. These are indicators 31i. “Court decisions” (44.20%) and 31h. “Benefits to political parties” (44.57%)



1: Dendrogram – results of the cluster analysis
Note: dendrogram – Ward's method

IV: Clusters and indicators of CG

Clusters	Measurement Area	Corporate Governance indicators (The coefficient of Variation %)
Cluster 1	Structure and system of CG	31a. Structure of CG; (26.03 %)
		31b. CG and top management (representation); (24.97 %)
		31b1c. The remuneration CG; (26.67 %)
		31d. Shareholder rights; (38.53 %)
Cluster 2	Effectiveness of CG	31e. Vision, strategy; (6.95 %)
		31k. Effectiveness of CG; (13.24 %)
		30a. Ethical behaviour; (21.37 %)
		31g. Equal opportunities: ratio of women/men in CG; (40.62 %)
Cluster 3	Compliance	31i. Court decisions; (44.20 %)
		31j. Conflict of interest; (39.24 %)
		31f. Corruption; (33.28 %)
		31h. Benefits to political parties; (44.57 %)

included in the cluster entitled Compliance, and indicator 31g. Equal opportunities: ratio of women/men in CG (40.62%) from the cluster entitled Effectiveness of CG. The application of multi-dimensional analysis (especially factor analysis), the objective of which was to monitor the existence and significance of individual causal relations, solved

this issue. Having evaluated the results, we came to conclusion that one additional sphere seemed to be important in that stage, which should be paid attention when identifying corporate governance indicators, i.e. monitoring and reporting. Especially in compliance with the objective of the identification of key impacts of sustainability on

objectives, performance and sustainable success. The team shall continuously publish further results.

CONCLUSION

Generally, various advisory sources exist for selection and application of the measures of performance and key performance indicators. An important aspect seems to be mainly the responsibility for performance to strategic objectives, including sustainable performance. This requires an understanding of causal relations between various activities and their impact on financial and non – financial performance. The link to assessment and performance measurement is usually a feature of majority successful companies. Naturally, assessment and efficiency measurement arise in earlier stages of the identification of key impacts of sustainability and identification and monitoring of the progress towards the objectives.

The company itself should select its key CG indicators on the basis of their significance and from the point of its strategy. These performance indicators should facilitate the companies to prove the progress towards sustainability objectives and to guarantee their environmental, social and economic impact coverage. The application

of key performance indicators in a particular organizational context can be demanding. The understanding of their application and most appropriate implementation into the internal management shall be necessary prior to company's decision regarding the measures of key performance indicators.

Provided that companies believe that some of selected corporate governance indicators are not relevant for particular performance measurement, they do not have to include such indicators into the overall performance measurement. The managers are those people who should consider the external presentation of key performance indicators. Selection of key performance indicators depends on the industry in which the particular company is active. Our research focused on the selection of indicators for the processing industry. The results should be further empirically verified together with the verification of indicators from other spheres – economic, environmental and social. Further investigation of the CG performance indicators should be intend to verification on determination of the indicators via factor analysis including specification of measurable areas of the CG indicators (especially unit of the measurement).

SUMMARY

Corporate governance – research of key indicators on market of processing industry in the Czech Republic via cluster analysis.

Corporate governance (CG) seems to be the crucial issue of nowadays. CG has assumed prominence over at least the last two decades. Much of the current discussion on corporate governance has oriented on practical problems, including corporate fraud, the abuse of managerial power and social irresponsibility (Letza, Sun, Kirkbride, 2004; Spitzek, 2009). As a result the CG problem remained a collection of disparate studies that lacked collective coherence. In connection with the professional and scientific sources, results of research and the requirements of the environments it is now in the centre of the company performance monitoring necessary to establish key indicators of corporate governance (Hřebíček, Soukupová, 2008; Kocmanová, Němeček, 2009; Kocmanová, Hornugová Klimková, 2010; Hřebíček, Štencl, Trenz, Soukupová, 2011, 2011a; Chvátalová, Kocmanová, Dočekalová, 2011; Kocmanová, Dočekalová, Němeček, Šimberová, 2011; Šimberová, Kocmanová, Němeček, 2011; Hřebíček *at all* 2012; Kocmanová, Dočekalová, 2011, 2012;), which would be part of key performance indicators ESG and would characterize the global environmental, social and governance (Corporate Governance) issues that investors are considering in the context of corporate behaviour. The basis for evaluation of the sustainable company performance are indicators defined in the Global Reporting Initiative (2011), UN Global Compact, the OECD, UNCTAD, CFA Institute, the EFFAS – DVFA, IFAC, WBCSD, UNEP FI, Corporate EEA, EUROSTAT, CZO, ILO, etc.

The purpose of the paper is to present the selected research results related to the current situation of the corporate governance in the Czech processing companies. The scientific aim of the paper is looking for the appropriate key indicators in processing industry as a base for the corporate governance performance measurement. Data was acquired by empirical research in the Czech Republic which was completed in 2011 within the mentioned research project supported by Grant Agency of the Czech Republic (GACR). For the cluster analysis needs we were using the data of the questionnaire asking managers for their opinion which crucial indicators they consider important related to the corporate governance. For the paper were used the question 30. and 31. of the questionnaire (Tab. II). Carried – out analysis showed 3 clusters (see Fig. 1), characterizing three areas of indicators – structure and system, compliance and effectiveness CG. The result (see Tab. III. and Tab. IV.) indicates the issue of consideration of relevancy of the implementation of indicators with variance coefficient higher than 40%. Having evaluated the results, we came to conclusion that one additional sphere seemed to be important in that stage, which should be paid attention when identifying corporate governance indicators, i.e. monitoring and reporting.

Our research focused on the selection of indicators for the processing industry. The results should be further empirically verified together with the verification of indicators from other spheres – economic, environmental and social.

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