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Empirical Paper

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The association between disclosures on control system over financial reporting and mechanisms of corporate governance: Empirical evidence from Germany and Poland

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Abstract: The aim of the research was to determine the impact of selected corporate governance mechanisms on the scope of disclosures related to control system over financial reporting in Poland and Germany. The research group comprised of companies from the Warsaw WIG 30 index and the German DAX index in 2013. The disclosures were measured by the number of detailed disclosures about control system over financial reporting presented by the surveyed companies. The research results indicate that selected corporate governance mechanisms affect the scope of disclosures regarding the system of control over financial reporting. It was found that the number of supervisory board committees and the number of meetings of the supervisory board have a significant positive influence on the scope of disclosures regarding control over financial reporting. But, the increase in number of meetings of the audit committee has a significant negative impact on the scope of disclosures regarding control over financial reporting. The results of the research also indicate the role of national determinants of the scope of disclosures. The study was a comparative one nature and was conducted among companies from developed and developing capital markets.

Keywords: corporate governance, control system, voluntary disclosure, financial statements
JEL Classification: M41, G34

1 Introduction

Control over financial reporting has gained a new dimension after the unpleasant experience of financial scandals in the United States and Europe. It became apparent that the mechanisms of corporate governance functioning have failed at the beginning of the twenty-first century. As a response to financial scandals, new regulations were introduced in both the United States and Europe, under which public companies were required to present additional disclosures in the area of corporate governance. These disclosures include, among others, information on the system of control over financial reporting. This information seems particularly relevant as the control system over financial reporting integrates selected internal and external corporate governance mechanisms around the accounting information system [Gad, 2016]. The system of control over financial reporting is considered as a type of defense against irregularities in financial reporting

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[Bardhan et al., 2015]. Disclosures about the system of control over financial reporting are important for investors who can use this information to control the activities of management [Hermanson, 2000].

Hooghiemstra et al. [2015] pointed out that the approach adopted in the United States to the control system is extremely narrow and is related primarily with the reliability of financial reporting. A wider approach is presented in the COSO Framework [Committee of Sponsoring Organizations of the Treadway Commission, 1992]. At the same time, the authors noticed that outside the United States the law does not require managers to disclose information regarding control over financial reporting, and in most cases, the guidelines in this respect emerge from national corporate governance codes and are voluntary. Meanwhile, in Poland and Germany, public companies are obliged by virtue of the "hard" law to present these disclosures in their annual reports [Gad, 2016]. The managers of companies may only decide on the scope of these disclosures. Contrast to the United States, the regulations in force in Poland and Germany do not require public companies to present material weaknesses in the system of control over financial reporting.

Research on disclosures about control over financial reporting has great potential. These disclosures are freely shaped by the persons managing the companies; therefore it could be used to eliminate the agency conflict [Fama and Jensen, 1983]. The results of the research would also be important from the point of view of signaling theory [Spence, 1976]. The scope of disclosures can be used to get the impression that the reliability of financial reporting is ensured by means of a professional, comprehensive control system. Disclosures about control over financial reporting reflect a kind of corporate governance architecture and, in particular, the mechanisms responsible for the supervision of financial reporting. As indicated in the literature, the disclosures about control over financial reporting are not only a good area for comparing the enterprises operating in a given country, but also for comparing enterprises operating in different countries [Hooghiemstra et al., 2015].

The aim of the research was to determine the impact of selected corporate governance mechanisms on the scope of disclosures related to control system over financial reporting in Poland and Germany.

The research results confirm that corporate governance mechanisms influence the scope of disclosures regarding control system over financial reporting. It was found that the number of supervisory board committees and the number of meetings of the supervisory board have a significant positive influence on the scope of disclosures regarding control system over financial reporting. But, the increase in number of meetings of the audit committee, i.e., the unit which in particular should be involved in monitoring financial reporting, has a significant negative impact on the scope of disclosures regarding control system over financial reporting. The audit committee should also be involved in monitoring the effectiveness of the system of control over financial reporting. Hence, it seems that the meetings of the audit committee are a substitute for disclosures regarding control system over financial reporting. In Poland and Germany, the research results indicate that various corporate governance mechanisms affect the scope of disclosures regarding control system over financial reporting. In Polish companies the number of meetings of supervisory boards and the concentration of ownership affected the scope of disclosures, while in German companies the scope of disclosures was affected by the number of committees of supervisory boards, the number of meetings of the audit committee, and the share of independent members among the total number in supervisory boards.

Because of the existing concerns about the quality of the control system over financial reporting, it seems that the research results presented in this article are important for both researchers and practitioners, since they provide new knowledge regarding the factors affecting disclosures about control system over financial reporting. They also provide new knowledge about national corporate governance systems. The article presents the original research methodology used to determine the scope of disclosures about the system of control over financial reporting. A catalog of detailed disclosures regarding control over financial reporting has been created and based on the catalog the scope of disclosures of the examined entities was estimated.

The first part of the article deals with the characteristics of the corporate governance systems in Poland and Germany. The second part presents literature studies on the impact of various factors on the scope of disclosures about the system of control over financial reporting. Part three provides information on the organization of the research. The fourth part analyses the results of regression analysis. The fifth part of the article presents the conclusions and research limitations.

2 Background of the study

Corporate governance solutions in Poland and Germany are similar in nature. A two-tier corporate governance model is mandatory in both countries. In both Germany and Poland the responsibility for monitoring management activities rests primarily with the supervisory board, with shareholders playing a relatively minor role in the supervision process [Hopt, 2015; Jeżak, 2014]. In recent years, the level of ownership concentration has decreased on the Polish capital market, but it is still at a relatively high level [Adamska, 2013; Urbanek, 2009]. In the case of companies from the DAX index and other large corporations listed in Germany, the concentration of ownership has decreased significantly in recent years, and now there are companies with dispersed shareholding. While the share of international investors in ownership has increased, at the same time there are fewer domestic banks in the structure of large corporations, i.e., these banks cease to play a key role in the ownership structure of large corporations [Hopt, 2015]. The management board is elected by the supervisory board in both Poland and Germany, while the supervisory board is elected by the shareholders. The "comply or explain" principle introduced for the first time in 2002 in Poland and Germany is applied in the area of "soft" corporate governance law. Until the 1990s, enacted legal acts in Europe were mainly derived from German law. But, in the last two decades, due to the development of international capital markets and the globalization process, Anglo-Saxon standards have gained importance [Opalski, 2010]. The concept of control systems over financial reporting appeared due to the financial scandals that took place at the beginning of the 21st century in the United States. One of the key provisions of the Sarbanes-Oxley Act (SOX), which was a direct reaction to these financial scandals, was the mandatory requirement of enterprises to publish information on control over their accounting system [Clarke, 2004]. In Europe, guidelines on publishing information on control over financial reporting are included in Directive 2006/46/EC of the European Parliament and of the Council of June 14, 2006. Pursuant to paragraph 10 of Directive 2006/46/EC, companies whose securities are allowed to participate in trading on a regulated market and whose registered office is located within the European Community are required to produce an annual statement on the application of corporate governance principles, constituting a separate and easily identifiable part of the management report. This statement should provide shareholders information on the actual corporate governance practices in the company, including a description of the main features of any existing risk management and internal control systems associated to the financial reporting process. The guidelines of the above directive were implemented by national regulations in Poland (the Regulation of the Minister of Finance dated 19 February 2009 on current and periodic information in reports on the activities of all issuers of securities) and Germany (the German Commercial Code). Both Polish and German regulations indicate that disclosures about the system of control over financial reporting must form part of the management report. It should be emphasized that neither Polish nor German regulations contain any guidelines related to the scope of disclosures about control systems over financial reporting, whereas companies listed in the United States are required by the Sarbanes-Oxley Act to disclose any material weakness of the control system over financial reporting.

The qualitative research conducted so far indicates that the disclosures about control over financial reporting presented by companies listed on the Polish and German capital markets are in the 11 main information areas, i.e.: main principles of control systems over financial reporting, IT tools, internal and external regulations, external audit, internal audit, organization of the accounting system, data security and protection, the process of preparing financial statements, supervisory board (audit committee), management accounting, and risk [Gad, 2016].

3 Literature review and hypotheses development

The signaling theory [Spence, 1976] and the agency theory [Fama and Jensen, 1983] are the basic theories used for the analysis of disclosures regarding the system of control over financial reporting. The scope of disclosures may be used by managers to signal that the reliability of financial reporting is ensured by means of a comprehensive control system. Disclosures about control over financial reporting mitigate the problem of information asymmetry between the principal and the agent. The agent (manager) has full information about the system of control over financial reporting, whereas the principal (owner) has only information on control over financial reporting as presented in the company's annual report.

The literature indicates that a higher quality of corporate governance is directly related to the effective system of control over financial reporting [Hoitash et al., 2009]. The system of control over financial reporting prevents the manipulation of results by managers, acts toward the benefit of shareholders, and thus mitigates the problem of agency.

The effectiveness of corporate governance depends largely on the activity of supervisory boards (boards of directors) [Hoitash et al., 2009] and task groups operating within them, i.e., committees.

Based on a survey conducted among 46 banks listed on the London Stock Exchange in 2011, it was established that the level of disclosures about corporate governance is positively correlated with the existence of committees within the board of directors [Stefanescu, 2012]. Particularly, it is observed that the activities of the audit committee have a positive impact on the quality of financial reporting [Bedard et al., 2004]. The presence of this committee also affects the level of voluntary disclosures and it has been confirmed by studies carried out among companies listed in the United States [Krishnan, 2005].

The establishment of the board committees strengthens the control function of corporate governance [Stefanescu, 2012]. It is expected that better supervised companies will have a better system of control over financial reporting, and these companies will be disclosing more information as part of disclosures about the control system [Bronson et al., 2006].

As part of the study, it is expected that:

H1: The number of supervisory board committees is positively correlated with the scope of disclosures about the system of control over financial reporting.

Karamanou and Vafaes [2005] showed in research conducted among public companies listed in the United States that effective corporate governance is positively related to the scope of financial disclosures. Moreover, Lang and Lundholm [1993] confirmed the positive impact of effective corporate governance on the scope of corporate disclosures (both financial and non-financial) presented by enterprises [Lang and Lundholm, 1993].

The frequency of meetings of the board of directors can be considered as the time they spend on monitoring management activities [Vefeas, 1999], and thus increasing the effectiveness of corporate governance. The results of research conducted among companies listed in the United States indicate that in the case of more active boards of directors, the managers of companies present more precise forecasts in their reports [Karamanou and Vafaes, 2005].

As part of the study it is expected that:

H2: The number of meetings of supervisory boards is positively correlated with the scope of disclosures about the system of control over financial reporting.

The literature indicates that, from the point of view of the agency theory, the audit committee serves as a means of contributing to reducing the information asymmetry, reducing the manager opportunism, and increasing the improvement of the quality of disclosures [Cheung et al., 2010]. It is expected that audit committees which meet more often exercise effective control over the quality of financial information to a larger extent [Menon and Williams, 1994]. The literature shows a positive correlation between the frequency of meetings of the audit committee and the scope of disclosures on corporate community involvement presented by British companies [Yekini et al., 2015].

When analyzing companies listed in the United States in 1998, it was found that the number of meetings of audit committees was positively correlated with the occurrence of voluntary disclosures regarding control over financial reporting. The disclosures were examined using the dichotomous variable and concerned the period when disclosures about control over financial reporting were not mandatory in the United States [Bronson et al., 2006]. The situation seems to be more complex for the case of disclosures where the the system of control over financial reporting must be presented along with the annual report and whose scope is arbitrary. The literature indicates that for the companies listed in the United States (drawing up disclosures according to the SOX Act) frequent meetings of the audit committee may be a reaction to identified problems related to control over financial reporting and may not always result from increased involvement resulting in better control [Hoitash et al., 2009]. The literature also indicates that the audit committee assesses the effectiveness of the control system and plays a key role in it. The involvement of the audit committee in the functioning of the control system over financial reporting may encourage the management board to reduce disclosures in this area, because the risk of possible irregularities is reduced [Hoitash et al., 2009].

As part of the study, it is expected that:

H3: The number of meetings of audit committees is negatively correlated with the scope of disclosures about the system of control over financial reporting.

Fama and Jensen [1983] pointed out that the greater share of independent directors in the board of directors will raise the effectiveness of the process of monitoring the board and limiting the opportunism of managers.

The numerous studies conducted so far in Europe, the United States, and Australia regarding the relationship between the independence of the board and the scope of the disclosures do not provide unambiguous results. The results of research on disclosures regarding control over financial reporting carried out among 160 companies listed on European stock exchanges in the years 2003–2005 indicate that this relationship is negative. The authors explain that a high proportion of independent board members increases the board's ability to control the actions of managers and increases the effectiveness of monitoring their activities. At the same time, a strong board means that managers are less prone to voluntary disclosures. It should be emphasized that the research was conducted among companies listed on the capital markets of European countries with a different supervision model (one-tier/two-tier) [Michelon et al., 2009]. More importantly, it is observed that the share of independent directors in the board of directors is negatively related to the scope of disclosures about the control over financial reporting (measured by the matrix of disclosures created by its authors) when the ownership is dispersed. At the same time, this dependence is positive when ownership is dominated by a largest shareholder [Michelon et al., 2009].

Research conducted among 181 companies in Australia indicates that the higher the share of independent directors in the board, the more voluntary disclosures about the strategy are presented, as well as more quantitative forecasting information [Lim et al., 2007]. What is more, the survey conducted among 350 companies listed in the United Kingdom allows us to conclude that the share of independent directors in the board of directors is positively linked to the scope of corporate community involvement [Yekini et al., 2015].

The results of research conducted among 87 companies (data from the years 1993-94) listed in Hong Kong confirm the existence of a positive relationship between the share of independent directors on the board of directors and the scope of mandatory financial disclosures [Chen and Jaggi, 2000]. Research conducted among banks listed on the London Stock Exchange indicated that the share of independent members in the committees of the board of directors is positively correlated with the level of disclosures about corporate governance (measured by the index of disclosures constructed by its author) [Stefanescu, 2012].

A study conducted among companies listed in the 1990s in the Netherlands found that voluntary disclosures about internal control and risk management systems (measured by the index of disclosures created by its authors) are positively related to the share of independent directors in the board of directors [Deumes and Knechel, 2008].

Further, the literature indicates that the existing positive relationship between the independence of the board and the scope of disclosures may be related to the fact that shareholders appointing independent board members consider that the company should have a transparent financial data reporting system. It is also highlighted that independent board members agree to sit on the board when they receive assurance regarding transparent financial reporting [Armstrong et al., 2016]. Shareholders are aware of the difficulties involved in monitoring the financial reporting process and therefore grant greater remuneration to members of the audit committee in a situation when the expectations regarding this monitoring are greater [Engel et al., 2003].

As part of the study, it is expected that:

H4: The share of independent members of supervisory boards in their total number is positively correlated with the scope of disclosures regarding the system of control over financial reporting.

The results of research on the relationship between the scope of disclosures and the concentration of ownership are not conclusive. This may be due to the method of measuring the concentration of ownership and the type of disclosures, as well as the method of measuring them.

Based on the research on disclosures regarding control over financial reporting (measured by the disclosure index created by its authors) of companies listed on European stock exchanges during the years 2003–2005, it was determined that they are negatively related to the concentration of ownership [Michelon et al., 2009]. Moreover, it was found based on the research carried out among 397 companies listed in the United States that in companies having concentrated shareholding, the level of disclosure on corporate governance was smaller [Bauwhede and Willekens, 2008]. Similar results were obtained by Hadro et al. [2017], who examined the scope of disclosures included in the letters to the shareholders of the 60 largest companies listed on the Polish capital market.

The research results presented in the literature also indicate a different relationship. Majority shareholders who play an important role in corporate governance are more motivated to monitor the activities of managers because of their large investment [Shleifer and Vishny, 1986, 1997]. By monitoring the activities of managers, pressure is exerted on them, which means that they are encouraged to reveal the quality of financial reporting and of the entire accounting system by disclosing voluntary information on control over financial reporting [Bronson et al., 2006].

As part of the study, it is expected that:

H5: The concentration of ownership is positively correlated with the scope of disclosures about the system of control over financial reporting.

4 Organization of the study

4.1 Research group

The research group comprised of companies from the Warsaw WIG 30 index and the German DAX index in 2013, which included the largest public companies listed on the Warsaw Stock Exchange and on the Frankfurt Stock Exchange. It was assumed that companies belonging to the WIG 30 and DAX indexes constitute a kind of “litmus test” for both stock exchanges, in the area of reporting practice and corporate governance standards apart from other areas. The number of companies included from both indexes is 30, which facilitates the comparability of results. One company belonging to the WIG 30 index was excluded from the survey as it did not disclose information on the system of control over financial reporting in 2013. The data were obtained from both the consolidated annual reports presented in 2013 and websites, and were manually collected.

4.2 Model specification and measurement of variables

Measuring the scope of non-financial disclosures is one of the key problems that researchers encounter when constructing research tools. Various measures of the scope of disclosures can be found in the literature, such as words, sentences, pages [Gray et al., 1995; Schroeder and Gibson, 1990; Marston and Shrives, 1991]. Disclosure indexes are also used to measure non-financial disclosures. Bauwhede and Willekens [2008] measured corporate governance disclosures using the Deminor Rating of disclosure on corporate governance. The Internal Control Disclosure Index was used in the research on the scope of disclosures in the area of control over financial reporting conducted by Deumes and Knechel [2008]. Michelon et al. [2009] used the elaborated

Total Internal Control System Disclosure Score to measure disclosures on control over financial reporting. It should be noted that the above mentioned disclosure indexes cover differentiated corporate governance issues which are not always directly related to the control system over financial reporting. Importantly, these indexes are tailored to the corporate governance model operating in a given country to some extent.

In our present study, the disclosures are measured by the number of detailed disclosures about control over financial reporting presented by the surveyed companies. A detailed list of the above disclosures was developed as part of qualitative research conducted among the companies of the WIG 30 and DAX index. The data was obtained from the annual reports of the surveyed companies. First, the areas of disclosures regarding the control system over financial reporting were identified in the reports of the examined companies and then a detailed analysis of these disclosures was made. Nearly 152 detailed disclosures regarding control over financial reporting have been identified (cf. Appendix).

The explanatory variable reflects the total number of detailed disclosures regarding the control system over financial reporting presented by a given company (cf. Appendix).

During the research process, five explanatory variables and one control variable regarding the value of assets were identified (cf. Table 1). The article assumes, similarly to the research conducted in the United States by Bronson et al. [2006], that there is a positive relationship between the scope of disclosures about the system of control over financial reporting and the size of the company measured by the value of assets.

Table 1. Definitions of variables

Variable	Meaning	Measure
Dependent variable		
SD	Scope of disclosures	Number of detailed disclosures regarding the system of control over financial reporting presented in the annual report
Independent variables		
CSB	Supervisory board committees	Number of supervisory board committees
MSB	Meetings of the supervisory board	Number of meetings of the supervisory board in a year
MC	Meetings of the audit committee	Number of meetings of the audit committee in a year
IMSB	Independent members of the supervisory board	In the case of companies listed in Poland, this variable was measured by the share of independent members of the supervisory board in the total of all members. In the case of companies listed in Germany, this variable was measured by the share of independent members of the supervisory board in the total number of supervisory board members who are shareholders' representatives. When measuring the variable, employees' representatives on the supervisory board were not taken into account. In most companies they make up half of the board's composition, and the surveyed companies indicated that these members always have the status of independent members.
LBS	The largest block of shares	The size of the largest block of shares
Control variables		
A	Assets	Value of the total assets in thousand euro

Source: Author's own compilation.

5 Results

5.1 Descriptive statistics

The research results indicate that, on average, companies presented about 14 detailed disclosures regarding control over financial reporting. The median number of supervisory board committees is three. Importantly, there are companies in which there are eight supervisory board committees. Members of the supervisory board meet more often than members of audit committees. The maximum number of meetings of supervisory boards was 22, while of the audit committee 11. The share of independent members in the total number of members of the supervisory board was on average 0.51. The average value of assets in the surveyed companies was 87,213,343.39 thousand euro (cf. Table 2).

Normally, the companies listed in Poland presented more than 12 detailed disclosures in the system of control over financial reporting. The minimum number of detailed disclosures was 3, while the maximum number was 25. The median number of committees of the supervisory board was found to be 3. The most important point is that there were companies without any supervisory board committees among the companies listed in Poland. The average share of independent members of the supervisory board among the entire board was 0.36. For Polish listed companies, the average size of the largest block of shares was 0.44. The average Asset value was at 9,560,322.77 thousand euro (cf. Table 2.).

Companies listed in Germany presented almost 16 detailed disclosures on average associated to control over financial reporting. The median number of committees of supervisory boards was 4. The median number of meetings of supervisory boards was 5. The average of the share of independent members of the supervisory board among the total number of members representing shareholders was 0.65. It should be noted that in Germany that the supervisory board consists of employee representatives in addition to representatives of shareholders. The average share of the largest shareholder was found to be 0.18. Moreover,

Table 2. Descriptive statistics

		Statistics						
		SD	**CSB**	**MSB**	**MC**	**IMSB**	**LBS**	**A**
Companies from the WIG 30 and DAX index	**N**	**59**	**59**	**56**	**50**	**59**	**59**	**59**
	Mean	14.05	3.49	7.41	5.62	.51	.31	87,213,243.39
	Median	14.00	3.00	6.00	5.00	.50	.29	16,778,500.00
	Standard deviation	5.68	1.78	3.60	2.28	.28	.21	238,287,779.20
	Minimum	3	0	4	0	.00	.00	269,996.00
	Maximum	25	8	22	11	1.00	.75	1,611,400,000.00
Companies from the WIG 30 index	**N**	**29**	**29**	**26**	**20**	**29**	**29**	**29**
	Mean	12.21	2.31	9.15	6.35	.36	.44	9,560,322.77
	Median	12.00	3.00	8.00	6.00	.36	.44	4,894,776.00
	Standard deviation	6.07	1.20	4.50	2.323	.21	.18	12,093,603.20
	Minimum	3	0	4	2	.00	.13	269,996.00
	Maximum	25	4	22	11	1.00	.75	48,039,909.00
Companies from the DAX index	**N**	**30**	**30**	**30**	**30**	**30**	**30**	**30**
	Mean	15.83	4.63	5.90	5.13	.65	.18	162,277,733.30
	Median	14.00	4.00	5.00	5.00	.61	.10	35,391,000.00
	Standard deviation	4.71	1.50	1.56	2.14	.28	.16	318,687,882.50
	Minimum	8	2	4	0	.00	.00	5,798,000.00
	Maximum	25	8	10	11	1.00	.59	1,611,400,000.00

SD, Scope of disclosures; CSB, Number of supervisory board committees; MSB, Number of meetings of the supervisory board; MC, Number of meetings of the audit committee; IMSB, Independent members of the supervisory board; LBS, the largest block of shares; A, Assets.

Source: Author's own compilation.

the average value of assets was estimated as 162,277,733.30 thousand euro when all the companies listed in Germany were considered (cf. Table 2).

The existing key differences are identified between companies belonging to both the WIG 30 and DAX indexes. Generally, the companies in the DAX index presented more detailed disclosures related to the control system over financial reporting than the companies in the WIG 30 index. Further, more committees of supervisory boards were appointed in companies listed in the DAX index rather than companies in the WIG 30 index. The average share of independent members in the supervisory board was higher in companies of the DAX index when compared to companies of the WIG 30 index. On the other hand, the concentration of ownership was definitely lower in companies listed in the DAX index than the companies of the WIG 30 index.

The scope of disclosures variable (SD) was significantly (at $p < 0.01$), positively related to the number of supervisory board committees (CSB).

Correlation analysis indicates that the number of supervisory board committees (CSB) was also significantly (at $p < 0.01$), positively correlated with the share of independent members of the supervisory board in the total number of members (IMSB). At the same time, the number of supervisory board committees was correlated negatively in a significant manner (at $p < 0.01$)to ownership concentration (LBS). The higher the concentration of ownership the smaller the number of committees of the supervisory board (cf. Table 3). The correlation analysis includes variables which were used in the regression model.

Table 3. Correlations between variables (Pearson's coefficient)—companies from the WIG 30 and DAX indexes

	SD	CSB	MSB	MC	IMSB	LBS	A
SD	1.000						
CSB	.496**	1.000					
MSB	.203	−.115	1.000				
MC	−.145	.135	.328*	1.000			
IMSB	.248	.399**	−.297*	.031	1.000		
LBS	−.119	−.509**	.262	−.023	−.516**	1.00	
A	.115	.362**	−.052	.340*	.233	−.319*	1.000

*$p < 0.05$; **$p < 0.01$

SD, Scope of disclosures; CSB, Number of supervisory board committees; MSB, Meetings of the supervisory board; MC, Number of meetings of the audit committee; IMSB, Independent members of the supervisory board; LBS, the largest block of shares; A, Assets.

Source: Author's own compilation.

5.2 Regression results

A linear regression model was built in our work to indicate the importance of the impact of individual corporate governance mechanisms on the scope of disclosures related to the control system over financial reporting.

The best model which was constructed based on the companies from both indexes explains the scope of disclosures in approx. 23%. On the basis of the data set obtained, no better explanation could be found, and the proposed one confirms most of the results of previous research. The dependent variable has the features of normal distribution (statistics; 967, *df* 59, $p > 0.05$ in the Shapiro-Wilk test). The residuals have a normal distribution (statistics; 983, *df* 50, $p > 0.05$ in the Shapiro-Wilk test). The modeling results indicate that the following explanatory variables are significant: Supervisory board committees (CSB at significance level $p < 0.01$), Supervisory board meetings (MSB at significance level $p < 0.01$), and Audit committee meetings (MC at level $p < 0.05$). The number of meetings of the supervisory board affects the scope of disclosures to the greatest extent. None of the model parameters introduces the collinearity into the model (cf. Table 4).

The research results confirm hypothesis No. 1 ($p < 0.01$), i.e., with the increase in the number of supervisory board committees (CSB), the scope of disclosures about the control system over financial reporting (SD)

Table 4. Regression analysis (Model 1). Dependent variable: Scope of disclosures

Type of model	Expected direction	Model 1. Companies from the WIG 30 and DAX index
1	2	3
N		59
		Beta coefficients
CSB	+	$.457^{**}$
MSB	+	$.452^{**}$
MC	-	$-.371^{*}$
IMBS	+	.218
LBS	+	.147
A	+	.037
Models		Values
Adj. R^2		0.230
F		3.440^{**}

$^{\dagger}p < 0.1$; $^{*}p < 0.05$; $^{**}p <$ 001

Predictors: (Constant); CSB, Number of supervisory board committees; MSB, Number of meetings of the supervisory board; MC, Number of meetings of the audit committee; IMSB, Independent members of the supervisory board; LBS, the largest block of shares; A, Assets.

Source: Author's own compilation.

increases. This is confirmed by the conclusions presented in the literature that better controlled companies will have a better control system, and these companies will reveal more information about this system [Bronson et al., 2006]. The obtained research results complement other studies which showed a positive impact of the supervisory board committees on disclosures in the area of corporate governance [Stefanescu, 2012]. Moreover, the literature draws attention of the influence of one of the committees, i.e., the effect of audit committee on the scope of financial disclosures [Bedard et al., 2004] and voluntary non-financial disclosures [Krishnan, 2005]. The study proved that other committees also have a positive influence on the scope of disclosures regarding control over financial reporting.

The obtained results of the research confirmed hypothesis No. 2 ($p < 0.01$). This means, when the number of meetings of supervisory boards (MSB) is greater, then the scope of disclosures about the control system over financial reporting (SD) will be higher. The research results supplement the current knowledge on the impact of the activity (manifested by the number of meetings) of supervisory boards on the scope of non-financial disclosures regarding the system of control over financial reporting. According to the literature, the influence of active board on the precision of forecasts presented in the companies' reports and on the scope of financial disclosures can be determined [Karamanou and Vafaes, 2005].

The results of the research confirmed hypothesis No. 3 ($p < 0.05$), according to which the number of meetings of audit committees (MC) is negatively related to the scope of disclosures about the control system over financial reporting (SD). The research results indicate that the more active the audit committees, the smaller the scope of disclosures about the control system over financial reporting. These results differ from the results of surveys conducted on the companies listed in the United States in the year 1998 [Bronson et al., 2006]. At the same time, the obtained results are consistent with the opinions presented in the literature that the involvement of the audit committee in the functioning of the control system over financial reporting encourages management to reduce disclosures in this area [Hoitash et al., 2009]. The conducted study complements the research results presented so far and it indicates that an active audit committee is a substitute for the system of control over financial reporting in today's corporate governance.

Hypothesis No. 4, that there is a relationship between the share of independent members of supervisory boards in the total number of board members (IMSB) and the scope of disclosures about the system of control over financial reporting (SD) has not been confirmed. The impact of IMSB on the variable SD is statistically insignificant in the constructed model.

Hypothesis No. 5, according to which the concentration of ownership (LBS) is correlated with the scope of disclosures about the system of control over financial reporting (SD) is not confirmed. When analyzed the companies included in the survey, it was found that the concentration of ownership did not affect the scope of disclosures (it was statistically insignificant). It should be noted that there is no unambiguity as to the direction of the impact of this variable on the scope of disclosures according to the literature [Bronson et al., 2006; Bauwhede and Willekens, 2008].

The estimated descriptive statistics indicate a number of differences between the corporate governance practice in Poland and Germany. Therefore, it was decided to construct two consecutive linear regression models taking into account data for only one of the stock exchanges (estimates were made in groups). These models explain to a greater extent the impact of selected variables on the scope of disclosures about the system of control over financial reporting. The first model uses data on companies listed in Poland, while the second uses data on companies listed in Germany.

The best of the prepared models explains the changes in the scope of disclosures presented by companies listed in Poland in approx. 27%. The dependent variable has a normal distribution (statistics; 963, *df* 29, $p > 0.05$ in the Shapiro-Wilk test). Moreover, the residuals of the model have a normal distribution (statistics; 981, *df* 26, $p > 0.05$ in the Shapiro-Wilk test). The modeling results indicate that the following independent variables are significant: Supervisory board committees (CSB at $p < 0.05$) and Supervisory board meetings (MSB at $p < 0.05$) (cf. Table 5). None of the model parameters introduces collinearity into the model.

The model for companies listed in Germany explains changes in the scope of disclosures presented by companies in approx. 25%. The dependent variable has no normal distribution characteristics (statistics; 901, *df* 30, $p < 0.05$ in the Shapiro-Wilk test). The model residuals have a normal distribution (statistics; 972, *df* 30, $p > 0.05$ in the Shapiro-Wilk test). Modeling results indicate that the following independent variables are significant: Supervisory board committees (CSB at $p < 0.01$), Audit committee meetings (MC at $p < 0.05$) and Independent supervisory board members (IMSB at $p < 0.05$) (cf. Table 5). None of the model parameters introduces collinearity into the model.

When the models estimated separately for companies listed in Poland and Germany are compared, it indicated different variables affect the scope of disclosures about the system of control over financial reporting (SD) in these two groups of companies. The strength of the influence of individual variables is also different. For both constructed models for particular groups of companies, the number of supervisory board

Table 5. Regression analysis (Model 2 and 3). Dependent variable: Scope of disclosures

Type of model	Expected direction	Model 2. Companies from the WIG 30 index	Model 3. Companies from the DAX index
1	2	3	4
N		29	30
		Beta coefficients	Beta coefficients
CSB	+	.384*	.530**
MSB	+	.363*	
MC	-		−.515*
IMBS	+		.381*
LBS	+	.310†	
A	+	−.137	.144
Models		Values	Values
Adj. R^2		0.271	0.253
F		3.328*	3.460*

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Predictors: (Constant); CSB, Number of supervisory board committees; MSB, Number of meetings of the supervisory board; MC, Number of meetings of the audit committee; IMSB, Independent members of the supervisory board; LBS, the largest block of shares; A, Assets.

Source: Author’s own compilation.

committees (CSB) affected the scope of disclosures related to the system of control over financial reporting (SD). In the case of German companies this influence was definitely stronger. Analysis of descriptive statistics indicates that committees of supervisory boards are more often appointed in German companies than in Polish companies. In German companies the maximum number of committees was 8, while in Poland only 4.

The supervisory board meetings variable (MSB) significantly ($p < 0.05$) and positively affected the scope of disclosures (SD) of companies listed in Poland. But, in the case of companies listed in Germany, this variable was excluded from the model because it was irrelevant and caused a significant deterioration of the model. Descriptive statistics indicate that in companies listed in Germany, supervisory boards met much less frequently than the companies listed in Poland.

The audit committee meetings variable (MC) had a significant ($p < 0.05$) and negative impact on the scope of disclosures (SD) presented by companies listed in Germany. But for the companies listed in Poland, this variable was excluded from the model because it was irrelevant and caused a significant deterioration of the model. This may be due to a small number of observations—only 20 companies from the WIG 30 index disclosed information on the frequency of meetings of the audit committee for the year 2013.

The independent members of the supervisory board variable (IMBS) significantly ($p < 0.05$) and positively affected the scope of disclosures (SD) presented by companies listed in Germany. But for the companies listed in Poland, this variable was excluded from the model because it was irrelevant and caused a significant deterioration of the model. It should be noted that in the case of German companies the share of independent members among the total number of members was definitely higher than in companies listed in Poland.

The largest block of shares variable (LBS) significantly ($p < 0.1$) and positively affected the scope of disclosures regarding control over financial reporting (SD) presented by companies listed in Poland. For the companies listed in Germany, this variable was excluded from the model because it was irrelevant and caused a significant deterioration of the model.

6 Conclusions

The content presented in the article complements research results presented in the literature. The study was a comparative one in nature and was conducted among companies from developed and developing capital markets. As part of the study, the number of detailed disclosures regarding the system of control over financial reporting was used as a dependent variable.

The research results indicate that selected corporate governance mechanisms affect the scope of disclosures regarding the system of control over financial reporting. It was established that the quality of corporate governance, manifested in the number of supervisory committees and the number of meetings of the supervisory board influenced the scope of disclosures positively.

The study found that meetings of the audit committee are negatively correlated with the scope of disclosures about the control system. This may be due to the specifics of these disclosures. Further, the issues may be of particular interest to audit committees. This committee is tasked, inter alia, with assessing the effectiveness of this system. The research results indicate that an active audit committee can be treated as an alternative monitoring mechanism to the scope of disclosures on the system of control over financial reporting.

The results of the research also indicate the role of national determinants of the scope of disclosures. When German and Polish companies are considered, the number of supervisory board committees had a significant impact on the scope of disclosures, although the impact varied. It seems, therefore, that the institution of the supervisory board committees transferred from the Anglo-Saxon system to continental Europe plays an important role in corporate governance.

The number of meetings of supervisory boards and the concentration of ownership had a positive impact on the scope of disclosures in Polish companies. It should be noted that in the case of Polish companies, unlike in German companies, the concentration of ownership was high.

When German companies are considered, the scope of disclosures was affected by variables indicating high-quality corporate governance, i.e., the number of supervisory committees, the number of meetings of audit committees, and the share of independent members among the total number of supervisory board members. It was also shown that the number of meetings of audit committees adversely affects the scope of disclosures.

The nature of disclosures about the system of control over financial reporting provides them a good tool for examining the level of transparency of companies. The scope of disclosures depends on the managers, who may treat these disclosures as inside information. Because of these high disclosures, the management board of the companies' signals to capital market participants that the reliability of financial statements is highly ensured.

One of the basic limitations of the research is the relatively small number of companies that were analyzed. Another limitation is related to the fact that the survey was conducted among companies representing a similar model of corporate governance, which may make it difficult to translate the research results to, e.g., Anglo-Saxon countries.

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Appendix

Detailed disclosure items regarding control over financial reporting.

A.1 Disclosure category

Internal control system and risk management—general information.
Detailed disclosures: (1) Principles of risk management associated with preparing financial statements; (2) The benefits resulting from internal control and risk management (principles of an effective system). E.g., the system ensures the effectiveness, reliability, completeness, and timeliness of financial and management information and involves supervision and monitoring of a company's liabilities, costs, and results on a day-to-day basis; (3) The unit (units) responsible for internal control (companies indicated the management board or chief accountant or accounting department); (4) The tasks of individual units operating within a company related to the functioning of internal control and risk management; (5) Elements of internal control and risk management; (6) The concept of the three lines of defense related to internal control and risk management systems; (7) Self-control of the accuracy of one's own work, including the quarterly self-assessment process; (8) Substantive and formal-accounting control/functional and institutional control; (9) Use of the COSO model for the construction and development of internal control; (10) Links of the internal control and risk management chain; (11) The management board has the company periodically assessed by an external entity for the operation of internal control and the risk of fraud; (12) Functional control tasks (checking that processes are running correctly, analyzing whether the procedures are performed by employees, whether there is a conflict of interest, monitoring financial reporting, checking if the regulations are observed); (13) Functional control is performed in the form of self-control, vertical and horizontal functional control and automation of processes performed by IT systems; (14) Application of internal controls (segregation of duties, data authorization, verification of the accuracy of received data, independent checks); (15) Checks on data integrity, hardware controls, operational controls and authorization checks; (16) A general financial security management system consisting of: liquidity, exchange rate risk and budget development and control; (17) At the end of the year, the management board reviews the effectiveness of the control system (e.g., management self-audit, internal audit findings); (18) The company regularly assesses the quality of the internal control system and risk management in relation to the process of preparing financial statements; (19) Quarterly self-assessment of the effectiveness of control processes; (20) The system's effectiveness may be limited by discretionary decisions, offenses, defective elements of the control system and other events; (21) The control system integrated with the financial reporting system; (22) The control system ensures compliance of the entity's accounting with IFRS/German GAAP; (23) The control system ensures compliance of the entity's accounting with stock exchange regulations, including the regulation on current and periodic information; (24) The effectiveness of the system is assessed sequentially on a self-assessment basis. First, the system is assessed by the person involved in the system, followed by the manager and then the management board.

A2. Disclosure category: Organization of the accounting system

Detailed disclosures: (1) The principle of separation of functions (accounting, supervision, approval) (administration, implementation, implementation, authorization); (2) Tasks and responsibilities are precisely defined; (3) The principle of double control (dual-control principle), (four-eyes principle); (4) The established disclosure committee, which controls individual financial and non-financial information prior to its publication; (5) At the beginning of the year, accounting items and fragments of processes exposed to risk are selected and evaluated by external auditors for the effectiveness of the system; (6) An independent department is set up in the company to ensure that the financial statements comply with the law and internal regulations; (7) Controlling Department exercises control over current processes and financial and operational plans as well as over preparation of financial reports; (8) A separate department which deals with the control of separate financial statements before consolidation; (9) All companies of the group must use the same company [corporate] chart of accounts; (10) Regularity and reliability of financial reports is checked by a special accounting and control group; (11) The use of independent advisors specializing in post-employment benefits by the management board. Outsourcing some work, such as valuing projected obligations and share-based payment obligations as well as purchase price allocations in the context of asset acquisitions and business combinations; (12) A special internal group of experts dealing with the valuation of balance sheet items; (13) Separating the accounts of individual group companies and incorporating them into one entity dealing with accountancy; (14) The system of circulation of financial and accounting documents.

A3. Disclosure category: IT tools

Detailed disclosures: (1) Information on the use of IT tools for the needs of the system; (2) Segment reporting is carried out on a separate IT system; (3) The Central Documentation System for documenting key controls.

A4. Disclosure category: Risk

Detailed disclosures: (1) Units responsible for risk management associated with the preparation of financial statements; (2) Types of risks associated with the preparation of financial statements; (3) Risks associated with the operation of the entity; (4) Information on the creation of risk maps; (5) Information on (risk management) tools; (6) So-called owners of risks are responsible for the management of identified risks; (7) Information on the implementation of the risk management process in relation to financial reporting (identification and assessment of risk areas and determination of any actions necessary to reduce or eliminate risks); (8) Market, exchange rate and financial risk management policy; (9) The company monitors important risk factors (tax and legal, economic and operational) on an ongoing basis; (10) Solutions used to avoid the risk of erroneous estimates; (11) Group-wide risk and control matrix; (12) To minimize the risk, transactions above a certain amount must pass the authorization process; (13) A central catalog of various types of risks is created in the company.

A5. Disclosure category: The process of preparing financial statements

Detailed disclosures: (1) The entities responsible for the preparation of financial statements and supervision over these statements; (2) General information on the preparation of financial statements; (3) Information on the compliance of financial statements with accounting policy; (4) Indication that the process of the preparation of financial statements is described in the internal regulations and by the order of the chairman of the management board; (5) Information about the responsibility of the disclosure committee for the accuracy of the data contained in financial statements and their compliance with laws and regulations; (6) Information about the solutions, compliant with the IFRS, adopted to avoid incorrect estimates; (7) Internal division of responsibilities for preparing financial statements; (8) Supervision of the application of a uniform accounting policy; (9) Uniform rules and procedures for the consolidation of financial data ensured by unified reports; (10) The formal process of preparing financial statements; (11) A multi-stage process of reviewing and authorizing statements; (12) Manual adjustments are subject to a special control; (13) Unified patterns of financial statements; (14) In order to eliminate various risks associated with financial statements, the structure of the process of preparing financial statements is defined in two layers, i.e., applicative and substantive; (15) Control related to the preparation of financial statements includes: control of the input data quality, control of data mapping from source operating systems to financial statements, an analytical review based on the knowledge of specialists; (16) Shared service centers support local units in the preparation of financial statements; (17) Automated and non-automated reconciliations; (18) Accounting is carried out in subsidiaries. The mother company performs selected activities such as: consolidation, estimation of retirement benefits, impairment tests; (19) Confirmation of account balances for the entire group takes place via an internet-based platform; (20) Consultations with other departments (controlling, taxes, IT) during the preparation of financial statements; (21) A four-tier reporting process (local entity, region, business segment, group); (22) Two types of risk related to financial reporting: no true and fair view principle and timely preparation of financial statements; (23) The company checks whether the risk can be assigned to three categories: Statement on the types of business transactions, Statement on account balances at the reporting date; Statement on presentation in the financial statements and on the notes; (24) After preparation, the financial statements are subject to trend analysis and analysis of deviations; (25) Financial statements are approved by the general meeting of shareholders; (26) The financial directors of subsidiaries must annually confirm the compliance of their statements with corporate accounting standards; (27) The management signs a statement that the statement complies with the regulations and is true and fair.

A6. Disclosure category: Internal and external regulations

Detailed disclosures: (1) Information on internal regulations regarding the process of preparing financial statements (procedures, directives, inventory instructions, job cards - rules of material liability, code of ethics, regulations, accounting policy documentation, instructions, procedures) and procedures regarding incurring liabilities; (2) Information on the procedures of internal control and risk management; (3) Information on external regulations on financial reporting (The Accounting Act, International Accounting Standards, stock exchange regulations, etc.); (4) Information about tracking legislative amendments to financial statements and periodical reports; (5) The main principles of the control system result from the regulations and instructions; (6) Unified accounting policy for the whole group; (7) The accounting manual (guide) developed by the company applied throughout the group; (8) The entity follows the recommendations of the International Standards of Auditing and Quality Control, NO 315, 2009 edition; (9) Guide to internal control over financial reporting; (10) Fair Play Code of Conduct; (11) The control system is based on an internal directive regarding financial policy principles; (12) Each unit involved in the preparation of financial statements is subject to the rules and regulations of the Corporate Information Security Guide; (13) Employee responsibilities related to the control system; (14) Procedures to monitor compliance with obligations related to inside information about the company; (15) Code of Ethics for Financial Matters; (16) Management Control Catalog used to identify risks in such areas as financial reporting, CSR, offenses, communication, planning and budgeting, investment control and internal audit.

A7. Disclosure category: External audit

Detailed disclosures: (1) Information on auditing (reviewing) financial statements by an external auditor; (2) The auditor selection process; (3) Information on the use of the auditor's recommendations for improving internal control and risk management; (4) The conclusions of the external audit are submitted to the supervisory board (the audit committee); (5) Remuneration of an external auditor; (6) The method of recognizing and presenting unusual events in financial statements is consulted on a continuous basis with an auditor; (7) The auditor reviews the adequacy and effectiveness of the internal control system; (8) Duration of the contract with the external auditor; (9) Rules for changing the external auditor; (10) The auditor shall audit the risk early warning system and the risk monitoring system.

A8. Disclosure category: The supervisory board

Detailed disclosures: (1) Information related to the implementation by the board of directors of the obligations arising from responsibility for financial statements; (2) The tasks of the audit committee (the supervisory board) related to internal control and risk management, e.g., monitoring the financial reporting process and the independence of the auditor, supervisory board recommends adopting or rejecting financial statements; (3) Information on the evaluation of financial statements conducted by the supervisory board, in regard of their compliance with ledgers and documents, as well as with the true situation; (4) Assessment of the financial statement by the supervisory board; (5) Assessment of the management board's report on the activity by the supervisory board; (6) After completion of the audit of financial statements they are forwarded to the supervisory board; (7) Indications that financial statements are examined by the supervisory board during regular meetings; (8) Pre-approved financial reports are made available to the audit committee; (9) The supervisory board (including the audit committee) supervises the financial reporting process; (10) The supervisory board and the audit committee receive regular reports on the effectiveness of control systems; (11) The key types of risks are sent quarterly to the chairman of the supervisory board and to the audit committee; (12) Once a year, the types of risk related to financial reporting are presented to the supervisory board by the management board; (13) The audit committee monitors the effectiveness of the internal control system and risk management; (14) The management board submits the reports [financial statements] to the audit committee as soon as they have been prepared; (15) The management board provides the supervisory board with a report on activities and a financial statement for approval; (16) The audit committee reports to the supervisory board and other committees during the year on the activities of the committee; (17) The budget for the following year and the business plan is approved by the supervisory board; (18) The supervisory board includes two members who meet the independence criteria; (19) Preparation and distribution of periodic reports - financial statements to the management board and supervisory board.

A9. Disclosure category: Data security and protection

Detailed disclosures: (1) Information on the safety and security of financial reporting data; (2) Control of access to financial data; (3) In the event of a system failure, unfinished transactions are withdrawn.

A10. Disclosure category: Internal audit

Detailed disclosures: (1) Operations of the internal audit which are involved in risk identification and evaluation of control mechanisms (institutional internal controls performed by the internal auditor); (2) Information on the subjection of the internal audit; (3) The audit department provides the supervisory board and the audit committee with information on possible irregularities in the operation of the system; (4) Annual audit plans (programs) (in accordance with International Standards for the Professional Practice of Internal Auditing); (5) The internal audit may perform ad hoc audits commissioned by the management board or the supervisory board; (6) The internal audit makes an independent assessment of the adequacy, correctness and effectiveness of the existing systems of internal control and risk management; (7) The results of the internal audit work are forwarded to the board of directors and the supervisory board or to the audit committee; (8) The internal audit is independent of and functionally subordinate to the audit committee; (9) Internal audits of financial statements in subsidiaries; (10) Internal audits of financial statements in subsidiaries when the statements are not required to be audited by an external auditor; (11) Twice a year a report is prepared summarizing the conclusions of the audit tasks carried out and the implementation of the auditor's financial statement recommendations are monitored; (12) The internal audit conducts a risk self-assessment process on an annual basis and carries out tests of control mechanisms; (13) The internal audit director is present at the meetings of the management board and the supervisory board concerning controls.

A11. Group of disclosures: Managerial accounting

Detailed disclosures: (1) The budgetary control system (including compliance with the strategic plan) as part of the control system over financial reporting; (2) Information on the periodic review of the financial results, implementation of the strategy and operational plans (including economic and financial plans); (3) Information on the use (also for the preparation of financial statements) of periodic reports with management information on key financial and operational indicators of business segments; (4) Accounting policy applied both in financial reporting and management reporting.

A12. Disclosure category: Other disclosures

Detailed disclosures: (1) Information regarding the first place in the competition for the best annual report; (2) The consolidated report of the management board is prepared in consultation with subsidiaries; (3) Regular training for employees involved in financial reporting; (4) Skills of employees of accounting departments are verified in the recruitment process; (5) Employees have appropriate qualifications in the area of accounting; (6) Information on the implemented ISO systems.