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CORPORATE GOVERNANCE GOOD PRACTICES AND THE PROFITABILITY OF COMMERCIAL BANKS IN POLAND

Introduction

The codes of corporate governance good practices are a well-established element of the contemporary capital market. The development of the codes[1] which was started in UK in1990s supports the stability of the capital market and increases the protection of investors. As regards banks, the codes are an additional element – apart from supervisory and self-regulations –that disciplines and supports effective corporate governance. The concept of corporate governance codes assumes that their acceptance is optional, which means that companies decide themselves on the application of the recommended practices and on the degree to which they are going to follow them.

The aim of the article is to investigate which bank characteristics coincide with the implementation of the principles of corporate governance in companies that listed on the Warsaw Stock Exchange (GPW) and to check whether the compliance to the rules coincides with bank profitability measures. The empirical part of the article presents estimate parameters of regression models for panel data, where dependent variables were the profitability and the compliance measures of corporate governance rules on GPW, while independent variables represented various characteristics of banks

1. Good practices of corporate governance in banks

The term *corporate governance code* or *code of good practices in corporate governance* refers to a formally non-binding (as opposed to legal regulations) set of rules (guidelines), standards or good practices that concern various issues of corporate governance[2]. The codes provide companies with voluntary instruments whose implementation aims at the elimination

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[1] The first code of good corporate practices was published in Great Britain in 1992 as a reaction to numerous financial scandals in British corporations. See: A. Cadbury, *The Report on the Financial Aspects of Corporate Governance*, Gee, 1992.

[2] K. Oplustil, *Instrumenty nadzoru korporacyjnego (corporate governance) w spółce akcyjnej*, C.H. Beck, Warszawa 2010, p. 74.

of the weaknesses of particular systems of corporate governance[3]. The notion of the codes of good practices is based on the *comply or explain* principle, which implies that companies are not obliged to comply with the guidelines included in codes but they have to state which principles they depart from as well as to explain the reasons for this. The publication of the above statement by companies is subject to control of supervisory bodies.

The codes of good practices have various functions in corporate governance systems; first of all their objective is to[4]:

- increase the protection of investors on capital markets – through the formulation and implementation of high supervisory standards that exceed the statutory provisions of share-holding companies;
- stimulate the international competition of capital markets – through the promotion of corporate good practices and, consequently, through the stimulation of activities on particular markets of potential investors and share-issuers;
- inform foreign investors about the regulations that are in force in a given country as regards share-holding companies and the accepted corporate standards;
- be a benchmark for on-going or periodic corporate governance compliance assessments – by publishing rankings with regard to corporate governance compliance;
- support the issue of new provisions or institutions – by offering the opportunity for optional "testing" of particular solutions prior to the introduction of the obligation to implement them by all companies.

The codes of corporate good practices are general in character but they also concern particular branches. As regards banks, the following codes are of particular significance:

1) Basel corporate governance principles,
2) Good practices of companies listed on GPW,
3) Corporate governance principles of institutions supervised by the Polish Financial Supervision Authority (KNF).

Table 1 presents crucial information regarding the principles of corporate governance for banks.

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[3] I. Kołodkiewicz, *Dobre praktyki ładu korporacyjnego oraz ich transfer do twardego prawa. Perspektywa interesariuszy polskiego rynku kapitałowego*, „Studia Prawno-Ekonomiczne", 2014, No. XCI/2, pp. 193 – 212.
[4] K. Oplustil, *Instrumenty nadzoru…*, op. cit. pp. 77 – 79.

Table 1. Corporate governance codes of good practices for banks

Name	Structure and range of regulations	Dates of subsequent versions
Basel corporate governance principles,	13 principles grouped in 8 areas: • Board – its overall responsibilities (principle 1), qualifications and composition (principle 2), internal structure and practices (principle 3); • Senior management (principle 4); • Governance of capital group structures (principle 5); • Risk management – risk management functions (principle 6), risk identification, monitoring and controlling (principle 7), risk communication system (principle 8); • Compliance and internal audit (principles 9 and 10); • Compensation system (principle 11); • Information disclosure and transparency (principle 12); • The role of supervising bodies (principle 13).	1999, 2006, 2010, 2015
Good practices of GPW listed companies	20 recommendations and 47 specific principles grouped in 6 chapters: • Disclosure policy and investor communications • Management Board and Supervisory Board • Internal systems and functions • General Meeting and shareholder relations • Conflict of interest and related party transactions • Remuneration	2005, 2007, 2010, 2011, 2013, 2015, 2016
Principles of corporate governance for institutions supervised by the Polish Financial Supervision Authority (KNF)	57 items grouped in 9 chapters: • Organization and organizational structure • Relations with the supervised institution's shareholders • Executive body • Supervisory body • Remuneration policy • Communication policy • Promotional activities and client relations • Key systems and internal functions • Execution of rights resulting from assets acquired at client's risk	2014

Source: Author's research based on: BCBS, *Corporate governance principles for banks*, 2015; GPW, *Dobre Praktyki Spółek Notowanych na GPW*, 2016; KNF, *Zasady ładu korporacyjnego dla instytucji nadzorowanych*, 2014.

2. Investigation method and procedure

The analysis was conducted in a group of banks listed on GPW with the WIG-BANKI sector index in 2005 – 2015. The econometric analysis included the construction and estimation of the regression model parameters for panel data. The data on the implementation of the GPW principles of corporate governance were obtained from annual bank statements that were published on their websites. The other data came from the analysis of the banks' financial reports. The market data (stock return rates) were obtained from www.infostrefa.com. The

characteristics of variables that were applied in the investigation and their sources are given in Table 2.

Table 2. Variables used in the investigation

Variable name	Specification	Data source
DPS_IND	Index of compliance to good practices in GPW listed companies	Bank statement on corporate governance
DPSZ_IND	Index of compliance to good practices in GPW listed companies with regard to management boards	Bank statement on corporate governance
DPSRN_IND	Index of compliance to good practices in GPW listed companies with regard to supervisory boards	Bank statement on corporate governance
ASSETS	Bank asset value (in million zlotys)	Bank financial reports
LNASSETS	Natural logarithm of total assets	Author's calculations based on bank financial reports
E-A	Capital ratio (equity/assets)equity	Author's calculations based on bank financial reports
ROE	Return on equity index (net result/equity)	Bank financial reports
ROA	Return of assets index (net result/assets)	Bank financial reports
RETURN	Stock return rate of the bank	www.infostrefa.com
VAR	Stock return rate variance	Author's calculations based on bank financial reports
SHAREH	Share of the first biggest shareholder in the bank's capital	Bank annual reports
WIG-B REL	Stock return rate of the bank in relation to the WIG-BANKI index return rate	Author's calculations based on bank financial reports
LNZ	Natural logarithm of Z-score index presenting bank security ((ROA+E-A)/standard ROA deviation)	Author's calculations based on bank financial reports

Source: Author's research.

The modeling of panel data requires the use of an adequate type of a model. The numerous group of models includes the following three basic ones[5]:

1) pooled models,
2) fixed effect models (FE models),
3) random effect models (RE models).

First, in order to select an adequate model for the investigation, a pooled model was used. In such models, the pool is treated as a set of cross-sectional data and the estimation of its parameters is conducted with the use of the classic least squares method (LSM)[6]. Then, in order to check whether the model can be estimated with LSM, the hypothesis on the existence of

[5] K. Kopczewska, T. Kopczewski, P. Wójcik, *Metody ilościowe w R. Aplikacje ekonomiczne i finansowe,* CeDeWu, Warszawa 2009, p. 309.

[6] T. Kufel, *Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu GRETL*, PWN, Warszawa 2013, pp. 173 – 177.

individual effect had to be verified. To do this, the Lagrange multiplier, also referred to as Breusch-Pagan test, was applied[7] which check whether the variance of the individual effect component equals zero. The test result confirmed the lack of the possibility to apply LSM to estimate the model and, consequently, individual effects had to be introduced.

Thus, in the next stage of the investigation the choice had to be made between FE and RE models. To do this, general recommendations were applied as well as statistical tests that compared the estimators' characteristics. The general recommendations concern the relations between the number of entities (N), the number of time periods (T) and the nature of the entities under investigation. If $T > N$, it is possible to introduce to model N dummy variables that refer to particular entities and then a FE model will be most adequate. If $T < N$, it is recommended to consider the differences between the entities and here an RE model is appropriate. On the other hand, due to the nature of the entities under investigation, an FE model is more suitable in the case of the same entity types (e.g. countries, industry sectors, global enterprises). However, if the entities are selected randomly from a given population (e.g. households, small businesses), RE model will be most appropriate[8]. The choice of either FE or RE model that is based on statistical tests will consist in the verification whether group effects are not correlated with independent variables. The existence of such correlation implies that also the random component is correlated to independent variable. Then, the RE estimator loses its consistency and an FE model should be used. Definitely, the Hausman test is the most preferred test of this type[9].

Following the general recommendations that regard the nature of the entities under investigation, the FE model seems more appropriate. However, the results of the Hausman test imply that this model is ineffective. As a result, RE model parameters were estimated in the investigation and the equation of the model was as follows:

$$y_{it} = \alpha + \beta_1 x_{1,it} + \cdots + \beta_k x_{k,it} + e_{it} \qquad (1)$$

where:

[7] The test was presented for the first time in the article: T.S. Breusch, A.R. Pagan, *The Lagrange Multiplier Test and its Applications to Model Specification in Econometrics,* „Review of Economic Studies", 1980, Vol. 47, No. 1, pp. 239 – 253.

[8] B. Dańska-Borsiak, *Dynamiczne modele panelowe w badaniach ekonomicznych,* Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2011, pp. 49 – 50.

[9] According to the zero hypothesis test, group effects are not correlated with independent variables. The lack of grounds to reject the zero hypothesis implies that both estimators (FE and RE) are consistent; however FE is ineffective and consequently RE is the preferred one. The test was presented for the first time in: J.A. Hausman, *Specification tests in Econometrics,* „Econometrica", 1978, Vol. 46, No. 6, pp. 1251 – 1272.

y_{it} – dependent variable,

α – constant of the model,

β_k – regression coefficients for independent variables $x_{k,it}$,

e_{it} – total random component for one-way model $e_{it} = v_i + \varepsilon_{it}$ which is the sum of individual random effects v_i and white noise disturbance ε_{it}.

For the purpose of the investigation the Author had access to the panel data for 15 banks listed on GPW in 2005-2015. As the number of observation years was not equal for all banks (2-11 years), the data constituted the so called unbalanced panel. However, due to the specific features of RE models, a balanced panel had to be used finally[10]. Thus, the panel included the observations for 10 banks in 11 years – 2005-2015 (see Table 3). The computations were conducted in Gretl and R CRAN statistical package (*Comprehensive R Archive Network*).

Table 3. Banks under investigation

No.	Bank	Abbreviation
1	Bank Ochrony Środowiska	BOS
2	Bank BPH	BPH
3	Bank Zachodni WBK	BZWBK
4	Getin Holding	GETIN
5	Bank Handlowy w Warszawie	HANDLOWY
6	ING Bank Śląski	INGBSK
7	mBank	MBANK
8	Bank Millennium	MILLENIUM
9	Bank Polska Kasa Opieki	PEKAO
10	Powszechna Kasa Oszczędności Bank Polski	PKOBP

Source: Author's research.

3. Investigation results

Table 4 presents descriptive statistics of the variables that were used in the investigation. Despite the fact that all the banks were in the same stock market index, they differed significantly as regards both the asset values and profitability indices. This is presented by high values of standard deviation (SD) and the coefficients of variation (C.V.). One should have in mind the fact that the investigation period covered the years of the 2007-2009 financial crisis which inevitably had an impact on such significant differences between the results. The variables that showed the least differentiation concerned the implementation of the GPW good

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[10] K. Kopczewska, T. Kopczewski, P. Wójcik, *Metody ilościowe…*, op. cit., p. 312.

practices by the listed banks. In the case of these variables the values both of standard deviation and of the coefficients of variation were low.

Table 4. Descriptive statistics of selected variables

Variable	Mean	Median	S.D.	Minimum	Maximum	C.V.
ASSETS	67583	50341	53754	2287	262380	0.795
E-A	0.117	0.109	0.063	0.050	0.673	0.537
ROE	0.110	0.114	0.076	-0.077	0.399	0.692
ROA	0.012	0.012	0.011	-0.019	0.084	0.879
RETURN	0.103	0.105	0.400	-0.912	1.172	3.883
DPS_IND	0.962	0.979	0.052	0.744	1.000	0.054
DPSZ_IND	0.995	1.000	0.010	0.949	1.000	0.011
DPSRN_IND	0.987	1.000	0.028	0.846	1.000	0.028
SHAREH	0.662	0.697	0.121	0.314	0.963	0.183
LNASSETS	17.701	17.734	0.875	14.643	19.385	0.049
WIG-B REL	0.019	0.011	0.026	0.000	0.124	1.337
VAR	5.350	4.363	3.167	0.329	16.330	0.592
LNZ	3.212	3.273	0.663	1.530	4.284	0.206

Source: Author's computations.

The investigation involved a parameter estimation of five regression models for panel data; two of them explained bank profitability measures (ROE and ROA), while the other three explained the good practices compliance level in banks (See Table 5). Initially, there were also attempts to apply market profitability measures as dependent variables (rate of return and relative rate of return on shares) but these models had insufficient parameters.

In each case the constants of models were statistically significant and the influence trends of particular variables were in line with the expectations, i.e. more profitable banks had a lower good practices compliance level. The index of compliance to corporate good practices in GPW listed companies (DPS_IND) proved to be statistically insignificant and consequently partial indices were introduced that presented the compliance of good practices with regard to management boards (DPSZ_IND), supervisory boards (DPSRN_IND) and the General Meeting of shareholders (WZA). However, due to insufficient model parameters the index concerning General Meeting was abandoned.

Table 5. Parameters of regression models with RE for panel data

	Model A	Model B	Model C	Model D	Model E
Dependent variable	ROE	ROA	DPS_IND	DPSZ_IND	DPSRN_IND
Number of observations	110	99	110	110	110
Stała	2.4776*** (0.8043)	0.1146*** (0.0280)	0.9931*** (0.1417)	1.0349*** (0.0339)	0.8525*** (0.0645)
DPS_IND	—	−0.0092 (0.0162)	—	—	—
DPSZ_IND	−1.3367* (0.7468)	—	—	—	—
LNASSETS	−0.0523*** (0.0124)	−0.0054*** (0.0012)	−0.0078 (0.0073)	−0.0029 (0.0018)	0.0055* (0.0030)
VAR	−0.0003 (0.0018)	—	—	—	—
ROE	—	—	−0.0750 (0.0540)	−0.0290** (0.0129)	−0.0225 (0.0225)
SHAREH	−0.0742 (0.0794)	−0.0025 (0.0065)	0.0591 (0.0432)	−0.0097 (0.0103)	−0.0099 (0.0201)
E-A	−0.5204*** (0.1123)	0.0281 (0.0307)	−0.1550 (0.0939)	−0.0483** (0.0223)	—
WIG-B REL	—	0.0238 (0.0215)	—	0.0026 (0.0355)	0.0557 (0.0693)
LNZ	—	—	0.0297* (0.0176)	0.0082** (0.0042)	0.0138** (0.0058)
Hausman test	Chi-square(5) = 6.7825; p = 0.2373	Chi-square(5) = 6.50862; p = 0.2598	Chi-square(5) = 6.3435; p = 0.2742	Chi-square(6) = 5.1011; p = 0.5309	Chi-square(5) = 4.4221; p = 0.4904
Breusch-Pagan test	Chi-square(1) = 17.9361; p = 0.0000	Chi-square(1) = 39.7042; p = 0.0000	Chi-square(1) = 56.242; p = 0.0000	Chi-square(1) = 46.247; p = 0.0000	Chi-square(1) = 130.844; p = 0.0000
Within of variation	0.0026	0.0000	0.0008	0.0000	0.0002
Between of variation	0.0020	0.0000	0.0008	0.0000	0.0004
theta	0.8195	0.8795	0.8064	0.8017	0.8164

Key: (standard error); *** materiality level p < 0,01; ** materiality level p < 0,05; * materiality level p < 0,1.
Source: Author's computations.

When considering bank profitability, the most significant group of corporate governance good practices were the practices that concerned the management boards. The compliance index of banks was significantly negatively correlated with their profitability in the case of two models (models A and D). The variable in the form of a natural logarithm of the asset value coincided with the banks' compliance with corporate good practices. In the investigation, an insignificant positive correlation could be noticed between the size of the bank and the compliance level in the area of supervising boards (model E). The security *Z-score* index is an important bank characteristic that coincides with the compliance to corporate good practices. This variable was significantly positively correlated to all compliance indices, both to the total one (model C) and the partial ones (models D and E).

Conclusions

The analysis was an attempt to investigate the relations between the bank's compliance to corporate good practices and their profitability with the application of quantitative methods. The conclusions of the investigation are as follows:

1) the compliance level of all banks to corporate good practices of GPW listed companies is not a good descriptor of bank financial results;

2) thanks to the isolation of corporate good practices as regards managing boards it is possible to notice a negative correlation between the compliance level and the profitability of equity capital;

3) the application of such accounting measures of profitability as ROE and ROA provides better parameters of regression models;

4) bigger banks comply to a greater degree with GPW corporate good practices, especially with regard to the area of supervisory boards.

5) the compliance of banks to corporate good practices correlates with the bank security measure in the form of *Z-score* index.

The partial correlation between the good practices compliance level of banks to the GPW principles of corporate governance and the measures of their profitability leads to the conclusion that it would be a useful direction for further analysis to attach weights to particular principles (or their groups). The weights would reflect the significance of principles as regards effective corporate governance. Moreover, due to a high number of changes to the codes of good practices, a qualitative analysis (e.g. a single- or multiple-case study) could be a different direction of further research.

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[10]   *Zasady ładu korporacyjnego dla instytucji nadzorowanych*, KNF, 2014.

Abstract

The aim of the article was to investigate which bank characteristics coincide with the implementation of the principles of corporate governance in companies listed on the Warsaw Stock Exchange (GPW) and to check whether the compliance to the rules coincides with bank profitability measures. The panel investigation conducted in ten banks that were listed on the stock exchange in 2005-2015 confirmed that the general index of compliance to corporate good practices was not a good descriptor of bank financial results. The investigation showed a negative relation between the partial compliance index and the ROE index. A positive correlation was noticed between the banks' compliance to corporate good practices and the *Z-score* security index. Moreover, it was confirmed that bigger banks complied to a greater degree with corporate good practices, especially with regard to the area of supervisory boards.