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Supervisory Board Composition and Firm Financial Performance: A Case of Companies Listed on the Warsaw Stock Exchange[1]

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Abstract

Purpose: This paper investigates the relationship between the internal governance structure and financial performance of Polish companies. Ensuring diversity of corporate boards has been on the agenda of various regulators on a national and international level as it is generally expected corporate boards that are more diverse will be more competent and more effective monitoring managerial actions, and therefore positively impact company performance.

Methodology: This paper uses a sample of companies listed on the Warsaw Stock Exchange and examines the two main compositional features of company supervisory boards (independence and experience) and their practices by companies. We also investigate the effect of diversity on company performance. As our empirical methodology, we use linear regression analysis.

Findings: Our findings support the proposal that diversity matters, especially in terms of the presence of experienced members on supervisory boards, and that such diversity positively affects financial results. In addition to the main finding, the results of the study indicate also the importance of the ownership structure. Family firms and companies with a higher level of gearing are more likely to perform less effectively.

Originality: To date, research on the association between supervisory board diversity and financial performance in either the Polish or Central and Eastern European capital markets has been limited. The paper also points to the importance of having experienced members on a company's supervisory board. Independent members on supervisory boards do not seem to have a similar association.

Keywords: diversity, supervisory boards, corporate governance, financial performance

JEL: G30, M14, M41

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Introduction

Interest in corporate governance has increased as a result of major corporate collapses at the beginning of the 21st century. The need for strong governance is evidenced by the various reforms and standards developed at international and country level. Effective corporate governance can assist in the attainment of a high level of financial performance and market valuation (Klapper and Love, 2004; Rajagopalan and Zhang, 2008; Jackling and Johl, 2009; Andrzejewski and Grabiński, 2016). Prior research indicates that board characteristics can affect the quality of a corporate board's monitoring and financial performance (Campbell and Antonio, 2008; Carter et al., 2010).

La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) argue that emerging economies have traditionally been ignored in financial markets because of their general weak governance. Even today, despite the *de jure* governance has been considered to adhere to the international standards, *de facto* corporate governance mechanism including enforcement are still considered to be weak. This paper specifically investigates aspects of corporate governance in Poland linked to the board diversity–performance nexus. The research is motivated by the Warsaw.

Stock Exchange's efforts to increase the quality of corporate governance as is explicitly stated in the Corporate Governance Code published in 2016 (WSE, 2015, p. 2). The prior literature on the topic, conducted mainly in the Anglo-American model of corporate governance indicate the importance of the independent members as well as grey directors in ensuring the effective monitoring. The goal of the paper is to verify usefulness of the recommendation of the board diversity in a setting of an CEE economy. Therefore, an investigation of aspects of the composition of supervisory boards as an important driver in corporate governance may provide some insights on the usefulness of existing polices as prescribed in the Code of Best Practices.

Starting from the first version of the Corporate Governance Best Practices Code 2002, promoters of the document and its subsequent versions have encouraged various forms of diversity among supervisory boards. The most recent version of the Code of Best Practices on the Warsaw Stock Exchange explicitly states that a company should be supervised by an effective and competent supervisory board, whose roles include issuing opinions on the company's performance (WSE, 2015). Additionally, when drafting more detailed rules (recommendation II.R.2), the Code specifies that the decision makers responsible for supervisory board appointments need to ensure that the composition of the board is comprehensive and diverse in terms of gender, education, age, and professional experience, among others (WSE, 2015).

An important question here is whether empirical evidence exists to justify these recommendations as positively contributing to firm's performance. In particular, the focus of this paper is the link between the specific characteristics of a supervisory board, such as independence and experience, as promoted in the Code of Best Practices and company financial performance based on a sample of companies listed on the Warsaw Stock Exchange. In general, based on prior research and our own observations, we hypothesize that a better profile of supervisory members (assured diversity on boards) will positively influence a company's performance.

The research is intended to shed some more insights on the composition of supervisory boards and their ability to influence financial performance. The general results of diversity studies so far provide mixed evidence on the importance of ensuring wide diversity among supervisory boards. The studies are also biased towards the Anglo--Saxon model of corporate governance. This study may provide some insights into the association between supervisory boards' composition and financial performance in the Polish setting, which has not yet been explored in depth. This study is also intended to provide insight into the worthiness of corporate governance regulations and recommendations in the Polish context. In a broader sense, the project is intended to shed more light on corporate governance systems in the context of Central and Eastern Europe (CEE), which, although the region has been explored broadly before, is characterized by a relatively new capital market and *de facto* corporate governance institutions that are still developing (Hardi and Buti, 2012; Słomka-Gołębiewska and Urbanek, 2016; Albu and Girbina, 2013).

The contemporary corporate governance system in Poland can be characterized as the "insider" model of corporate governance, in which owners monitor, oversee, and control companies from within. In this model, owners frequently take large ownership stakes in individual companies and actively cooperate with management, which enables investors to retain direct hierarchical control over management and reduce agency costs. In the insider model of corporate governance, the board of directors can be replaced by a supervisory board. The Polish capital market can be characterized as having significant ownership concentration, lower levels of protection for minority shareholders, and a stronger presence of block shareholders (Dobija and Klimczak, 2010; Rudolf, 2010; Koładkiewicz, 2011; Bohdanowicz, 2014).

The remainder of the paper is organized as follows. The next section provides the theoretical background and describes the development of the hypotheses. The third section provides the empirical design, and the fourth section reports the results. Section Five discusses the findings, and presents the implications and limitations of the paper.

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Literature review and hypotheses development

There is no single theory that can explain the general patterns of links between supervisory boards and firm performance, as these boards are a complex phenomenon (Nicholson and Kiel, 2007). Agency theory can be used to examine the role supervisory board members may play in contributing to the performance of the organizations they govern. This requires an examination of the supervisory board members' profiles. Resource dependency theory can be employed to examine the link between firms and the resources needed to maximize performance. This involves an examination of board size and board activity. The use of the two theories is consistent with the prior work of Hillman and Dalziel (2003) and Jackling and Johl (2009).

Beside the agency and the resource dependency theories, contingency theory can also be used to suggest a general pattern of links between the board of directors and performance. Contingency theory suggests that this link may significantly vary across different contexts due to changes in circumstances and over time (Carter et al., 2010). This is also consistent with the argument posed by Aguilera, Filatotchev, Gospel and Jackson (2008) that the interdependencies of companies and their business environments and cultures can lead to differences in effective governance practices. Thus, there is no reason to assume that the solutions that are suitable in a specific environment will be efficient in a different setting.

It can be argued that board diversity might improve board performance, as boards that are more diverse will consider different perspectives leading to better decision making. In this vein, Finkelstein and Hambrick (1996) outlined two key functions for boards that are highly related to the performance of the organization. First, boards are commonly the most influential actors that determine strategy direction and decision making inherent in their structural position. Second, boards fulfill a monitoring role that may include representing shareholders, monitoring the proper use of organizations' wealth, response to takeover threats and hiring, and compensating and monitoring top management work (Erhardt, Werbel and Shrader, 2003).

However, to date, the evidence from previous studies focusing on a similar association in different contexts remains mixed. The inconclusive results signal that more research is needed to increase our understanding of the relationship between board diversity and firm performance, especially in different contexts. The objective of the current study is to examine the characteristics of Polish supervisory boards of companies listed on the Warsaw Stock Exchange in more detail in order to determine which of these attributes influence the company's performance.

These characteristics can be divided into three categories: (1) supervisory board members' profiles, (2) the supervisory board's activity, and (3) supervisory board size.

Two aspects of the profile of each member will be studied: independence and experience.

Independent supervisory board members and company performance

Independence is the key construct used to ensure proper oversight of a company's performance. The Best Practices for GPW-Listed Companies 2016 stipulates that at least two members of the supervisory board should meet the criteria of independence. Regulators across the world consider independent directors and monitoring as prerogatives of an efficient corporate board. Independent board members are seen as a remedy for homogenous boards drawn from an "old boys" network; they also serve to counterbalance executive power. Evidence shows that independent directors can have a positive impact on financial reporting quality (Abbott et al., 2003; Carcello and Neal, 2000; Deli and Gillan, 2000; Felo et al., 2003; Pucheta-Martinez and De Puentes, 2007; Pearce and Zahra, 1992; Daily and Dalton, 1993). However, from the organization's perspective, independent directors may not be so beneficial as their presence increases the likelihood of misunderstandings, thus creating conflicts and diversion of valuable time to address the source of problems. Also, the potential benefits of having an outsider on the board are time-limited as independence is not an unvarying state of mind and independent directors gradually "lose" their independence with time as external auditors do. The empirical evidence on the association between the important compositional feature and firm performance has been inconclusive (Knyazeva, Knyazeva and Masulis, 2013; Duchin, Matsusaka and Ozbas, 2010; García-Ramo and García-Olalla, 2014; Chou, Chung and Yin, 2013). For instance, Knyazeva, Knyazeva and Masulis (2013) documented a positive effect of board independence on firm value. However, Horváth and Spirollari (2012) and Mahadeo, Soobaroyen and Hanuman (2012) found a negative association between independence and company performance, while Bøhren and Strøm (2010) and Robins and Wiersema (1995) found no association.

Although the results are inconclusive, prior theoretical and empirical research suggests there might be a link between a higher proportion of independent supervisory board members and company performance. However, we do not attempt to predict the strength or direction of the association. Therefore, the following hypothesis is offered:

H1: Ceteris paribus, the increased presence of independent supervisory board members is associated with better financial performance.

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Experience of supervisory board members and company's performance

The second test variable used in our study that describes the profile of board members appointed to the audit committee is experience. According to the Best Practices of GPW-Listed Companies 2016, members of the supervisory board should have extensive experience to perform their duties. Past literature suggests that board members with longer tenure gather greater experience and knowledge about a firm, which enables them to be better monitors of performance (Vafeas, 2005; Sharma and Iselin, 2012). Sharma and Iselin (2012) argued that directors with possessing greater business experience are better informed about a firm's internal and external setting, including financial reporting, risk management, and internal control systems than those with a shorter tenure. Similarly, Bédard, Chtourou and Courteau (2004) documented that board members with more experience are more effective in constraining earnings manipulation, due to their superior experience and knowledge about the firm. Beasley (1996) found that the likelihood of fraud declines as the average tenure of outside directors increases. Finally, Chan, Liu and Sun (2013) argued that experienced board members have greater expertise, reputation, commitment, and willingness to perform better monitoring roles and found that firms with long-tenured members pay lower audit fees.

Therefore, the second hypothesis is as follows:

> **H2**: Ceteris paribus, the increase of experienced members on supervisory board members is positively and significantly associated with better financial performance.

The effect of other characteristics on firm performance

Apart from the four specific characteristics discussed above, other elements can influence financial performance. For this reason, this study includes a number of governance-specific and firm-specific characteristics as control variables in its model. They include board size, size of the firm, firm age, and external auditor's profile (in the Big 4 or not) as well as ownership structure (whether a family firm or not). Consistent with Erhardt, Werbel and Shrader (2003), we control for changes in the market as they could impact levels of diversity in the organization. For that reason, we collect information on the two performance measures also for 2010. As Erhardt, Werbel and Shrader (2003) found, this serves two purposes: it controls for market fluctuations better, indicates results that are more consistent, and accounts for diverse potential contributions related to strategic decision making. The use of a five-year window is also consistent with Erhardt, Werbel and Shrader (2003).

Method

Sample construction

To test the impact of supervisory boards' compositional features on financial performance we use a sample of companies listed on the Warsaw Stock Exchange (WSE). WIG Poland is an index on the WSE that features all Polish companies listed on the main market. We use the list of companies included on this index as of June 1, 2017. We exclude banks (listed in a WIG banks index) following Pucheta-Martínez and García-Meca (2014) as these institutions are under special scrutiny by financial authorities, which constrains the role of their boards of directors, and because of their special accounting practices. See the details on the sample selection below:

	2015
WIG Poland	356
Excluding:	
▪ WIG banks	14
▪ Companies for which the information on supervisory boards' diversity is not available for 2015 and 2010	136
TOTAL SAMPLE	**206**

The data on supervisory boards (2015) as well as financial results (2010 and 2015) were collected using the Notoria Service. The reason for selection of 2010 was that this is a year of significant changes in the Polish corporate regulation, where a new law has been introduced requiring companies to have an AC and an independent member on the committee. At the same time the new Corporate Governance Code has been promoted stressing the importance of diversity. We also analyze 2015 to check for any significant changes in the results. The datasets available in Notoria include information on corporate governance and investment relations as well as biographical notes on all supervisory board members of companies listed on the Warsaw Stock Exchange. The missing information was manually collected from corporate web sites. The sample used for the analysis consists of 206 companies listed on the WSE.

Primary dependent variable

Organizational performance has been measured in numerous ways (e.g., market share, number of patented products, and total assets). Researchers have also used financial data to measure performance. The two most frequently used measurements throughout the literature are: (2) financial ratios such as the ratios of stock prices to earnings,

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stock prices to book values, or Tobin's Q; and (2) accounting measures related to historical performance such as Return on Assets (ROA), Return on Equity (ROE), and Return on Sales (ROS). In this study, we will use ROA and ROE as two different ways of measuring accounting performance. These two accounting measures are consistent with other studies on the diversity-performance link but are also frequently used by market and financial analysts in assessing a company's performance (Erhardt, Werbel and Sharder, 2003; Muth and Donaldson, 1998; Jackling and Johl, 2009).

Independent and control variables

To measure the compositional characteristics of the supervisory board we assign supervisory board members to two different categories, which will be used as our test variables:

$\%Ind\_SB_j$ = Percentage of independent members on supervisory board of firm j at time t

$\%Exp\_SB_j$ = Percentage of experienced members on supervisory board of firm j at time t

Prior literature identifies a set of board and firm characteristics that explain the determinants of profitability. These include board size, firm size, performance, and capital structure, among others. The set of control variables in our research will include:

$BSize_j$	= total number of board members of firm j at time t
$FirmSize_j$	= log of value of assets of firm j at time t
$BIG4_j$	= External auditor's profile (if one of the Big 4 or not) of firm j at time t
Age_j	= Age of firm j at time t
LEV^j	= Ratio of total liabilities to total assets of firm j at the end of year t at time t
Family $firm^j$	= Indicator variable that takes a value of one if the majority of firm j's shares is in family hands at time t
FFP_{jt-5}	= company's performance in firm j at time t-5

Details on all independent variables used in the paper can be found in appendix 1.

Model

The relation between performance and board structure is tested using the following model.

$$FFP_{jt} = \beta_0 + \beta_1 \%Ind\_SB_{jt} + \beta_2 \%Exp\_SB_{jt} + \beta_3 BSize_{jt} + \beta_4 FirmSize_{jt} + \beta_5 LEV_{jt} + \\ + \beta_6 BIG4_{jt} + \beta_7 AGE_{jt} + \beta_8 Familyfirm_{jt} + \beta_9 FFP_{jt-5} + r$$

FFP	= Firm's accounting performance
β_0	= Intercept term
$\beta_1 - \beta_9$	= Coefficients on the independent and control variables

The general hypothesis will be tested by conducting OSL regression analysis.

Sample description

Table 1 presents the main descriptive statistics for out sample. The average ROE and ROA in 2015 for our sample were 2% and 7%, respectively, while for 2010 ROE and ROA were almost 5% and 8%, respectively. These numbers indicate a visible negative dynamic in the companies' net returns, which could be a consequence of both a good or a bad financial situation. Sixty percent of the supervisory board members in our sample have the status of independent members, and 70% of board members for our sample are classified as experienced members, thus having professional and business experience. The Polish supervisory boards are not big – the average size of the board is about 5 members. Forty-four percent of companies are audited by a Big 4 audit firm, and 26% are classified as family firms. The analysis is conducted on a sample of young companies rather than old ones; the mean value for firm's age equals 34 out of a maximum of 141. What is more, the mean for the leverage ratio of the chosen companies is 43%. It could be claimed that the pool of companies listed on the GPW prefers being more conservative when it comes to their capital structure.

Table 1. Summary statistics

	(1)	(2)	(3)	(4)	(5)
Variables	**N**	**Mean**	**SD**	**Min.**	**Max.**
$\%Ind\_SB_j$	206	0.616	0.367	0	1
$\%Exp\_SB_j$	206	0.704	0.300	0	1
$BSize_j$	206	5.757	1.340	3	15
LEV_j	206	0.428	0.441	0.000218	5.930

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$BIG4_j$	206	0.442	0.498	0	1
Age_j	206	34.83	27.26	7	141
$Family\ firm_j$	206	0.262	0.441	0	1
ROA2010	197	0.0485	0.114	-0.475	0.637
ROE2010	197	0.0819	0.201	-0.869	1.441
ROA2015	206	0.0200	0.190	-1.406	0.930
ROE2015	206	0.0774	0.581	-1.908	7.418
$FirmSize_j$	206	12.77	1.636	8.340	17.49

Correlation Matrix

Table 2 presents the correlation between the variables in the case where ROE2015 is treated as a dependent variable. Table 3 presents the correlation matrix for the case in which the dependent variable is ROA2015. There is a comparatively strong negative correlation between firm's leverage ratio and return on assets. It is worth noting, that, on average, there are only 40% experienced members on the board of directors; moreover, an interesting point here is that age of the company is negatively correlated with the percentage of experienced board members, even though the correlation is weak (-0.0648). There is also a relatively strong positive correlation between the portion of experienced and independent members on the board of directors. As expected, ROE 2010 and ROA 2010 were highly correlated (0.7899). However, ROE 2015 and ROA 2015 had a much lower correlation (0.4188). The percentage of experienced board members, in turn, is positively correlated with both ROA and ROE 2015. Board size is weakly correlated with ROE 2015, whereas it is only marginally correlated with ROA 2015.

ROE 2015 and the leverage ratio are marginally correlated only, and have a positive impact. According to Table 2, there is almost no correlation between the share of independent members on the board of directors and companies' ROE in year 2015. However, there is a negative correlation (-0,20) compared to year 2010. The same trend is observed when looking at the share of experienced members in the BD. It is negatively correlated (-0,17) to ROE 2010, but has no correlation with ROE 2015. As for Board Size, it is clearly positively correlated with ROE in year 2010, although it has no correlation with ROE in year 2015. The same situation exists when comparing ROE to Firm Size. Both are not correlated in year 2015; however, there is a weak negative correlation in year 2010. The family firm control variable has no correlation when comparing it to ROA in both 2010 and 2015.

Table 2. Correlation matrix – ROE

	ROE2015	%Ind_SB	%Exp_SB	BSize	BIG4	Age	LEV	Family firm	ROE2010	FirmSize
ROE2015	1.0000									
%Ind _ SB	0.0004	1.0000								
%Exp _ SB	0.0056	0.6433	1.0000							
Bsize	0.0310	-0.4304	-0.3657	1.0000						
BIG4	0.1186	-0.2631	-0.2685	0.3496	1.0000					
Age	-0.0431	-0.1500	-0.0789	0.0844	0.2060	1.0000				
LEV	0.0966	0.0624	-0.0799	-0.0405	0.0614	0.1296	1.0000			
Family firm	-0.0775	0.2517	0.2595	-0.1862	-0.1721	-0.0436	0.1287	1.0000		
ROE2010	0.2998	-0.2031	-0.1747	0.1675	0.0939	0.0098	-0.0503	-0.0140	1.0000	
FirmSize	0.0445	-0.3498	-0.3345	0.5607	0.4658	0.0758	-0.1531	-0.1013	0.1443	1.0000

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Table 3. Correlation matrix – ROA

Variables	ROA2015	%Ind_SB	%Exp_SB	BSize	BIG4	Age	LEV	Family firm	ROA2010	FirmSize
ROA2015	1.0000									
%Ind _ SB	-0.1311	1.0000								
%Exp _ SB	0.0103	0.6433	1.0000							
BSize	0.0839	-0.4304	-0.3657	1.0000						
BIG4	0.0553	-0.2631	-0.2685	0.3496	1.0000					
Age	-0.0045	-0.1500	-0.0789	0.0844	0.2060	1.0000				
LEV	-0.4770	0.0624	-0.0799	-0.0405	0.0614	0.1296	1.0000			
Family firm	-0.1581	0.2517	0.2595	-0.1862	-0.1721	-0.0436	0.1287	1.0000		
ROA2010	0.1609	-0.1642	-0.1292	0.1204	0.0601	0.0018	-0.0864	0.0399	1.0000	
FirmSize	0.2381	-0.3498	-0.3345	0.5607	0.4658	0.0758	-0.1531	-0.1013	0.1340	1.0000

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According to Table 3, there is a strong negative correlation (-0,47) of ROA 2015 with Leverage; however, the same effect does not exist for 2010. There is a visible negative correlation between ROE 2015 and Family firm (-0,15); at the same time, there is no correlation between ROE 2010 and Family firm. As for the share of independent members on the board of directors, in both cases there is a noticeable negative correlation with ROA. The share of experienced board members has an inverted correlation with ROA 2010; however, it is not correlated to ROA in year 2015. Furthermore, firm size has a positive interdependence with ROA in both years.

Results

Tables 4 and 5 present the results of the regression when our dependent variable is ROA and ROE, respectively. The tables present three different specifications. Specification (1) has been estimated without controlling for changes in the market. Specification (2) includes the control of the change in the market, and specification (3) includes age of the company as a control variable.

Table 4. Regression results: ROE

Variables	(1)	(2)	(3)
$\%Ind\_SB_j$	-0.00226	0.0735	0.0515
	(0.0746)	(0.106)	(0.0955)
$\%Exp\_SB_j$	0.149**	0.186**	0.199**
	(0.0753)	(0.0924)	(0.0986)
$BSize_j$	-0.00417	-0.0149	-0.0152
	(0.0204)	(0.0176)	(0.0180)
$FirmSize_j$	0.0110	0.00992	0.00946
	(0.0337)	(0.0356)	(0.0357)
$BIG4_j$	0.119	0.116	0.134
	(0.110)	(0.105)	(0.116)
LEV_j	0.147	0.171	0.185
	(0.112)	(0.112)	(0.120)
$Familyfirm_j$	-0.120*	-0.153*	-0.154*
	(0.0710)	(0.0854)	(0.0860)

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ROE2010		0.955	0.951
		(0.645)	(0.644)
Age			-0.00170
			(0.00162)
Constant	-0.227	-0.305	-0.246
	(0.336)	(0.331)	(0.348)
Observations	206	197	197
R-squared	0.031	0.130	0.136

Note: The data present estimations based on OLS regressions on Polish nonfinancial firms listed on the Warsaw Stock Exchange. ROE2015 is considered an endogenous variable. Specification (1) has been estimated without controlling for changes in the market. Specification (2) includes the control of the change in the market, and specification (3) includes age of the company as a control variable. Standard errors are reported in brackets. The symbols *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

The results indicate inconclusive results for the share of independent supervisory board members. The presence of independent members on supervisory boards seems to be negatively linked to ROA and positively linked to ROE, although our results do not have statistical significance, except for specification 1 when linking ROA and the governance characteristic in Table 5. Similar results were obtained by Robins and Wiersema (1995) and Bøhren and Strøm's (2010) studies, where no link was found between independence of the board and financial performance. These results may be a signal that independence, a very important characteristic of diversity of supervisory boards promoted by the regulators, is not so important when it comes to supporting strategy and its execution. Independent members of supervisory boards seem to have a greater monitoring role than an advisory role, consistent with the findings of Horváth and Spirollari (2012) and Mahadeo, Soobaroyen and Hanuman (2012).

When it comes to the share of experienced members on the supervisory board, all specifications indicate a positive relation between the variable and ROA and ROE, suggesting a positive role of experienced members on the supervisory board in relation to firm's performance. In each specification, we observe positive and statistically significant coefficients. The results confirm previous findings (Vafeas, 2005; Sharma and Iselin, 2012; Bédard, Chtourou and Courteau, 2004; Chan, Liu and Sun, 2013), and suggest that experienced board members are better equipped when it comes to expertise, reputation, and commitment. They are also better informed about a firm's internal and external setting, including financial reporting, risk management, and internal control systems, allowing them to have an impact on the firm's performance.

Regarding our control variable, our results seem to suggest that the ownership structure matters when it comes to financial performance, which is consistent with prior studies. In the case of ROE as our dependent variable, the family firm coefficient is negative and statistically significant at 5%, indicating that the ROE of family firms will be lower than for non-family firms. In the case of ROA as our dependent variable, we observe that the level of leverage may be important. The coefficient is negative and statistically significant at the 10% level in each specification, suggesting that the increase in external financing may reduce ROA. Our findings related to the link between performance and capital structure in analyzing the governance aspects are consistent with prior findings (Cucculelli and Micucci 2008; Herdjiono and Sari, 2017).

Table 5. Regression results: ROA

Variables	(1)	(2)	(3)
$\%Ind\_SB_j$	-0.0672*	-0.0544	-0.0514
	(0.0380)	(0.0395)	(0.0418)
$\%Exp\_SB_j$	0.0845**	0.0798*	0.0781*
	(0.0386)	(0.0405)	(0.0412)
$BSize_j$	-0.0103	-0.0108	-0.0107
	(0.0103)	(0.00969)	(0.00969)
$FirmSize_j$	0.0227	0.0233	0.0234
	(0.0146)	(0.0150)	(0.0151)
$BIG4_j$	-0.000487	-0.00226	-0.00459
	(0.0214)	(0.0217)	(0.0238)
LEV_j	-0.180***	-0.176***	-0.178***
	(0.0403)	(0.0423)	(0.0419)
$Familyfirm_j$	-0.0393	-0.0491	-0.0490
	(0.0318)	(0.0336)	(0.0336)
ROA2010		0.188	0.189
		(0.205)	(0.205)
Age			0.000228
			(0.000413)

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Constant	-0.141	-0.161	-0.169
	(0.161)	(0.164)	(0.172)
Observations	206	197	197
R-squared	0.271	0.286	0.287

Note: The data present estimations based on OLS regressions on Polish nonfinancial firms listed on the Warsaw Stock Exchange. ROA2015 is considered an endogenous variable. Specification (1) has been estimated without controlling for changes in the market. Specification (2) includes the control of change in the market, and specification (3) includes the age of the company as a control variable. Standard errors are reported in brackets. The symbols *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Conclusions

The diversity of boards has attracted a great deal attention from researchers, policy makers, and regulators. Those who promote board diversity argue that it can enhance performance and lead to higher market value. The Polish governance system is not free from a similar discussion when it comes to the diversity of supervisory boards. Already in 2002, the first Polish corporate governance code promoted the diverse composition of supervisory boards. The efforts of the regulators and reformists related to the promotion of the diversity concept among Polish companies are also visible in current corporate governance regulations.

This paper investigates two important aspects of diversity on supervisory boards based on a sample of companies listed on the Warsaw Stock Exchange. The two aspects investigated were the independence and experience of supervisory board members and the relationship of these characteristics to companies' financial performance. Our findings confirm that the increased presence of experienced supervisory board members can lead to superior financial performance. However, the same effect is not observed when it comes to independent members of supervisory boards. This suggests that experienced members on supervisory boards take a more strategy-supporting role, while independent members on supervisory boards may serve a more monitoring role.

The main contribution of this paper lies in the empirical investigation of the relation of two diversity aspects of supervisory boards for companies listed on the WSE. This paper sheds some light on how to ensure supervisory board effectiveness. In more general terms, the paper also provides some information on the corporate governance system in Poland. The paper also may be of value to the promotes of corporate gover-

nance in other CEE countries as the empirical results confirm that the diversity on board is an important factor affecting firm's performance.

This study is not free from limitations. First, we focus only on two composition features related to the diversity of supervisory boards. Additionally, we study the effect of diversity on a supervisory board on financial performance investigating data collected only for one year. Further studies could investigate some additional aspects such as female participation, as well as financial and accounting expertise. Further studies could also include a larger dataset of panel data.

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Appendix

Appendix 1. Independent and control variables of the tested model

Independent variables						
Variable	**Label**	**Expected sign**		**Variable definition/Measurement**		**Used previously by**
		ROE	**ROA**			
Board composition variables						
Independent members	%Ind _ SB_j	+	–	Independent member is a person who: ▪ declare an independence in statement; ▪ has no family relationships with Directors and Management Boards members; ▪ has no more than 5% share in company's share capital	Percentage of independent members on supervisory board of firm j at time t	Daily and Dalton (1993), Felo, Krishnamurthy nd Solieri (2003), Pucheta-Martínez and De Fuentes (2007), Duchin, Matsusaka and Ozbas (2010)
Supervisory board members' experience	%Exp _ SB_j	+	+	Experienced member is a person who: ▪ has an experience in the same sector as the company operates; ▪ was a company's founder or director, or occupying appropriate high positions as CEO, CFO, COO, Production, Marketing, Sales, Investment, Administrative Director, Chief Accountant, for a longer period than one year	Percentage of business experienced members on supervisory board of firm j at time t	Vafeas (2005), Sharma and Iselin (2012)
Control Variables						
Board-related control variables						
Board size	$BSIZE_j$	-	–	Total number of board members of firm j at time t		Duchin, Matsusaka and Ozbas (2010) Chan, Liu and Sun (2013)
Firm-related control variables						
Leverage	LEV_j	+	–	Ratio of total liabilities to total assets of firm j at time t		Pearce and Zahra (1992), Campbell and Mínguez-Vera (2008), Jackling and Johl (2009)

External auditor's representa-tiveness of BIG4	$BIG4_j$	+	–	External auditor's profile (if one of the Big 4 or not) of firm j at time t		Zaman and Valentinčič (2011)
How long company was on the market	Age_j	–	+	Age of firm j at time t		Duchin, Matsusaka and Ozbas (2010)
Family firm	Familyfirm	–	–	Family firm it is an entity ▪ in which family representatives function as directors or management board members; ▪ in which the majority of ownership or control shares are held by family members	Dummy variable with a value of 1 when company is a family firm	Chau and Leung (2006)
Firm size	$FSIZE_j$	+	+	The natural log of total assets of firm j at time t		Campbell and Mínguez-Vera (2008), Chan, Liu and Sun (2013)

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