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The influence of board members with foreign experience on the timely delivery of financial reports

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Abstract
This study examines the effect of the presence of foreign experts on a company's board on the important characteristic of high-quality financial reporting: timeliness. We focus on experts with foreign experience (EFEs) who are board members, in the context of a dual board model. The sample is drawn from the population of Polish nonfinancial firms listed on the Warsaw Stock Exchange during 2010–2015. For analysis, we use the generalised method of moments with fixed effects. After controlling for corporate governance and firm characteristics, we find that the presence of EFEs shortens the time necessary to deliver financial reports. Our findings enrich the knowledge on the monitoring role of EFEs in corporate governance, especially in the context of the insider model of corporate governance and a dual board structure. The findings have significant implications for policy formulation and provide evidence that the presence of EFEs on supervisory boards may lead to increased timeliness of financial reporting, thus increasing financial reporting quality.

Keywords Corporate governance · Reporting timeliness · Experts with foreign experience · International experts · Two-tiered board system · Central and eastern Europe · Poland

JEL Classification G30 · M42 · M41 · M14

1 Introduction

This study examines the effect of the presence of board members with foreign experience on the timeliness of financial reporting. Timeliness is considered an important factor of relevant financial information (EU 2010; IASB 2010), and it can be

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thus considered a central aspect of financial reporting quality (FRQ). Despite the information relevance/accuracy dilemma, the delivery of timely information to capital market participants plays an important role in reducing the asymmetry of financial information between firms' management and market participants and emphasises the need to file reports by deadlines. There is an inverse relationship between the time taken to prepare financial statements and information value (Knechel and Sharma 2012; Sultana 2015; Abernathy et al. 2017). Specifically, the longer it takes to prepare audited financial statements, the stronger the signal transmitted to the market that there may be negative issues arising related to the preparation of ready-to-be-released financial statements.

Boards of directors are expected to advise and monitor management (Fama and Jensen 1983). Over the last decades, firms have become increasingly internationalised, simultaneously with the increase in the internationalisation of top management teams (Nielsen and Nielsen 2010) and the internationalisation of boards (Hooghiemstra et al. 2019). Research on international experts on boards and management teams shows that—despite additional contracting and monitoring costs—such experts can contribute to companies in various ways (Nielsen and Nielsen 2013). Prior research suggests that the presence of international board members may influence not only the advisory (Masulis et al. 2012) but also the monitoring role of the board (Miletkov et al. 2017; Giannetti et al. 2015).

In the context of corporate governance, international board members can play an important role in transferring control-mechanism knowledge to their local counterparts (Miletkov et al. 2017). International board members, having learned how foreign organisations work, may facilitate the adoption of efficient oversight practices by the board they sit in. This is not only due to the expertise they have accumulated abroad, but also because they have relatively weaker local ties and thus stronger incentives to pursue effective monitoring practices (Giannetti et al. 2015). Since an important task of a board is to monitor financial reporting and auditors, it is also possible that more efficient board monitoring may lead to higher FRQ, of which timeliness of reporting is an important aspect. In this study, we argue that experts with foreign experience (EFEs) which include not only international board members but also board members with at least five years of international experience, can bring greater emphasis to the supervisory boards' controlling role and may be better able to monitor management policies eventually leading to better timeliness of financial reporting and thus the higher FRQ.

With this study, we aim to contribute to three streams of literature. Firstly, the study provides new evidence on corporate governance-related determinants of financial reporting timeliness. Timely information is considered to play an important role in creating firm value and reducing information asymmetry (Knechel and Sharma 2012; Sultana 2015; Abernathy et al. 2017). To date, evidence on the link between board characteristics and the timeliness of reporting is mixed and biased towards the Anglo-Saxon model of corporate governance, which has mainly examined features such as independence, accounting, and financial expertise. We draw our data set from an environment in which the board is organised according to a two-tiered model (dual board) consisting of a management board and supervisory board in the Central and Eastern Europe market. In general,

this region is under-represented in the recent management literature (Albu et al. 2017). In economies with less mature capital markets, the timeliness of the delivery of audited financial statements can be more important than in well-developed capital market economies (Francis et al. 2003). In such a setting, news outlets, financial intermediaries, and regulatory bodies may not be as effective in conveying financial information as they are in well-developed markets. This study can therefore provide additional insight into the determinants of reporting timeliness and can be considered a response to Abernathy et al. (2017), who call for more research on this topic across regulatory regimes, countries, and marketplaces.

Secondly, we draw attention to experts with international experience and how they contribute to effective monitoring in a dual-board governance setting in less mature markets characterised by a weaker investor protection environment and still developing financial institutions. Miletkov et al. (2017) indicated that the association between foreign directors and firm performance is more positive in countries with lower-quality legal institutions and when the director comes from a country with higher-quality legal institutions than those of the firm's host country. In this study, we argue that in a two-tiered corporate board governance system and a weaker investor protection environment, EFEs can also add value to the monitoring function of the supervisory board, making their financial oversight more effective. This, in turn, increases the timeliness of financial reporting.

Thirdly, as we have drawn our data from Poland, the study provides some insight into the Polish corporate governance system. Poland is characterised by a relatively new capital market with significant ownership concentration (Byrka-Kita et al. 2018), along with corporate governance mechanisms that are still developing (Aluchna and Koładkiewicz 2010; Dobija and Klimczak 2010; Koładkiewicz 2012; Wąsowska and Postula 2018). Thus, research on a board's ability to monitor control functions and impact FRQ in this context is limited.

Our paper is related to—but also markedly different from—Masulis et al. (2012) and Hooghiemstra et al. (2019). Firstly, the earlier two papers focus on examining whether international experts on boards affect some dimension of earnings quality, whereas we focus on the timely delivery of financial information to the capital market participants. Secondly, the prior two studies rely on a narrower definition of international experts based on a country of origin (albeit different ones), our study investigates supervisory board EFEs (with at least five years of international experience). Thirdly, as the prior papers focus on a one-tier corporate governance model (Masulis et al. 2012) and a distinct Nordic corporate governance model (Hooghiemstra et al. 2019), this paper extends the literature by investigation of a two-tier corporate governance model. The differences between the models are related to the power allocation given to shareholders and boards (Lekvall 2014).

To answer our research question of whether an international expert on a supervisory board can influence the timeliness of financial reporting, we use a sample of companies listed on the Warsaw Stock Exchange (WSE) between 2010 and 2015. The empirical methodology used is the generalised method of moments (GMM). Based on prior research, we hypothesise that the presence of board members with foreign experience will increase the timeliness of financial reporting.

Our results indicate a positive and significant effect of the presence of EFEs on a supervisory board on financial reporting timeliness. Among various EFE's attributes, business experience seems to play the most important role in ensuring the timely delivery of financial reports. Moreover, the results suggest that the larger the company supervisory board, the more profitable the company is, while companies that issue bonds and are audited by a Big 4 firm have a shorter audit lag.

The results of this study may help policymakers to verify the usefulness of policies related to the promotion of diversity on supervisory boards and to motivate actions promoting the presence of EFEs aimed at increasing the efficiency of the monitoring process.

The remainder of the paper is organised as follows. In Sect. 2, we provide a theoretical background and describe the development of our hypothesis. Section 3 describes the specifics of the Polish corporate governance system and presents the empirical design, and Sect. 4 reports the results. Section 5 discusses the findings and states the implications and limitations of the paper.

2 Literature review and development of the hypothesis

2.1 Quality of financial information and timeliness of financial reporting

Financial reporting timeliness has been a focus of standard setters for many decades. For instance, the *Conceptual Framework for Financial Reporting* (IASB 2010) considers relevance and faithful representation to be the most important qualitative characteristics of useful information, but it also indicates that timeliness—together with comparability, verifiability, and understandability—enhance the quality of financial reports. Additionally, the *EU Transparency Directive* underlines the importance of timely information in building investor confidence and in the decision-making process.

In a globalised world and the era of information technology, the urge to deliver timely information to users, who currently have broader investment opportunities, has been an important area of interest not only for researchers (Abernathy et al. 2014; Abernathy et al. 2017) but also for accounting standard setters (IASB 2010) and for companies. Timeliness is considered an important element of the quality of financial reporting (Sultana et al. 2015). Delays in reporting financial statements are believed to jeopardise the quality of financial information and can cause negative consequences, such as poor market reactions (Bronson et al. 2011), thus negatively impacting firm values (Blankley et al. 2014). However, the provision of timely information is a double-edged phenomenon (Sultana et al. 2015). Some concern exists over whether the quest for relevant and timely reporting compromises the accuracy and faithful representation of financial information (Bryant-Kutcher et al. 2013; Sultana et al. 2015).

The timeliness of financial reporting is usually measured by the audit reporting lag (ARL) (Abbott et al. 2012). ARL is defined as the duration of time from the end of a company's fiscal year to the date of the auditor's report (Ashton et al. 1987). Abernathy et al. (2017) recently produced a useful summary of research on ARL.

They suggested that understanding the determinants of ARL in various settings is important, as it allows audit practitioners, company management, financial statement users, and standard setters to better understand the causes and implications of ARL and possible adoption practices to increase audit and FRQ. The literature uses ARL as a proxy for both financial-reporting and audit quality. When ARL is used to measure FRQ, it is assumed that the board influences the company's decision-making so that accounting quality is higher before the audit and, thus, auditors need to conduct fewer tests and dedicate less effort, which results in a shorter ARL. In the context of audit quality, ARL is used to measure the effort in conducting an audit. It is therefore expected that a longer ARL indicates higher audit quality (Whisenant et al. 2003).

Prior studies have documented that when ARL is used as a proxy for FRQ, it is shorter for larger, more successful companies and for those with more advanced corporate governance systems (Abernathy et al. 2017). The literature indicates that the firm-specific characteristics of size, performance and financial conditions, complexity and industry, and internal control over financial reporting and governance influence ARL. Among the governance characteristics studied are ownership concentration, family ownership, board experience and independence, board duality, higher proportions of non-executive directors, and the accounting and financial expertise of audit committee members (Abernathy et al. 2017). In the context of emerging economies, Al-Ajmi (2008) examined the impact of corporate governance characteristics and found that issuers with higher ownership concentration showed timelier reporting.

2.2 Role of EFEs on a supervisory board

Our expectations about the effect of EFEs on the timeliness of financial reporting are based on a review of the literature, which suggests several reasons why EFEs on a board may influence the efficiency of monitoring a company's financial reporting and auditors.

First, following agency theory, the board is an important governance mechanism in constraining managers' opportunistic behaviour and protecting shareholder interests from the self-interests of management (Jensen and Meckling 1976; Fama and Jensen 1983). Efficient board monitoring should help reducing managers' self-serving behaviour. Hillman and Dalziel (2003) suggest the need to integrate both agency theory and resource-based theories and argue for an appropriate mix of experience and capabilities to ensure efficient monitoring. Efficient monitoring of managers by a board requires an appropriate mix of resources and competencies, which includes different knowledge bases, experiences, and social capital.

Over the last decades, firms have become increasingly internationalised, both in terms of operations and in terms of the supply of capital (Oxelheim et al. 2013; Estelyi and Nisar 2016; Hooghiemstra et al. 2019). This trend is likely to result in greater information asymmetry, which, in turn, can lead to higher monitoring costs (Sanders and Carpenter 1998). Hooghiemstra et al. (2019) suggest that one of the ways of dealing with the increased demand for information is to match the

internationalisation of the firm's activities with that of its board. Indeed, board internationalisation has been the subject of research in recent years. Existing studies dealing with international contexts (Staples 2007; Nielsen and Nielsen 2010; Homberg and Bui 2013) focus primarily on top managers' international experience as an important source of competitive advantage for multinational corporations as well as a mode of internationalisation. At the same time, less research has been conducted on the monitoring role of international boards, and thus, questions on how board effectiveness may be influenced by introducing more international experience to the board remain unanswered.

Secondly, there are two competing views that may explain international board members' possible influence in board monitoring and suggest that hiring an international board member comes with benefits but also costs. As an advantage, we can indicate that the presence of foreign directors increases the board's independence and, hence, makes them better monitors (Gregorič et al. 2017; Oehmichen et al. 2017). Studies suggest that international experts may contribute diverse opinions and perspectives, along with languages, upbringing, and life experiences. Nielsen and Nielsen (2013) argue that international experts not only offer broader international business knowledge and networks but also a different content and structure of cognitive schemas, influencing the way information is collected, processed, organised, and used. Together with the deeply rooted cultural values of the international expert's country of origin, these cognitive bases create a filter through which information is selected and interpreted, which, in turn, provides the basis for the expert's decisions (Hambrick and Mason 1984). Therefore, it is likely that such experts may show more openness and frankness in performing their monitoring tasks (Oxelheim and Randøy 2003), and they are more likely to exhibit independent thinking and feel less reluctant to raise controversial issues, due to the board's lower cohesiveness (Forbes and Milliken 1999). This may benefit discussions within the board and potentially contribute to increased monitoring effectiveness (Miletkov et al. 2017; Hooghiemstra et al. 2019).

On the other hand, board members with foreign experience may be less effective at monitoring due to cultural differences as well as language barriers. Language and distance barriers may influence their ability to obtain so-called 'soft information' (Masulis et al. 2012; Hooghiemstra et al. 2019). Furthermore, international board members may be less familiar with local laws and regulations (Masulis et al. 2012). Moreover, geographical distance and different time zones may impede effective oversight and result in additional monitoring costs (John et al. 2011; Masulis et al. 2012; Firooze et al. 2016).

Thirdly, our expectations regarding the link between the presence of an EFE on a supervisory board and FRQ are supported by empirical research. The influence of the presence of international board members on the board's ability to better support decision-making and monitor management continues to be a subject of research, but the findings are not consistent. Masulis et al. (2012), for instance, found that independent foreign directors on US boards help make better decisions related to cross-border acquisitions but, at the same time, foreign directors exhibit poor meeting attendance and are associated with higher chances of financial misreporting. Oxelheim et al. (2013) documented that in Nordic firms, the percentage of foreign

directors is primarily related to financial internationalisation rather than to foreign sales, and thus, presumably, to the monitoring rather than to advisory functions. Miletkov et al. (2017) conclude on the importance of foreign directors in companies with more foreign operations and an international shareholder base, as well as in firms located in countries with a limited supply of potentially qualified domestic directors and lower levels of capital market development. Firooze et al. (2016) provide empirical evidence that a geographically diversified board can contribute to better disclosure quality. On the other hand, Hooghiemstra et al. (2019) documented that the presence of international (non-Nordic) board members is associated with higher levels of earnings management.

In the context of the less mature capital markets of emerging economies—despite the monitoring deficiencies previously discussed—international board members usually represent foreign shareholders and, therefore, may more strongly emphasise the board's monitoring role, especially when they come from countries with a stronger investor protection environment (Lee et al. 2012). Recent studies confirm the positive role of international experts on a board. For instance, Giannetti et al. (2015) and Du et al. (2017) documented that the presence of EFEs curbs earning management practices in Chinese companies.

In this study, we argue that EFEs can also influence the timeliness of reporting. In a two-tier governance system, where the predominant role of the supervisory board is to monitor managerial actions, EFEs may stress the importance of monitoring the financial reporting process and of timely delivering financial information to market participants. Given that a supervisory board's primary role is to monitor managerial actions, EFEs on a supervisory board are more likely to focus on monitoring the financial reporting process so that its quality is higher prior to audits. Consequently, this may lead to a shorter reporting time of the firm's financial performance for shareholders and various stakeholders. Accordingly, this line of reasoning suggests the following hypothesis:

H1 The presence of supervisory board members with foreign experience is positively associated with financial reporting timeliness, leading to the reduction of ARL.

3 Context and research design

This section provides more information about the context of the study, the data employed, and the methodology.

3.1 Specifics of the Polish corporate governance system

The current Polish corporate governance system has emerged over the past 25 years, with reforms that have simultaneously encompassed ownership transformation and the building of a market-oriented economy. This system can be characterised as an 'insider' model, in which owners monitor, oversee, and control companies from

within (Słomka-Gołebiowska and Urbanek 2016). In this model, owners frequently have large ownership stakes in their companies and actively cooperate with management. Such active participation in a company's management enables investors to retain direct hierarchical control over the management and reduces agency costs. In the 'insider' model of corporate governance, individual investors also often have large ownership stakes. In such a model, the board is organised in a dual, two-tiered structure consisting of both a management and a supervisory board. The management board consists of executive directors, and the supervisory board consists of members from outside the company. The supervisory board and its committees are in charge of monitoring and controlling the management board of the company in the interest of all shareholders (Słomka-Gołebiowska and Urbanek 2016; Dobija and Kravchenko 2017).

In the Polish corporate governance system, the dominant shareholder's stake amounts to approximately 40% (Aluchna 2007). This feature means that control and ownership are in the hands of managers, families, and business group structures, which provides incentives for the effective monitoring of management. However, it also provides opportunities for self-serving transactions, especially when minority shareholders face weak legal protection. Therefore, corporate governance regulations should focus on the protection of minority shareholder interests and the company at large.

One way to protect minority shareholders—and to ensure that key decisions are made in the interest of the company and all shareholders—is to establish proper oversight of the company's management, including control of financial reporting. Therefore, it is important to ensure that supervisory boards efficiently perform their function. Strengthening supervisory boards has been on the agenda of regulators and promoters of the Polish Corporate Governance Code (Koładkiewicz 2012). However, Eulerich et al. (2017) observed that, in practice, corporate governance in Poland is weak, and regulations are often disregarded by companies. For instance, only 4% of listed companies in Poland are fully compliant with the Warsaw Stock Exchange (WSE) Corporate Governance Code (Forum Rad Nadzorczych 2017).

In such a setting, promoting the presence of EFEs on supervisory boards may help strengthen corporate governance practices; in particular, the oversight of financial reporting. The empirical section of this study documents the link between the presence of EFEs on a supervisory board and the timeliness of financial reporting.

3.2 Data source and sample

The sample is drawn from the population of Polish nonfinancial firms listed on the WSE between 2010 and 2015. WIG Poland is an index on the WSE that features Polish companies listed on the main market. We use the companies included in this index as of 1 June 2017. Following Pucheta-Martínez and García-Meca (2014), we exclude banks—listed on the WIG bank index and included on the WIG Poland index—and other financial companies because these institutions are under the scrutiny of financial authorities, which may constrain the role of their boards of directors, and also because they have unique accounting practices. We build

Table 1 Sample composition

WIG Poland	350
Merchandise companies	126
Service companies	78
Manufacturing companies	146
Total sample	350

an unbalanced panel of 1789 firm-year observations from 350 firms. The panel is unbalanced because, during this period, some firms became public, and others were delisted as a consequence of mergers and acquisitions. Nevertheless, the estimations based on unbalanced panels are as reliable as those based on balanced ones (Arellano 2003; Pucheta-Martínez and García-Meca 2014). Moreover, to empirically investigate which EFE attributes affect the timeliness of financial reporting, we analyse cross-sectional data of 170 companies listed on the WSE in 2015.

More details on the sample selection are provided in Table 1.

For this study, we collected information on supervisory boards and financial results from Notoria Service, a WSE-listed company that sells financial information and the stock prices of companies listed on the WSE and provides tools for financial data analysis. The data sets available from Notoria include periodic financial statements and financial reports (annual, semi-annual, and quarterly), in addition to notes and other supplementary information on companies listed on the WSE. Moreover, Notoria is our primary source for demographic data, as it also features a database with current and historical data on management and supervisory board members, including their biographical notes. Missing information was hand-collected from company websites or other online sources such as LinkedIn. Information on the bond market was taken from the WSE website related to bonds (Catalyst). We removed observations of unusually high and low values of audit lag, which resulted from acquisitions, changes in reporting dates, and the high probability of bankruptcy. Moreover, we performed tests for outliers,[1] and then we ran regressions both with and without identified outlying cases. We conclude that outliers have no large effect on the significance of regressions results.

3.3 Dependent variables

We use the ARL as a proxy for financial reporting timeliness. This is consistent with prior studies (Knechel and Sharma 2012; Knechel et al. 2012; Sultana 2015). When using the ARL as a measure of the timeliness of financial reporting, we assume that the board influences company decisions by ensuring that accounting quality is higher before the audit, thus reducing the need for auditors to conduct tests or dedicate additional effort, resulting in a shorter ARL (Whisenant et al. 2003). Moreover, robustness tests analyse an alternative measure of FRQ: the change in accruals. Research shows that firms manage earnings through real

[1] The results of tests for outliers are available in the request.

activities manipulation in addition to accrual-based activities. The primary role of accruals is to overcome problems with measuring firms' financial performance. However, the evidence indicates that the probability of manipulation increases with increasing accruals (Beneish 1999). Moreover, as timely information is very important in building investors' confidence and in the decision-making process, the previous study documents that investors' reaction also depends on the change in a company's accounting accruals (Peng et al. 2016).

3.4 Key test variable

Our key test variable is EFEs serving on supervisory boards in Poland. To be classified as an international expert, a board member must be a foreigner with business experience outside Poland or a Polish national with at least 5 years' experience working in foreign companies abroad.

The demographic details of board members for our sample companies were taken from biographical notes provided by Notoria Service. In cases of missing information, online sources were searched for relevant data, including websites such as LinkedIn. Most EFEs in our sample had relevant industry experience and were independent board members. For instance, in 2015, 63.5% of EFEs had expertise in accounting and finance, 75.5% were independent board members, and 58% possessed relevant or industry business experience. The characteristics of the sample firms and EFEs and their countries of origin are presented in Table 2.

One major reason for the high representation of EFEs on supervisory boards in Poland is significant ownership concentration with dominant shareholding. This type of ownership concentration may influence board composition, as owners seek foreign expertise and the best practices to increase the company's efficiency and international competitive advantage. Furthermore, the significant dominance of executives in a company's ownership may be the result of a pyramid approach in which many domestic companies are controlled by executives of a parent company—often an international one—leading to the increased presence of EFEs on supervisory boards (Aluchna 2007). Furthermore, companies with private Polish major investors are the most likely to hire EFEs, whereas state-owned companies are least likely to hire EFEs (PwC and Amrop 2015).

In examining the effect of EFEs on the timeliness of financial reporting, we use a number of alternative measures to verify the robustness of our findings. The measures are: (1) a dummy variable that takes the value 1 when an international expert is on the company board and 0 otherwise (D_EFE); (2) the proportion of EFEs on the supervisory board (%EFE); (3) the Blau index of diversity (Blau-EFE); (4) a dummy variable that takes the value 1 if the number of international experts on a board is larger than 2, and 0 otherwise (EFE2); (5) a dummy variable that takes the value 1 if the number of international experts on a board is larger than 3, and 0 otherwise (EFE3); and, (6) a dummy variable that takes the value 1 if the proportion of international experts on a board is larger than 30%, and 0 otherwise (shEFE30).

Table 2 Distribution of sample firms and EFEs

Year	# of firms	# of firms with at least one EFE on board	# of firms with multiple EFEs on board	% of firms with at least one EFE on board	% of firms with more than one EFE on board	% of EFEs on board (average)
Panel A: year distribution of sample firms and EFEs						
2010	267	126	58	47.2	21.7	11.71
2011	297	144	67	48.5	22.6	11.73
2012	311	155	80	49.8	25.7	11.58
2013	321	165	89	51.4	27.7	12.53
2014	337	174	104	51.6	30.9	11.64
2015	350	185	112	52.9	32.0	10.46

	Frequency	Percent
Panel B: EFE country distribution		
Belgium	2	0.46
Brazil	1	0.23
Bulgaria	2	0.46
Canada	2	0.46
China	2	0.46
Denmark	6	1.37
France	18	4.11
Germany	38	8.68
India	3	0.68
Ireland	4	0.91
Israel	3	0.68
Italy	9	2.05
Luxembourg	1	0.23
Mexico	2	0.46

Table 2 (continued)

	Frequency	Percent
Netherlands	5	1.14
Polish-born EFEs	260	59.36
Portugal	6	1.37
Romania	1	0.23
Serbia	1	0.23
Spain	21	4.79
Sweden	4	0.91
Switzerland	5	1.14
Turkey	2	0.46
UK	20	4.57
Ukraine	2	0.46
USA	18	4.11

3.5 Control variables

It is important to control for firm characteristics and corporate governance (Hooghiemstra et al. 2019) when testing the effect of the presence of EFEs on the timely delivery of financial information. The literature suggests that a set of firm characteristics can influence reporting timeliness (Francis et al. 2015; Abernathy et al. 2017). These include a company's size (SIZE), financial structure (LEV), ownership (%BIG_INV), performance (LOSS), and audit firm (BIG4). Based on the literature review, we also include additional controls: the company's age (AGE), growth potential (GROWTH), the issuing of bonds (BOND), and busy season (BUSY_SEASON). Moreover, board-specific characteristics can also affect the timely delivery of financial reports (Dey 2008; Bédard and Gendron 2010). Therefore, we control for board size (BSIZE) and the presence of an audit committee (AC).

3.6 Statistical model

Based on the literature review, the basic model for the empirical analysis is given by the following equation:

$$\begin{aligned}\mathrm{ARL}_{jt} = {} & \beta_0 + \beta_1\mathrm{EFE}_{jt} + \beta_2\mathrm{SIZE}_{jt} + \beta_3\mathrm{LEV}_{jt} + \beta_4\%\mathrm{BIG_INV}_{jt} + \beta_5\mathrm{LOSS}_{jt} + \beta_6\mathrm{BIG4}_{jt} \\ & + \beta_7\mathrm{AGE}_{jt} + \beta_8\mathrm{GROWTH}_{jt} + \beta_9\mathrm{BOND}_{jt} + \beta_{10}\mathrm{BUSY_SEASON}_{jt} + \beta_{11}\mathrm{BSIZE}_{jt} + \beta_{12}\mathrm{AC}_{jt} + \mathrm{r}\end{aligned}$$

in which: Dependent variables: ARL_{jt} = Number of days from the end of the financial year of firm j in year t to the day the external auditor signs the audit report; Main independent variables: EFE_{jt} = International expert members on the supervisory board of firm j in year t.

- D_EFE is the dummy variable that takes the value 1 when an international expert is on the board of company j at the end of year t, and 0 otherwise,
- %EFE is the percentage of international experts on board,
- BlauEFE is the Blau index of diversity: $\mathrm{BLAU} = 1 - \sum_{i=1}^{n} P_i^2$, where P_i is the percentage of EFEs on the supervisory board and n is the total number of supervisory board members,[2]
- EFE2 is the dummy variable that takes the value 1 if the number of international experts on the board is larger than 2, and 0 otherwise,
- EFE3 is the dummy variable that takes the value 1 if the number of international experts on the board is larger than 3, and 0 otherwise,
- shEFE30 is the dummy variable that takes the value 1 if the proportion of international experts on the board is larger than 30%, and 0 otherwise.

Firm-specific control variables:

SIZE_{jt} = Natural logarithm of noncurrent assets of firm j in year t;
LEV_{jt} = Total liabilities to total assets ratio of firm j at the end of year t;

[2] We have calculated Blau index following Campbell and Mínguez-Vera (2008). Values of the Blau index for diversity range from 0 to a maximum of 0.5, which occurs when the board is not diversified.

$\%BIG_INV_{jt}$ = Percentage of shares held by the largest investor of firm j at the end of year t;
$LOSS_{jt}$ = Dummy variable that takes the value 1 if company j has an accounting loss in year t, and 0 otherwise;
$BIG4_{jt}$ = Dummy variable that takes the value 1 if company j has a Big 4 firm as an external auditor in year t, and 0 otherwise;
AGE_{jt} = Natural logarithm of the age of firm j in year t;
$GROWTH_{jt}$ = Natural logarithm of company j's market growth potential ratio defined as the ratio of the firm's market and book value of equity in year t;
$BOND_{jt}$ = Dummy variable that takes the value 1 if the company issue bonds in year t, and 0 otherwise;
$BUSY_SEASON_{jt}$ = Dummy variable that takes the value 1 when company j publishes a financial report at the end of the calendar year in year t, and 0 otherwise.

Corporate governance control variables:

$BSIZE_{jt}$ = Natural logarithm of the total number of board members of firm j at year t;
AC_{jt} = Dummy variable that takes the value 1 if the company has formed an audit committee in year t, and 0 otherwise;
β_0 = Intercept term;
$\beta_1 - \beta_{10}$ = Coefficients of the independent and control variables;
r = Error term.

The equation specifies the regression model for examining the effect of the presence of EFEs on a board on ARL. It is expected that the coefficient β_1 will be negative.

In the robustness checks, we use ACCRUAL as the dependent variable. We calculate the change in total accruals as the change from the previous year to the current year (Peng et al. 2016). It is expected that the coefficient β_1 will also be negative in this case.

In terms of the methodology, we rely on the GMM estimator to address the potential endogeneity problem, as it allows controlling for endogeneity between variables and unobservable heterogeneity, which varies by firm (e.g. Wintoki et al. 2012).

4 Summary statistics

Table 3 presents the means, medians, standard errors, and minima and maxima of the main variables.

Table 3 Descriptive statistics for the sample

Variables	N	MEAN	Median	SD. Dev.	MIN	MAX
Continuous variables						
ARL (days)	1782	86	79	22.020	26	177
ACCRUAL (change)	990	2.643	− 0.036	50.83	− 336.8	1456.9
%EFE (ratio)	1782	0.178	0	0.231	0	0.933
EFE (number)	1782	1	0	1.700	0	14
BSIZE (number)	1782	6	5	1.377	3	15
AGE (years)	1782	32	21	28.830	0	157
SIZE (ln)	1782	8.145	8.848	3.553	0	16.331
LEV (ratio)	1782	0.486	0.477	0.247	0.004	4.801
%BIG_INV (ratio)	1782	0.396	0.349	0.218	0.034	1.000
GROWTH (ratio)	1782	4.312	1.119	42.797	− 147.592	1328.498
Dummy variables						
BIG4	1782	0.359	0	0.480	0	1
LOSS	1782	0.171	0	0.376	0	1
BUSY_SEASON	1782	0.985	1	0.121	0	1
BOND	1782	0.115	0	0.321	0	1
AC	1782	0.411	0	0.492	0	1

The results show that Polish companies report, on average, an audit lag of 86 days; accruals, on average, increase almost 2.644 times in year-to-year comparisons; and, the mean presence of EFEs on a board is 17.8% of all board members. However, on average, there is one EFE on a board, and the median is 0. In addition, the mean SIZE of the companies measured in logarithmic form is 8.145; 36% companies are audited by a Big 4 firm; 17.1% experience an accounting loss; 39.6% of shares are held by the largest investor; and, the boards comprise an average of six members, and the median is five. The companies' average leverage is 49%, and their average age is 32 years. Finally, 11.5% of the companies issue bonds and 41.1% have formed an audit committee.

Table 4 presents the Pearson correlation matrix to examine multicollinearity.

The correlation in most variable pairs is low, generally below 0.4. None of the correlation coefficients is high enough (> 0.80) to cause multicollinearity issues, which were also assessed using the variance inflation factor (all VIFs were below 1.83). However, the highest correlations are between SIZE, BSIZE, and AC. Previous research shows that SIZE and BSIZE usually are positively corelated with each other because growing firms might seek new board members to help oversee managers' performance (Coles et al. 2008). Moreover, BSIZE and AC may be correlated due to regulation in force in Poland, which links AC formation requirement with the size of the supervisory board (Journal of Laws 2009).

Table 4 Pearson correlation matrix

	ARL	%EFE	BSIZE	AGE	SIZE	LEV	%BIG_INV	BIG4	LOSS	GROWTH	BUSY_ SEASON	BOND	AC
ARL	1.00												
%EFE	− 0.219***	1											
BSIZE	− 0.210***	0.442***	1										
AGE	− 0.051**	0.116***	0.111***	1									
SIZE	− 0.221***	0.359***	0.583***	0.138***	1								
LEV	− 0.061**	0.119***	0.132***	0.266	− 0.097***	1							
%BIG_INV	− 0.104***	0.160***	0.142***	0.192 ***	− 0.034	0.071***	1						
BIG4	− 0.183***	0.389***	0.411***	0.560***	0.023	0.139***	0.1789***	1					
LOSS	0.100***	− 0.013	− 0.028	− 0.0156	− 0.165***	0.094***	− 0.020	− 0.069***	1				
GROWTH	0.034	− 0.022	0.012	− 0.030	− 0.069**	− 0.019	0.037	− 0.030	0.069***	1			
BUSY_ SEASON	0.003	− 0.034	0.004	0.047	0.003	0.036	− 0.009	0.042*	− 0.012	0.010	1		
BOND	− 0.128***	0.138***	0.135***	− 0.097***	0.222***	0.108***	0.073***	0.0978***	− 0.017	− 0.020	0.019	1	
AC	− 0.163***	0.329***	0.559***	0.075***	0.428***	0.163 ***	0.070***	0.341***	0.026	− 0.030	0.078 ***	0.177***	1

5 Empirical results

5.1 Do international experts have an impact on ARL?

The data present estimations based on GMM with a fixed effect for all the companies and sectors during 2010–2015. The advantage of the fixed-effects model is that it allows controlling for unobserved company characteristics, which enables us to capture the heterogeneity among the companies. Moreover, recent studies stress the importance of fixed managerial effects that have significant explanatory power for various accounting choices (e.g. Dyreng et al. 2010; Gul et al. 2011).

This section empirically investigates whether having EFEs on a board affects the timeliness of financial reporting. Table 5 presents our regression results, which provide evidence of a positive and significant association of EFEs with financial reporting timeliness.

Table 5 presents the effect of all our test variables on ARL. Specification (1) uses the dummy variable for EFEs as the EFE variables of interest. Specification (2) uses the share of EFEs as the EFE variable of interest. Specification (3) uses the Blau index of EFEs. Specifications (4), (5) present the results for the dummy variable that takes the value 1 if the number of international experts is larger than 2 and 3, respectively. Specification (6) provides the results for the dummy variable that takes the value 1 if the proportion of international experts is larger than 30%.

The regression results from all the specifications indicate a positive and significant effect of the presence of EFEs on a board (measured in different ways) on financial reporting timeliness (decrease in audit lag). Moreover, the greater the share of EFEs on a board, the shorter the audit lag. These findings are consistent with studies that claim that managerial and institutional characteristics play a major role in explaining companies' accounting policies (Francis et al. 2015). Companies with at least one international expert exhibit a lag that is 4 days lower. Additionally, the increase in the share of EFEs on a board decreases audit lag by 12 days. The result for the Blau index of diversity also confirms our hypothesis that the presence of supervisory board members with foreign experience is positively associated with financial reporting timeliness leading to the reduction of ARL. We also observe that companies with more than two international experts exhibit an audit lag that is 5 days lower. Moreover, a significant effect is also observed in companies where more than 30% of the supervisory board are international experts; their audit lag decreases by 5 days.

Regarding other control governance variables, our results also suggest that profitable companies (Haniffa and Cooke 2005) and companies that issue bonds (Datta et al. 2003) and are audited by a Big 4 company (Watkins et al. 2004) have a shorter audit lag. Moreover, we notice that companies with larger boards and higher ownership concentration showed timelier reporting. This is consistent with other research in the context of emerging economies (Al-Ajmi 2008; Giannetti et al. 2015).

Furthermore, we empirically investigate whether having an EFE with business experience (specification 1), financial or accounting experience (specification 2), independent EFEs on a board (specification 3) and financial or accounting literacy

Table 5 Regression results

Variables	Audit lag					
	(1)	(2)	(3)	(4)	(5)	(6)
D_EFE	− 4.472***					
	(1.075)					
%EFE		− 12.60***				
		(2.395)				
BlauEFE			− 11.24***			
			(2.716)			
EFE2				− 5.228***		
				(1.259)		
EFE3					− 3.709**	
					(1.544)	
shEFE30						− 5.668***
						(1.260)
SIZE	0.502***	0.472***	0.490***	0.471***	0.482***	0.468***
	(0.148)	(0.148)	(0.148)	(0.148)	(0.149)	(0.148)
LEV	− 0.535	− 0.370	− 0.397	− 0.213	− 0.526	− 0.271
	(2.066)	(2.060)	(2.067)	(2.068)	(2.073)	(2.066)
%BIG_INV	− 3.644	− 2.542	− 3.592	− 3.110	− 2.737	− 2.767
	(2.351)	(2.349)	(2.351)	(2.351)	(2.372)	(2.352)
LOSS	5.193***	5.069***	5.094***	4.926***	4.879***	4.872***
	(1.325)	(1.320)	(1.324)	(1.323)	(1.328)	(1.322)
BIG4	− 3.082***	− 2.613**	− 3.126***	− 3.162***	− 3.608***	− 3.180***
	(1.169)	(1.175)	(1.167)	(1.165)	(1.164)	(1.161)
AGE	− 0.0180	− 0.0151	− 0.0170	− 0.0135	− 0.0152	− 0.0150
	(0.0183)	(0.0182)	(0.0183)	(0.0183)	(0.0183)	(0.0182)
GROWTH	0.00936	0.00961	0.00971	0.0108	0.0113	0.0108
	(0.0113)	(0.0113)	(0.0113)	(0.0113)	(0.0113)	(0.0113)
BOND	− 5.277***	− 4.993***	− 5.147***	− 4.979***	− 5.315***	− 4.950***
	(1.598)	(1.595)	(1.599)	(1.601)	(1.603)	(1.600)
BUSY_SEASON	− 1.022	− 2.120	− 1.646	− 2.039	− 0.492	− 2.280
	(4.225)	(4.227)	(4.241)	(4.254)	(4.243)	(4.251)
BSIZE	− 1.729***	− 1.542***	− 1.802***	− 1.554***	− 1.633***	− 1.694***
	(0.449)	(0.451)	(0.448)	(0.455)	(0.461)	(0.449)
AC	− 1.262	− 1.172	− 1.212	− 1.428	− 1.688	− 1.481
	(1.272)	(1.264)	(1.274)	(1.266)	(1.271)	(1.262)
Constant	87.71***	87.20***	88.59***	86.62***	84.90***	87.61***
	(5.107)	(5.071)	(5.137)	(5.083)	(5.089)	(5.095)
Observations	1782	1782	1782	1782	1782	1782
R-squared	0.092	0.098	0.092	0.092	0.086	0.094
Company FE	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES

Table 5 (continued)

The data present estimations based on GMM on Polish firms listed on the WSE between 2010 and 2015. Audit lag is defined as the number of days it takes to issue an audit opinion and is considered an endogenous variable. D_EFE is a dummy variable that takes 1 when an international expert is on company j board at the end of year t, and 0 otherwise. %EFE is the percentage of international expert members on the supervisory board of firm j at year t. Blau index following Campbell and Mínguez-Vera (2008). Values of the Blau index for diversity range from 0 to a maximum of 0.5, which occurs when the board is not diversify. EFE2 is the dummy variable that takes 1 if the number of international experts on board is bigger that 2, and 0 otherwise. EFE3 is the dummy variable that takes 1 if the number of international experts on board is bigger that 3, and 0 otherwise. shEFE30 is the dummy variable that takes 1 if the number of international experts on board is bigger that 30%, and 0 otherwise. SIZE is the natural logarithm of total noncurrent assets of firm j at time period t. LEV is the total liabilities to total assets ratio of firm j at the end of year t. %BIG_INV is the percentage of shares held by the largest investor of firm j at the end of year t. LOSS is a dummy variable that takes 1 when company j has an accounting loss in period t, and 0 otherwise. BIG4 is an external auditor's profile (Big 4 or non-Big 4 audit firm) of firm j for the period t. AGE is the natural logarithm of the age of firm j for the period t. GROWTH is the natural logarithm of company j's market growth potential ratio defined as the ratio of the firm's market and book value of equity at time period t. BOND is the dummy variable that takes 1 if the company issue bonds, and 0 otherwise. BUSY_SEASON is a dummy variable that takes 1 when company j publishes a financial report during the end of the calendar year in period t, and 0 otherwise. BSIZE is the natural logarithm of the total number of board members of firm j at time period t. AC is the dummy variable that takes 1 if the company has formed audit committee, and 0 otherwise. Standard errors are reported in brackets. The symbols *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively

(education) (specification 4) affects the timeliness of financial reporting. Table 6 presents the analysis results of 170 companies listed on the WSE in 2015.

The regression results show that EFEs with business experience have the largest positive influence on financial reporting timeliness, while other EFEs attributes do not have a significant impact. Furthermore, if we compare the results presented in Table 5 with the results presented in Table 6, we notice that control variables such as AC started to be significant in 2015, while company SIZE and the number of supervisory board members lost its significance. Table 5 presents the results of firms listed in the period 2010–2015, Table 6 only presents the results of some firms from 2015. The changes in correlations in 2015 are likely to be explained by the reaction of companies due to regulatory changes introduced in the second quarter of 2014, which link the requirement of AC formation with company size. Although national regulations came into force in 2017, it was noticeable that companies adapted to the new directive before it became compulsory (Adamska et al. 2017).

5.2 Robustness checks

In this section, we perform a robustness test to ensure our results are robust. We present the regression results when we replace the ARL by the change in accruals. According to the literature, the primary role of accruals is to overcome problems with measuring firms' financial performance, but they may be manipulated. The evidence indicates that the probability of manipulation increases with increasing accruals (Beneish 1999). Since the EFEs are likely to increase the monitoring role of the supervisory board, it is also likely that they will pay special attention to possible

Table 6 The effects of various compositional characteristics of EFEs on ARL

	Audit lag			
	EFE with business experience	EFE finance or accounting experience	EFE independence	EFE finance or accounting literacy
	(1)	(2)	(3)	(4)
%EFE	− 2.452**	− 0.968	− 1.404	− 1.427
	(1.210)	(1.150)	(1.275)	(1.343)
SIZE	0.178	0.224	0.221	0.260
	(0.413)	(0.420)	(0.417)	(0.415)
LEV	− 17.36**	− 15.09*	− 14.52*	− 14.68*
	(7.638)	(7.673)	(7.695)	(7.685)
%BIG_INV	0.722	− 2.441	− 2.053	− 2.713
	(6.450)	(6.287)	(6.296)	(6.217)
LOSS	9.765***	10.05***	10.23***	10.48***
	(3.737)	(3.779)	(3.763)	(3.769)
BIG4	3.691	3.354	3.519	3.447
	(3.254)	(3.309)	(3.308)	(3.301)
AGE	0.0398	0.0343	0.0372	0.0305
	(0.0562)	(0.0569)	(0.0567)	(0.0571)
GROWTH	− 0.752	− 0.758	− 0.723	− 0.748
	(0.670)	(0.680)	(0.681)	(0.679)
BOND	2.919	3.135	3.259	3.296
	(3.506)	(3.546)	(3.544)	(3.547)
BUSY_SEASON	− 7.008	− 5.680	− 5.770	− 6.184
	(11.05)	(11.19)	(11.14)	(11.20)
BSIZE	− 1.085	− 1.264	− 1.567	− 1.275
	(1.158)	(1.320)	(1.135)	(1.237)
AC	− 7.795**	− 8.083**	− 8.210**	− 8.085**
	(3.497)	(3.567)	(3.561)	(3.550)
Constant	92.8***	91.2***	93.2***	91.6***
	(5.11)	(5.26)	(5.29)	(13.22)
Observations	170	170	170	170
R-squared	0.211	0.194	0.197	0.196
Company FE	YES	YES	YES	YES
SECTOR FE	YES	YES	YES	YES

The data present estimations based on GMM on 170 Polish firms listed on the WSE in 2015. Audit lag is defined as the number of days it takes to issue an audit opinion and is considered an endogenous variable. %EFE is the percentage of international expert with business experience (model 1), with finance or accounting experience (model 2), is the percentage of independent international experts (model 3), is the percentage of international expert with finance or accounting literacy (model 4) on the supervisory board of firm j at year t. SIZE is the natural logarithm of noncurrent assets of firm j at time period t. LEV is the total liabilities to total assets ratio of firm j at the end of year t. %BIG_INV is the percentage of shares held by the largest investor of firm j at the end of year t. LOSS is a dummy variable that takes 1 when company j has an accounting loss in period t, and 0 otherwise. BIG4 is an external auditor's profile (Big 4 or non-Big 4 audit firm) of firm j for the period t. AGE is the natural logarithm of the age of firm j for

Table 6 (continued)

the period t. GROWTH is the natural logarithm of company j's market growth potential ratio defined as the ratio of the firm's market and book value of equity at time period t. BOND is the dummy variable that takes 1 if the company issue bonds, and 0 otherwise. BUSY_SEASON is a dummy variable that takes 1 when company j publishes a financial report during the end of the calendar year in period t, and 0 otherwise. BSIZE is the natural logarithm of the total number of board members of firm j at time period t. AC is the dummy variable that takes 1 if the company has formed audit committee, and 0 otherwise. Standard errors are reported in brackets. The symbols *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively

earnings manipulation practices. Therefore, we expect that the presence of EFEs on supervisory board will result in a decrease in accruals, decreasing at the same time the probability of earnings manipulation and therefore positively affecting FRQ. Table 7 presents the results.

We notice that our results stay the same and support our hypothesis about the importance of international experts in corporate governance. The results are also highly statistically significant. More specifically, we show that a greater proportion of international experts translates into fewer financial misstatements and improved FRQ.

6 Discussion and conclusions

This study has examined the association between EFEs on a supervisory board and timeliness of financial reporting. It has investigated whether EFEs add value to a board's monitoring role in the context of the insider corporate board model and a two-tiered board structure. This study has also investigated a set of additional company- and governance-related factors that may also influence the timely delivery of financial reports. Our study corroborates previous research on the diversity on boards and their role in ensuring the effective oversight of management activities.

Prior studies showed the importance of internationalisation of the board in supporting the internationalisation of companies (Masulis et al. 2012). Some prior studies also linked the presence of international experts on a board with its monitoring role. However, this stream of research provides mixed results. On the one hand, increased board independence makes experts with international experience better equipped for a board-monitoring role (Firooze et al. 2016; Gregorič et al. 2017; Oehmichen et al. 2017). On the other hand, empirical studies conducted in developed capital markets have documented that the presence of international experts on boards is associated with higher chances of financial misreporting (Masulis et al. 2012) and higher levels of earnings management (Hooghiemstra et al. 2019). However, studies conducted in less developed economies provide a somewhat different picture of the role of international experts on boards and their ability to monitor management (Giannetti et al. 2015; Du et al. 2017).

Our study differs from—but also supplements—other studies. Firstly, we examined not only international experts on boards but also extended our analysis to board members with at least five years of foreign experience. Secondly, we focused on

Table 7 Robustness check

	ACCRUALS					
	(1)	(2)	(3)	(4)	(5)	(6)
D_EFE	− 8.310**					
	(3.651)					
%EFE		− 21.18**				
		(8.335)				
BlauEFE			− 17.89**			
			(9.095)			
EFE2				− 8.580**		
				(4.266)		
EFE3					− 11.71**	
					(5.298)	
shEFE30						− 6.622*
						(4.267)
SIZE	1.946***	1.761**	1.934***	1.844***	1.771**	1.810***
	(0.691)	(0.693)	(0.692)	(0.692)	(0.694)	(0.695)
LEV	18.55**	18.71**	18.21**	18.15**	18.56**	18.23**
	(7.577)	(7.574)	(7.580)	(7.579)	(7.579)	(7.586)
%BIG_INV	− 1.071	0.0146	− 1.180	− 0.930	0.0351	− 0.927
	(7.977)	(7.990)	(7.982)	(7.984)	(8.003)	(7.993)
LOSS	− 5.155	− 5.017	− 5.189	− 5.182	− 5.044	− 5.311
	(4.515)	(4.513)	(4.518)	(4.517)	(4.518)	(4.520)
BIG4	4.061	4.876	3.697	3.742	3.295	3.270
	(4.054)	(4.109)	(4.048)	(4.048)	(3.991)	(4.045)
AGE	0.102	0.114*	0.103	0.110*	0.118*	0.110*
	(0.067)	(0.066)	(0.068)	(0.067)	(0.068)	(0.068)
GROWTH	− 0.012	− 0.012	− 0.011	− 0.010	− 0.0010	− 0.009
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
BOND	− 3.499	− 3.416	− 3.098	− 3.030	− 3.088	− 3.038
	(5.395)	(5.390)	(5.396)	(5.396)	(5.394)	(5.401)
BUSY_SEASON	− 8.203	− 8.500	− 8.619	− 9.036	− 7.369	− 8.522
	(13.58)	(13.57)	(13.61)	(13.62)	(13.57)	(13.64)
BSIZE	4.451***	5.104***	4.235***	4.773***	5.237***	4.534***
	(1.532)	(1.572)	(1.528)	(1.560)	(1.607)	(1.550)
AC	1.157	0.935	1.065	0.451	0.759	− 0.0655
	(4.246)	(4.205)	(4.274)	(4.204)	(4.215)	(4.188)
Constant	− 31.85*	− 34.92**	− 30.69*	− 33.84**	− 38.75**	− 33.09*
	(17.00)	(16.95)	(17.08)	(16.98)	(17.08)	(17.01)
Observations	990	990	990	990	990	990
R-squared	0.039	0.040	0.038	0.038	0.039	0.036
Company FE	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES

Table 7 (continued)

The data present estimations based on GMM on Polish firms listed on the WSE between 2010 and 2015. ACCRUALS is the change in reported accruals of the financial year of firm j in period t and is considered an endogenous variable. D_EFE is a dummy variable that takes 1 when an international expert is on company j board at the end of year t, and 0 otherwise. %EFE is the percentage of international expert members on the supervisory board of firm j at year t. Blau index following Campbell and Mínguez-Vera (2008). Values of the Blau index for diversity range from 0 to a maximum of 0.5, which occurs when the board is not diversify. EFE2 is the dummy variable that takes 1 if the number of international experts on board is bigger that 2, and 0 otherwise. EFE3 is the dummy variable that takes 1 if the number of international experts on board is bigger that 3, and 0 otherwise. shEFE30 is the dummy variable that takes 1 if the number of international experts on board is bigger that 30%, and 0 otherwise. SIZE is the natural logarithm of noncurrent assets of firm j at time period t. LEV is the total liabilities to total assets ratio of firm j at the end of year t. %BIG_INV is the percentage of shares held by the largest investor of firm j at the end of year t. LOSS is a dummy variable that takes 1 when company j has an accounting loss in period t, and 0 otherwise. BIG4 is an external auditor's profile (Big 4 or non-Big 4 audit firm) of firm j for the period t. AGE is the natural logarithm of the age of firm j for the period t. GROWTH is the natural logarithm of company j's market growth potential ratio defined as the ratio of the firm's market and book value of equity at time period t. BOND is the dummy variable that takes 1 if the company issue bonds, and 0 otherwise. BUSY_SEASON is a dummy variable that takes 1 when company j publishes a financial report during the end of the calendar year in period t, and 0 otherwise. BSIZE is the natural logarithm of the total number of board members of firm j at time period t. AC is the dummy variable that takes 1 if the company has formed audit committee, and 0 otherwise. Standard errors are reported in brackets. The symbols *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively

the board's monitoring role and investigated one aspect of monitoring duties performed by the board: the oversight of financial reporting. More specifically, we concentrated on an important element of high-quality financial reporting: the timeliness of reporting. Thirdly, we studied the link between EFEs on boards and the timeliness of financial reporting in the setting of a two-tiered board structure, concentrating on the supervisory board.

Using a sample of companies listed on WSE, applying different empirical tests dealing with correlated variables and heterogeneity, and controlling for company and governance characteristics, we found that the presence of EFEs on a supervisory board reduces the ARL. Therefore, EFEs presence positively affects the timely delivery of financial reports and, thus, increases FRQ. Furthermore, our findings suggest that it is the EFEs business experience that allows for the more effective oversight of corporate reporting processes. The results of sensitivity tests using an alternative measure of FRQ (change in accruals) were also consistent with our main findings.

Moreover, our results may help policymakers verify the usefulness of policies related to the promotion of diversity on boards and motivate them to take actions to increase EFEs presence on boards, leading to improved monitoring efforts. Moreover, the results provide a direction for shaping diversity policies in less advanced countries.

The research work reported in this paper naturally has limitations. First, our sample of companies is limited to those for which information on corporate governance was available. We also assume that EFEs are a homogenous group. Further studies could consider the diversity among EFEs and examine how their characteristics (e.g. geographic location, education, and type of international

experience) affect FRQ. Another stream of research could address the relevance-accuracy dilemma and investigate to what extent EFEs—in their efforts to improve the quality of accounting information—focus on relevance or faithful representation, or both.

Overall, our analyses provide evidence for the importance of having EFEs on a supervisory board. This is consistent with the resource-based theory, suggesting that an appropriate mix of experience and capabilities is needed to ensure efficient monitoring (Hillman and Dalziel 2003). Our study provides evidence on the association between the presence of EFEs on a supervisory board and the timeliness of financial reports. Moreover, our work provides empirical evidence that supports the statement of Miletkov et al. (2017) about the importance of foreign directors in the case of companies internationalised both on commercial and financial bases, but also in the case of a limited supply of qualified local board members and a lower level of capital market development.

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Data availability A summary of the data is available from the authors.

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