Received: 1 October 2020 | Revised: 31 May 2022 | Accepted: 1 July 2022

DOI: 10.1111/ijau.12290

ORIGINAL ARTICLE

WILEY

Market reactions to the appointment of audit committee directors with financial and industry expertise in Germany

Sascha Kieback | Martin Thomsen | Christoph Watrin

School of Business and Economics, Institute of Accounting and Taxation, University of Muenster, Muenster, Germany

Correspondence
Martin Thomsen, Assistant Professor, School of Business and Economics, Institute of Accounting and Taxation, University of Muenster, Muenster, Germany.
Email: martin.thomsen@wiwi.uni-muenster.de

Funding information
The authors received no financial support for the research, authorship, and/or publication of this article.

Several calls from practitioners and the relevant literature suggest that audit committee directors with industry expertise complement the knowledge of financial experts. Thus, this study examines market reactions to the voluntary appointment of new audit committee directors with financial and industry expertise in Germany. Using hand-collected German data on newly appointed audit committee director announcements, we find a significantly positive market reaction around the appointment of financial experts with industry expertise but no reaction around the appointment of financial experts without industry expertise. Consistent with the expectation that some industries demand a higher need for specialised directors, we find a positive market reaction to the appointment of financial experts with industry expertise depending on whether the appointing firm is relatively more challenging for non-industry experts to monitor and advise. Overall, our findings suggest that market participants demand a combination of financial and industry expertise.

KEYWORDS
audit committee, boards of directors, corporate governance, financial expertise, industry expertise, market reaction

JEL CLASSIFICATION
M41, G34, G14, G18, K22

1 | INTRODUCTION

Given recent financial crises and corporate accounting scandals, board composition, director experience, qualifications, and skills have garnered increased attention and public scrutiny (e.g., Financial Times, 2018; The Wall Street Journal, 2020; Bloomberg, 2020). As a result, recent board composition guidelines emphasise the importance of directors with industry expertise. For example, Norges Bank Investment Management, manager of the world's largest sovereign wealth fund, has revised its global voting guidelines, requiring each investee board to have a thorough understanding of the firm's industry, thus allowing shareholders to appreciate which director brings relevant industry expertise to the board (Norges Bank Investment Management, 2020). Similarly, institutional investors' voting guidelines (e.g., BlackRock, 2020; Vanguard, 2020) consider industry expertise an important characteristic to qualify as a potential director.

Furthermore, practitioners emphasise that industry expertise is vital to audit committees. For example, the International Federation of Accountants (IFAC, 2019) posits that "diversity of experience, perspectives, and expertise, as well as industry knowledge, are also extremely important, particularly given the widening mandates of audit committees beyond financial reporting oversight." Moreover, the Institute of Chartered Accountants in England and Wales

(ICAEW, 2019) recommends that audit committees' "awareness of the business and/or the industry sector is critical".

Prior studies indicate that financial experts on audit committees improve the committee's ability to protect shareholder interests, thereby increasing shareholder value and inducing positive market reactions to audit committee appointments of directors with financial expertise (Davidson et al., 2004; DeFond et al., 2005). Despite calls to recognise the benefits of combining financial and industry expertise on audit committees (Bédard & Gendron, 2010; Cohen et al., 2008; Hillman & Dalziel, 2003), no prior study examines whether shareholders value industry expertise on audit committees. Thus, this study bridges the gap in the literature by exploring market reactions to the voluntary appointment of new audit committee members with financial and industry expertise.

It is important to emphasise why and how the industry-specific skill type is relevant in conveying financial information to shareholders. Audit committee directors with industry expertise better understand the risks and needs within their industry and provide industry-specific first-hand knowledge to the audit committee including information about competitors, supply chains, customers, and the regulatory environment. This first-hand knowledge likely reduces information asymmetries between management and audit committee and should permit improved monitoring of management decision-making. Additionally, audit committees protect shareholder interests and increase shareholder confidence. For instance, to ensure that unbiased financial information is disclosed to shareholders, audit committee members should have essential skills in understanding and interpreting the information correctly (Karamanou & Vafeas, 2005). Therefore, industry expertise is important for audit committee members because accounting practices are industry specific. Such expertise on audit committees complements the knowledge of financial experts (e.g., Bédard & Gendron, 2010; Cohen et al., 2014; Wang et al., 2015). For example, audit committees are expected to evaluate whether a firm's accounting practices are aggressive or conservative, which largely depends on a firm's operations within a certain industry. Specifically, audit committees of firms in the telecommunications, software, or pharmaceutical industries must assess the uncertainties of revenue recognition from complex licenses and contracts (BDO, 2017; PwC, 2017; PwC, 2019). Similarly, accounting for leases requires audit committees to understand the lease portfolio composition in different business environments (Deloitte, 2016; PwC, 2016). Moreover, expertise in the construction industry is vital to evaluate construction contracts, how construction project progress is measured, and whether the firm should recognise revenue on practical completion or as construction progresses (KPMG, 2014). Further, Cohen et al. (2014) identify the importance of industry expertise on audit committees in assessing the valuation of assets and impairment estimates. Industry expertise is vital in evaluating the impairment of intangible assets (e.g., goodwill).

Whether the market reacts favourably to new appointments of audit committee members with financial and industry expertise is ultimately an empirical question. On the one hand, the preceding examples highlight the advantages of industry expertise on audit committees in improving their ability to monitor financial reporting quality. Accordingly, industry expertise on audit committees improves their effectiveness, strengthening overall corporate governance, thus increasing shareholder value. Hence, we would observe a positive market reaction to the voluntary appointment of new audit committee members with financial and industry expertise. On the other hand, industry expertise on audit committees may not strengthen corporate governance or shareholder interests. Audit committee members with strong industry backgrounds and knowledge of industry standards may be reluctant to critically evaluate accounting practices (Cohen et al., 2014). Moreover, industry experts on audit committees may share professional backgrounds and social ties with firm executives, reducing the separation between audit committee directors and executives, thus hampering the quality of audit committee oversight of the auditing process and the financial reporting quality (Bruynseels & Cardinaels, 2014; Wang et al., 2015). Thus, we would not observe a market reaction to the appointment of audit committee members with financial and industry expertise. Overall, it is unclear whether the market reacts favourably to the appointment of new audit committee directors with financial and industry expertise.

We address this research question empirically using hand-collected data on new director appointments to audit committees of all publicly traded German firms in the DAX, MDAX, or SDAX selection indices during the 2009–2018 period. Germany is an interesting economy to investigate our research question because all German publicly traded firms are required to establish an audit committee since 2009 and – based on the European audit reform in 2014 (i.e., Directive 2014/56/EU and Regulation 537/2014) – Germany requires audit committees to collectively have expertise relevant to the firm's industry. As per the standard event study methodology, we exclude announcements made around other confounding news, such as earnings and dividend announcements, and announcements of multiple director appointments.

We hand-collect director profile information of each newly appointed director to audit committees from press release announcements, director biographies, and firm websites. Consistent with prior research, we define audit committee members as having financial expertise if their biographical information reflects current or previous experience as certified public accountants, certified tax advisers, chief financial officers, controllers, treasurers, bankers, or directors with experience in actively supervising accounting and finance personnel (e.g., Badolato et al., 2014; Bédard & Gendron, 2010; DeFond et al., 2005; Dhaliwal et al., 2010; Hoitash et al., 2009; Krishnan & Visvanathan, 2008). Additionally, we follow prior research and classify audit committee members as industry experts if the firm where they have been appointed to an audit committee shares the same two-digit Standard Industrial Classification (SIC) code with current or previous employment (Cohen et al., 2014; Faleye et al., 2018). We then assign each newly appointed director to the following mutually exclusive categories: (1) "financial-only" experts (i.e., financial experts without industry expertise); (2) "joint" experts (i.e., financial experts with industry expertise); and (3) non-experts (i.e., newly appointed audit

committee members who do not meet the definition of a financial expert).[1]

Using the announcements of 135 newly appointed audit committee directors, we find a significantly positive market reaction to the announcement of new audit committee directors with financial and industry expertise but no significant reaction to the announcement of financial experts without industry expertise. Thus, investors demand a combination of financial and industry expertise and expect the combination to improve corporate governance.

Prior research suggests a higher demand for specialised directors for some industries (e.g., pharma and biotechnology, energy, software, and services), whereas other industries (e.g., materials, commercial, and professional services) are less likely to seek such expertise (Faleye et al., 2018; Roe, 2017). We posit that the positive market reaction to the appointment of financial experts with industry expertise on audit committees depends on whether the appointing firm is relatively more difficult for non-industry experts to monitor and advise. Specifically, we expect the missing industry-specific unique knowledge on audit committees to hamper the monitoring and advisory duties as expertise about competitors, supply chains, and customers is lacking. In firms with relatively low R&D investments, we find that investors react positively to the audit committee appointments of financial-only experts. However, we find a positive market reaction to audit committee appointments of experts with financial and industry expertise in firms with relatively strong R&D investments, whereas investors do not value the appointment of financial-only experts. Thus, when firms are more challenging for non-industry experts to monitor and advise, financial and industry expertise on audit committees is beneficial.

Finally, we use the most recent European audit reform in 2014 to analyse the influence of recent changes in audit committee regulations. In 2014, the European Union introduced Directive 2014/56/EU and Regulation 537/2014 to reform the statutory audit. Particularly relevant to this study, the new audit standards of the EU made an important step in improving the audit committee's awareness of the industry characteristics and complexities. Our findings suggest that investors recognise the change in audit committee composition after the European Union introduced the audit reform and react positively when firms appoint new directors with industry expertise to meet the requirements introduced by the audit reform.

This study contributes to the relevant literature, with several implications for corporate governance practices. First, this study is the first to examine market reactions to the appointment of audit committee directors with industry expertise. Whilst prior research focusses on market reactions to financial expertise on audit committees (Davidson et al., 2004; DeFond et al., 2005), we find that the market values directors with financial and industry expertise. Consistent with theoretical models and expectations in prior studies (Bédard & Gendron, 2010; Cohen et al., 2008; Hillman & Dalziel, 2003), our results provide direct empirical evidence that market participants value integrating financial expertise and industry-specific skills on audit committees, enhancing the board's ability to protect shareholder interests and increase shareholder value.

Second, the perceived benefits of financial experts with industry expertise on audit committees are contextual. Given that firms with higher complexity are more likely to demand industry expertise, market participants value the appointment of audit committee directors with financial and industry expertise when firms are more challenging for non-industry experts to monitor and advise. Thus, this study is of particular interest to regulators who suggest implementing a one-size-fits-all approach to audit committee composition.

Third, we contribute to the growing literature on different audit committee skills beyond financial expertise, such as legal or IT expertise (Ashraf et al., 2020; Cohen et al., 2014; Krishnan et al., 2011). We add to these studies by showing that the appointment of directors with specific industry expertise is in the interest of shareholders, and the market values the nature of the director's expertise.

Fourth, this study contributes new insights into prior research on market reactions regarding outside director appointments (Fich, 2005; Rosenstein & Wyatt, 1990), audit committee financial expertise (Davidson et al., 2004; DeFond et al., 2005), and departures of audit committee directors (Singhvi et al., 2013). We extend the prior literature by identifying directors with industry knowledge and evaluating whether industry-specific skills are relevant to conveying objective financial information to shareholders and allowing them to make informed decisions.

Finally, we contribute to the existing audit committee literature by combining quantitative and qualitative methods based on unique hand-collected qualitative data from press release announcements, directors' biographies, and firm websites to verify directors' expertise and gauge the market's perception of new audit committee appointments. This combination of methods contributes to the growing literature on combining different methods to produce a more compressive answer to research questions (e.g., Samagaio et al., 2018).

The remainder of this paper is organised as follows. Section 2 outlines the regulatory environment and develops the empirical predictions. Section 3 presents the sample selection, biographical data, and research design. Section 4 presents the main results, additional analyses, and robustness tests. Section 5 concludes the paper and presents the limitations of this study.

2 | INSTITUTIONAL BACKGROUND AND EMPIRICAL PREDICTIONS

2.1 | Regulatory background of audit committees in Germany

Following the European Statutory Audit Directive 2006/43/EC, German legislators adopted an approach to voluntarily establish audit committees.[2] The German Stock Corporation Act (*Aktiengesetz* [AktG]) and the German Corporate Governance Code (*Deutscher Corporate Governance Kodex* [DCGK]) recommend all listed firms to set up an audit committee.[3] This voluntary approach is enforced by a "comply-or-explain" principle and requires listed firms to disclose and explain why they did not set up an audit committee (DCGK; Sec. 107 (3) and

161 (1) AktG). From the hand-collected data on audit committee formation of all publicly traded German firms listed on the regulated market of the Frankfurt Stock Exchange and in the DAX, MDAX, or SDAX selection indices by the end of 2018, we find that most firms (89.7%) complied with the DCGK's recommendation and established an audit committee.[4]

In response to the European Directive 2006/43/EC, German legislators introduced the expertise requirements of audit committee members, effective for fiscal years beginning in 2010. Section 107 (4), in conjunction with Section 100 (5), of the AktG requires at least one audit committee member to have financial expertise. The DCGK recommends that the audit committee chair must have specific knowledge and experience in applying accounting principles and internal control procedures. Moreover, the most recent European audit reform in April 2014 (European Directive 2014/56/EU and Regulation [EU] No 537/2014) introduced additional requirements specific to the role of audit committees and strengthened their responsibilities.[5] Particularly relevant to this study, Article 39.1 of the Directive introduced the requirement that audit committee members as a whole should have competence relevant to the industry in which the company has its business. Effective for financial years starting on or after 17 June 2016, Germany adopted this industry expertise attribute and required audit committees to collectively have expertise relevant to the firm's industry (Sec. 107 (4) AktG and Sec. 100 (5) AktG).[6]

2.2 | Audit committees and financial expertise

Theoretical corporate governance research explains the existence of audit committees via several theories (e.g., Boivie et al., 2016; Cohen et al., 2007; Kalbers & Fogarty, 1998). Agency theory is the predominant theory of audit committee foundations in accounting and finance research (Beasley et al., 2009; Cohen et al., 2008). From an agency perspective, boards and audit committees primarily monitor management, who may otherwise opportunistically manage the firm to increase personal wealth and act against the firm's best interests (Fama & Jensen, 1983; Jensen & Meckling, 1976). Audit committees primarily oversee the financial reporting process by regularly reviewing a firm's financial statements, audit processes, and internal accounting controls (Klein, 2002). Agency theory suggests that overseeing management reporting policies increases investors' ability to make informed decisions based on unbiased accounting information, thereby reducing agency costs (Archambeault et al., 2008; Bédard et al., 2004; Klein, 1998).

Most agency-based empirical accounting and auditing studies focus on the independence and size of audit committees (e.g., Abbott et al., 2000; Beasley, 1996; Carcello & Neal, 2000; Klein, 2002; Vafeas, 2005). Overseeing financial reporting and auditing issues involves the complexity of accounting concepts and requires a high degree of accounting sophistication to understand the consequences of accounting policies (DeFond et al., 2005; DeZoort, 1998; Kalbers & Fogarty, 1993). Accordingly, prior research indicates that financial experts are necessary and beneficial for monitoring the financial reporting process and ensuring high-quality financial reporting. For example, audit committee financial expertise is associated with lower abnormal accruals, higher accruals quality, and more accounting conservatism (Bédard et al., 2004; Carcello et al., 2006; Dhaliwal et al., 2010; Krishnan & Visvanathan, 2008; Xie et al., 2003). The financial expertise of audit committee members is also associated with a lower likelihood of internal control weaknesses (Hoitash et al., 2009; Krishnan, 2005; Zhang et al., 2007). Moreover, financial experts with higher relative status are associated with fewer accounting irregularities (Badolato et al., 2014). More recently, studies examine other characteristics beyond financial expertise (Ashraf et al., 2020; Cohen et al., 2014; Krishnan et al., 2011). We contribute to the more recent literature by focusing on additional skills beyond financial expertise. Using both financial and industry expertise allows us to expand these studies and to present direct empirical evidence on whether market participants value other characteristics.

2.3 | Audit committees and industry expertise

An alternative function of boards is to provide resources (Boyd, 1990; Pfeffer & Salancik, 1978). Resource dependence theory suggests that directors provide resources to support management with knowledge, guidance, and connections (Pfeffer & Salancik, 1978). In contrast to agency theory, directors assist with expertise and advice rather than exclusively monitoring management (Hillman et al., 2000). Industry expertise provides relevant resources and improves the capability of directors in different ways. First, industry experts better understand the relevant criteria for measuring and evaluating firm performance in the industry. Dichev et al. (2013)) report that deviations from industry practices can serve as red flags for potential earnings misrepresentations. Second, industry experts' prior experience in the industry allows for greater access to professional networks, increasing access to relevant industry information (Oehmichen et al., 2017). Thus, industry expertise enables directors to process information about the firm and its business environment faster and at lower costs (Faleye et al., 2018).

Following the resource dependence theory, Cohen et al. (2008) argue that industry expertise contributes to the ability of audit committees to evaluate whether accounting methods accurately reflect transactions. Similarly, Bédard and Gendron (2010) suggest that industry knowledge may foster the effectiveness of audit committees. For example, accounting methods follow industry-specific practices in revenue recognition (e.g., Beasley et al., 2000; Beasley et al., 2010) and accounting for leases (e.g., Dye, 2002). In particular, transactions in the telecommunications, software, pharmaceutical, and construction industries include complex licenses and contracts, which typically involve cash receipts that do not match the timing of revenue recognition (BDO, 2017; PwC, 2017; PwC, 2019). Similarly, audit committees evaluate whether contracts allow for recognising revenue progressively as construction work takes place or at a specific point in time on transfer of control (KPMG, 2014). Lease portfolios in different business environments are a prominent area of accounting judgment,

with a considerable impact on performance measures and, hence, of particular importance for audit committees (Deloitte, 2016; Dye, 2002; PwC, 2016).

In addition to their oversight of financial reporting, industry experts provide operational first-hand knowledge (e.g., about competitors and customers) to the board, which translates to more transparency and less information asymmetry. Audit committee members with industry expertise better understand the risks and opportunities *within* their industry and have a better understanding of the regulatory environment. Consequently, we expect the inclusion of industry experts on audit committees to result in a better monitoring of strategic decisions (i.e., to oversee and approve the top management teams' strategic decisions). The top management team is central in determining a firm's philosophy and strategic orientation; however, industry experts could provide strategic advice and could vote against major strategic firm decisions (e.g., moving firm operations offshore).

Furthermore, industry expertise on audit committees may improve communication with auditors. Prior research shows that auditor industry specialisation adds value to auditing and ensures higher-quality financial reporting. For example, auditor industry specialisation is associated with fewer financial restatements (Romanus et al., 2008; Stanley & DeZoort, 2007) and higher earnings quality (Balsam et al., 2003; Krishnan, 2003; Reichelt & Wang, 2010). Further, it enhances auditors' error detection (Owhoso et al., 2002). Audit committee members with strong industry expertise are more likely to understand industry-specific auditing practices and efforts, inducing improved communication with the auditor and enhanced financial reporting quality (Cohen et al., 2014).

2.4 | Does the market value the combination of financial and industry expertise on audit committees?

Prior research on market reactions to director appointments focusses on the appointment of outside directors to the board of directors (e.g., Fich, 2005; Rosenstein & Wyatt, 1990). Empirical evidence on market reactions to announcements of new audit committee member appointments and whether the market values the expertise of audit committee members is scarce. Particularly relevant to our study, DeFond et al. (2005) examine whether the market participants react favourably to announcements of new appointments of directors with financial expertise to the audit committee. Using a sample period before the Sarbanes-Oxley Act, they find a positive market reaction to the appointment of audit committee members with accounting financial expertise but no corresponding reaction to those with non-accounting financial expertise. DeFond et al. (2005) conclude that the monitoring role of financial experts on audit committees can effectively improve corporate governance through greater monitoring of the quality of the financial reporting process by the audit committee.

We expand this view by examining the research question of whether the market values the combination of financial and industry expertise on audit committees. Hillman and Dalziel (2003) highlight the importance of integrating agency and resource dependence perspectives. Based on the theoretical model of Hillman and Dalziel (2003), Cohen et al. (2008), and Bédard and Gendron (2010), a call for research that examines how the resource dependence focus of industry experts on audit committees influences the agency role of financial experts. We contribute to this theoretical purview and examine whether the market reacts to appointments of audit committee members with financial and industry expertise to potentially examine the benefits of appointing various types of expert audit committee members.

Anecdotal evidence from audit committee announcements demonstrates that firms consider industry expertise in their nominations. For example, in the announcement of Michael Kaschke's nomination to the board and audit committee of Deutsche Telekom in April 2015, Deutsche Telekom announced that Mr. Kaschke brings "both a wealth of high-technology expertise and the broad business and management experience he has gained from guiding a globally successful industrial company" (Deutsche Telekom, 2015).

However, little is known about how financial expertise interacts with other audit committee directors' expertise and how a combination thereof affects financial reporting quality. Krishnan et al. (2011) find enhanced financial reporting quality for firms with audit committee members, including those with financial and legal expertise. Cohen et al. (2014) report that audit committee members with financial and industry expertise are associated with lower income-increasing discretionary accruals (i.e., less upward earnings management) and lower non-audit fees as a proportion of total fees. They conclude that audit committees having directors with both financial and industry expertise more effectively enhance financial reporting quality relative to audit committees having directors with only financial expertise.

The industry-specific nature of accounting estimate practices and the challenges in applying accounting standards for different industries suggest that industry expertise on audit committees facilitates committees' abilities to ensure high-quality financial reporting (e.g., Bédard & Gendron, 2010; Cohen et al., 2014; Wang et al., 2015; ICAEW, 2019; EY, 2019).

The preceding discussion suggests that industry expertise can augment the knowledge of financial experts. Financial experts with industry expertise may better understand the appropriateness of applying accounting methods than those who are solely financial experts. Financial and industry expertise may be complementary, enhancing financial reporting quality. Thus, we would observe a positive market reaction to announcements of new appointments of audit committee directors with financial and industry expertise if industry-specific skills and resources help identify accounting complexities and ensure high-quality financial reporting.

However, industry expertise may in fact hamper effectiveness in ensuring financial reporting quality for several reasons. First, strong familiarity with industry standards and practices may reduce the continuous critical evaluation of accounting practices, blinding directors to industry practice changes. Second, top executives are industry experts by definition, which implies that both audit committee industry experts and top executives have similar professional backgrounds. Prior experience in the firm's industry may reduce the effective

separation between top executives and audit committee industry experts because they share professional connections, networks, and social ties (Wang et al., 2015). Similar professional backgrounds and connections between audit committee industry experts and top executives can discourage alternative views, leading to inefficient and suboptimal decisions, thus hampering audit committee oversight quality (Bruynseels & Cardinaels, 2014). Hence, we would not observe a market reaction to the appointment of audit committee members with financial and industry expertise if the combination diminishes the effectiveness of audit committees.

Whether the market reacts favourably to the appointment of new audit committee directors with financial and industry expertise is an empirical issue this study addresses.

3 | DATA AND RESEARCH DESIGN

3.1 | Sample selection

The sample selection process begins with all publicly traded German firms listed on the regulated market of the Frankfurt Stock Exchange and in the DAX, MDAX, or SDAX selection indices by the end of 2018. We require sample firms to be included in the selection indices because these firms must fulfill the highest international transparency requirements of the Prime Standard market segment of the Frankfurt Stock Exchange.[7] In total, 145 firms meet these initial requirements.[8] We then identify all newly appointed audit committee directors by hand-collecting and examining all annual reports of all sample firms during the 2009–2018 sample period. This identification strategy is advantageous because it provides the most comprehensive and informative sample of all new director appointments to audit committees over our 10-year sample period.[9] Further, we require appointments to be new director appointments to unambiguously identify market reactions. We identify 430 newly appointed directors to audit committees of 118 firms between 2009 and 2018.[10]

Table 1 summarises the identification process of the relevant audit committee director announcements. We use the Lexis/Nexis newswire system, the German Association for ad hoc Publicity (DGAP) system, and the dpa-AFX ProFeed to identify press releases and corresponding press release announcement dates for each newly appointed audit committee member. We combine the results of the three major retrieval systems to unambiguously identify the first public disclosure announcement date of director appointments. We find the announcement dates for 298 newly appointed directors. Following the standard event study methodology (e.g., Dyckman et al., 1984; Foster, 1980), we eliminate 136 announcement dates that coincide with confounding events (e.g., annual meeting news, earnings or dividend announcements, mergers, and acquisitions announcements). Consistent with prior research that examines market reactions to director appointments (e.g., Rosenstein & Wyatt, 1990), we restrict director announcements to single director appointments, thus exclude 25 announcements that coincide with appointments of multiple directors to allow the market to unambiguously identify director expertise.

TABLE 1 Sample selection

	No. of newly appointed directors
Initial sample: Newly appointed directors to audit committees between 2009 and 2018	430
Less director announcements with unavailable press releases at retrieval newswire systems	(−132) = 298
Less director announcements that coincide with annual meeting news or other confounding events (earnings or dividends announcements, mergers, and acquisitions announcements)	(−136) = 162
Less director announcements that coincide with multiple director appointments	(−25) = 137
Less director announcements with missing return data on Compustat Global - security daily	(−2) = 135
Final sample	135

Note: This table reports the sample selection process of new director appointments to the audit committee. The sample covers the 2009–2018 period. Data on firm characteristics and daily stock returns are obtained from the Compustat Global database. Data on institutional ownership are collected from the Thomson Reuters database and, in case of missing values, are additionally hand-collected from publicly available annual reports.

We then eliminate two announcements because of missing return data. The final sample comprises 135 announcements of newly appointed directors to audit committees of 69 firms between 2009 and 2018.

3.2 | Biographical data

We obtain director profile information by hand-collecting data on the expertise of each newly appointed director to audit committees from press release announcements, directors' biographies, and firm websites. We focus on biographical data on financial and industry expertise and related specific qualifications to assign each newly appointed director to expert categories. We use actual qualifications of newly appointed directors instead of designations of a director as a financial expert by the firm because a director's capabilities and contribution to the overall audit committee effectiveness are independent of such designations (Cohen et al., 2014; Hoitash et al., 2009; Krishnan & Lee, 2009; Krishnan & Visvanathan, 2008).

We use the standard classification method to assess audit committee members' financial expertise. Following prior literature, audit committee members are financial experts if their biographical information reflects current or previous experience as certified public accountants, certified tax advisers, chief financial officers, controllers, treasurers, bankers, or directors with experience in actively supervising accounting and finance personnel (e.g., Badolato et al., 2014; Bédard & Gendron, 2010; Cohen et al., 2014; DeFond et al., 2005;

Dhaliwal et al., 2010; Hoitash et al., 2009; Krishnan & Visvanathan, 2008).

Further, we use director profile data from directors' biographies to proxy for the industry expertise of audit committee directors. We start by hand-collecting the employment history for each newly appointed audit committee member to gather firms and organisations with which they are or were employed. Following prior research, we use industry classifications of current and previous employers of newly appointed audit committee members to measure industry expertise (Cohen et al., 2014). Specifically, we classify each audit committee member as an industry expert if the firm shares the same two-digit SIC code with the current or previous employment (Faleye et al., 2018).[11]

Based on the classification procedure, we assign each newly appointed director to three mutually exclusive categories. We begin by appointing directors as financial experts if they satisfy the financial expertise definition. We define a "financial-only" expert as one with financial expertise but no industry expertise to isolate the effect of financial expertise from that of industry expertise.[12] Next, we construct a group of "joint" expertise, newly appointed audit committee directors with financial and industry expertise. Finally, we define non-experts as all audit committee members who do not meet the definition of a financial expert.[13]

The cross-sectional tests require firm-level data on corporate governance and firm characteristics. We hand-collect board and audit committee related corporate governance data, such as board size, audit committee size, and the number of committees from appointing firms' publicly available annual reports. Data on institutional ownership are collected from the Thomson Reuters database and, in the case of missing values, are additionally hand-collected from publicly available annual reports. Data on firm characteristics and daily stock returns are obtained from the Compustat Global database.

3.3 | Methodology

To explore investors' assessments of directors with financial and industry expertise, we use a standard event study methodology and examine cumulative abnormal returns (CARs), where Day 0 is the announcement date of the new audit committee director appointment. We examine 2-day (Day 0 through Day +1), 3-day (Day 0 through Day +2), and 4-day (Day 0 through Day +3) CARs, beginning on the day of the director announcement and ending 1 day, 2 days, and 3 days after the announcement date, respectively.[14] To estimate daily abnormal returns, we follow the methodology described by Brown and Warner (1985) and use a market-adjusted returns model, which assumes the best predictor of returns for a given security is the current market return (Peterson, 1989). We follow Lakonishok et al. (1994) and form size quintile portfolios based on market capitalisation and calculate the equally weighted average return for each portfolio. To calculate daily market-adjusted returns, we adjust the return $R_{i,t}$ of sample firm i on event day t by the return $R_{p(i),t}$ earned on the corresponding size quintile portfolio to which firm i belongs. The CARs on the announcement of the new audit committee director appointment are defined as either 2-day (i.e., CAR [0;1]), 3-day (i.e., CAR [0;2]), or 4-day (i.e., CAR [0;3]) CARs.

We extend our univariate tests by conducting multivariate analyses. To assess CARs around the announcements of the newly appointed directors, we regress CARs on the type of experts and other control variables using equation (1) below:

$$CAR = \beta_0 + \beta_1 FIN\_INDUSTRY + \beta_2 FIN\_NON\_INDUSTRY + \beta_3 LEV + \beta_4 SIZE + \beta_5 MTB + \beta_6 ROA + \beta_7 GOV + \varepsilon, \quad (1)$$

where *CAR* is either CAR [0;1], CAR [0;2], or CAR [0;3], respectively. We use *FIN_INDUSTRY* to measure the "joint" financial and industry expertise. *FIN_INDUSTRY* equals one if the appointed director is a financial and industry expert, and zero otherwise. We employ *FIN_NON_INDUSTRY* to measure "financial-only" expertise. Specifically, *FIN_NON_INDUSTRY* equals one if the appointed director has financial expertise but no industry expertise, and zero otherwise.

We follow the prior event study methodology that analyses director appointments to boards and audit committees to define a set of firm characteristic control variables (e.g., Davidson et al., 2004; DeFond et al., 2005; Rosenstein & Wyatt, 1990; Singhvi et al., 2013). The multivariate analyses control for leverage (*LEV*), defined as total debt to total assets, and firm size (*SIZE*), defined as the natural logarithm of market capitalisation.[15] *MTB* is the market-to-book ratio. Return on assets (*ROA*) is the net income scaled by total assets.[16] All control variables of firm characteristics are computed based on the values at the end of the fiscal year prior to director appointments.

DeFond et al. (2005) indicate that the strength of a firm's corporate governance may influence the market reaction to audit committee director appointments. Thus, we follow DeFond et al. (2005) and include a summary score of corporate governance combining four corporate governance characteristics (i.e., board size, audit committee size, institutional ownership, and number of committees) into a single dichotomous variable, where values of one signal strong corporate governance and zero, weak corporate governance. Aggregating corporate governance characteristics allows for a more comprehensive measure and comparison of the strength of a firm's corporate governance over individual measures (DeFond et al., 2005). Prior research on market valuation and board size suggests that smaller board size is associated with better corporate governance (e.g., Eisenberg et al., 1998; Jensen, 1993; Yermack, 1996). Hence, *BOARD_SIZE* equals one if the appointing firm's board size is less than the sample median, and zero otherwise. Anderson et al. (2004) provide market-based evidence that larger audit committees increase the reliability of financial reporting, inducing accounting transparency and a lower cost of debt financing. Following DeFond et al. (2005), we control for board resources devoted to the audit committee using the relation between audit committee size and the full board size. Thus, *AC_SIZE* equals one if the relation between the appointing firm's audit committee size and its full board size is greater than the sample median, and zero otherwise. Prior research on firm value and equity ownership

indicates that institutional investors have greater expertise and can monitor management at lower costs than other shareholders, leading to a positive relation between institutional ownership and firm value (e.g., McConnell & Servaes, 1990). *INST_OWN* equals one if the appointing firm's percentage of institutional ownership is greater than the sample median, and zero otherwise. Adams (2003) and Laux and Laux (2009) suggest the delegation of different board tasks and functions to separate committees as important and beneficial to ensure overall board oversight. *N_COM* equals one if the appointing firm's number of committees is greater than the sample median, and zero otherwise. Finally, we construct a summary corporate governance measure, *GOV*, which is equal to one if the sum of the four dichotomous governance variables is greater than the sample median, and zero otherwise.[17] Thus, *GOV* aggregates the number of individual corporate governance characteristics in which a firm has strong corporate governance.

4 | EMPIRICAL RESULTS

4.1 | Descriptive statistics

Table 2 presents the distribution of audit committee director announcements by index, year, and month. Panel A reports the index distribution of audit committee director announcements. Our sample selection method encompasses publicly traded German firms in the DAX, MDAX, or SDAX selection indices. Panel A shows that the announcements are reasonably distributed across the three indices, with a slightly lower number of SDAX firm announcements. Thus, the sample selection technique induces consistent distribution not biased toward any index.

Panel B reports the yearly distribution of audit committee director announcements. Director appointments are uniformly distributed across the sample period, with a slightly lower frequency in 2009 and

TABLE 2 Distribution of announcements

Panel A: Distribution by index			Panel B: Distribution by year			Panel C: Distribution by month		
	Frequency	Percentage		Frequency	Percentage		Frequency	Percentage
DAX	54	40.0%	2009	6	4.4%	January	6	4.4%
MDAX	50	37.0%	2010	9	6.7%	February	13	9.6%
SDAX	31	23.0%	2011	14	10.4%	March	26	19.2%
			2012	14	10.4%	April	15	11.1%
			2013	12	8.8%	May	4	3.0%
			2014	21	15.6%	June	7	5.2%
			2015	14	10.4%	July	14	10.4%
			2016	17	12.6%	August	9	6.7%
			2017	12	8.8%	September	10	7.4%
			2018	16	11.9%	October	7	5.2%
						November	10	7.4%
						December	14	10.4%
Total	135	100.0%		135	100.0%		135	100.0%

Note: This table reports the distribution of new audit committee director announcements by index (Panel A), year (Panel B), and month (Panel C). The sample covers the 2009–2018 period. All observations are subject to the criteria described in Table 1.

TABLE 3 Descriptive statistics

Panel A: Descriptive statistics by director category						
	N	Mean	S.D.	p25	p50	p75
LEV	**135**	**0.654**	**0.184**	**0.528**	**0.668**	**0.769**
FIN_INDUSTRY	29	0.707	0.253	0.528	0.742	0.943
FIN_NON_INDUSTRY	41	0.641	0.143	0.510	0.618	0.747
NON_EXPERT	65	0.639	0.168	0.559	0.668	0.741
SIZE	**135**	**8.538**	**1.737**	**7.097**	**8.476**	**10.330**
FIN_INDUSTRY	29	8.276	1.711	6.730	8.163	9.434
FIN_NON_INDUSTRY	41	8.408	1.760	7.073	8.308	9.797
NON_EXPERT	65	8.738	1.738	7.700	8.608	10.415
MTB	**135**	**2.031**	**1.617**	**0.995**	**1.550**	**2.625**
FIN_INDUSTRY	29	1.830	2.165	0.744	1.174	1.833
FIN_NON_INDUSTRY	41	1.768	1.233	0.927	1.428	2.071
NON_EXPERT	65	2.286	1.531	1.272	2.109	2.816
ROA	**135**	**0.024**	**0.063**	**0.003**	**0.027**	**0.052**
FIN_INDUSTRY	29	0.016	0.053	0.001	0.011	0.036
FIN_NON_INDUSTRY	41	0.024	0.046	0.003	0.029	0.059
NON_EXPERT	65	0.027	0.075	0.008	0.034	0.055
GOV	**135**	**0.156**	**0.364**	**0.000**	**0.000**	**0.000**
FIN_INDUSTRY	29	0.172	0.384	0.000	0.000	0.000
FIN_NON_INDUSTRY	41	0.146	0.358	0.000	0.000	0.000
NON_EXPERT	65	0.154	0.364	0.000	0.000	0.000

Panel B: Mean differences						
	FIN_INDUSTRY - FIN_NON_INDUSTRY		*FIN_INDUSTRY - NON_EXPERT*		*FIN_NON_INDUSTRY - NON_EXPERT*	
	Diff.	***t* value**	**Diff.**	***t* value**	**Diff.**	***t* value**
LEV	0.066	1.40	0.068	1.53	0.002	0.04
SIZE	−0.132	−0.31	−0.462	−1.20	−0.330	−0.95
MTB	0.062	0.15	−0.456	−1.17	−0.518*	−1.82
ROA	−0.008	−0.69	−0.011	−0.71	−0.003	−0.21
GOV	0.026	0.29	0.018	0.22	−0.008	−0.10

Panel C: Correlation matrix								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
(1) *FIN_INDUSTRY*		**−0.35**	**−0.50**	**0.17**	−0.09	**−0.21**	−0.17	0.02
(2) *FIN_NON_INDUSTRY*	**−0.35**		**−0.64**	−0.09	−0.05	−0.10	0.01	−0.02
(3) *NON_EXPERT*	**−0.50**	**−0.64**		−0.06	0.12	**0.27**	0.12	−0.00
(4) *LEV*	0.15	−0.05	−0.08		**0.42**	**−0.50**	**−0.52**	**−0.28**
(5) *SIZE*	−0.08	−0.05	0.11	**0.42**		0.05	0.04	**−0.29**
(6) *MTB*	−0.07	−0.11	0.15	**−0.41**	0.00		**0.59**	**0.23**
(7) *ROA*	−0.07	0.00	0.05	−0.07	**0.19**	**0.29**		**0.20**
(8) *GOV*	0.02	−0.02	−0.00	**−0.23**	**−0.28**	**0.29**	0.15	

Note: This table reports descriptive statistics for the main variables used in our analyses. Panel A reports descriptive statistics for the whole sample and partitioned by the director category. Panel B reports the difference in means between each group and the *t* value for mean differences. Panel C reports the correlation coefficients for the main variables used in our analyses. Pearson correlations are reported below the diagonal, and Spearman correlations are reported above the diagonal. All reported correlations in bold are statistically significant at the 5% level or better. * indicates significant mean differences at 10%. All variables are defined in Appendix A.

2010. Panel C presents the monthly distribution of audit committee director announcements. We observe that audit committee director announcements are reasonably distributed throughout the year, with a slightly higher frequency in March. The sample includes 87% of calendar-year-end firms that typically announce new director candidates before annual meetings between April and June.[18] Even so, Panel C reveals that the new audit committee director appointments are consistently announced throughout the year.

Table 3 reports descriptive statistics on firm characteristics for the entire sample and partitioned for each director category: joint experts (*FIN_INDUSTRY*), financial-only experts (*FIN_NON_INDUSTRY*), and non-experts (*NON_EXPERT*). From Panel A, 70 (52%) newly appointed audit committee members are financial experts (i.e., *FIN_INDUSTRY* or *FIN_NON_INDUSTRY*), including 29 (21%) joint and 41 (30%) financial-only experts. Panel A also reports descriptive statistics of *LEV*, *SIZE*, *MTB*, *ROA*, and *GOV*. For example, the mean firm in the sample reports *LEV* of 65.4% of total assets, with a median of 66.8%. The median *SIZE* is 8.476, corresponding to approximately 4,798 million of market capitalisation. Since the median value of the sum of the four dichotomous corporate governance variables (i.e., *BOARD_SIZE*, *AC_SIZE*, *INST_OWN*, and *N_COM*) is two, we classify firms with values above two as having strong governance (i.e., *GOV* = 1) and firms with values equal to or below two as having weak governance (i.e., *GOV* = 0). Additional untabulated statistics reveal that the average board (audit committee) of the sample has 14.3 (4.8) members. The average institutional ownership is 52.3%, and firms delegate different board tasks to, on average, 4.5 separate committees (untabulated). Overall, descriptive statistics of our sample are comparable to prior research (e.g., DeFond et al., 2005).

Table 3, Panel B, reports univariate tests of mean differences in firm characteristics between firms with newly appointed joint experts, financial-only experts, and non-experts. There is no significant difference between the three groups for all firm characteristics, except that firms appointing financial-only experts (*FIN_NON_INDUSTRY*) have significantly lower *MTB*s than firms appointing non-experts (*t* value = −1.82). In additional (untabulated) tests, we find that all individual board characteristics employed to construct *GOV* (i.e., *BOARD_SIZE*, *AC_SIZE*, *INST_OWN*, and *N_COM*) are not significantly different across the three groups

Panel C presents the Pearson (below the diagonal) and Spearman (above the diagonal) correlation coefficients for the multivariate regression analyses variables. Using Spearman correlations, *FIN_INDUSTRY* positively (negatively) correlates with *LEV* (*MTB*). *FIN_NON_INDUSTRY* is not significantly correlated with any control variable in the regression analyses.

4.2 | Overall market reaction

Table 4 presents market reactions to the announcements of 135 newly appointed audit committee directors. Panel A reports CARs for appointments of financial experts (*FIN_EXPERT*) and non-experts (*NON_EXPERT*). Using a two-day event window (i.e., CAR [0;1]), we observe CARs of 0.8% associated with the appointment of financial experts (*t* value = 1.99), whereas the appointment of non-experts is insignificant at conventional levels (*t* value = 0.54). This result is consistent with Davidson et al. (2004) and DeFond et al. (2005) and supports the notion that investors value differences in the audit

TABLE 4 Market reactions to audit committee director appointments

Panel A: Financial experts and non-experts			
	(1) CAR [0;1]	**(2) CAR [0;2]**	**(3) CAR [0;3]**
FIN_EXPERT	0.008**	0.007*	0.007
t value	(1.99)	(1.95)	(1.09)
N	70	70	70
NON_EXPERT	0.001	−0.002	−0.006*
t value	(0.54)	(−0.91)	(1.98)
N	65	65	65
Panel B: Financial experts with and without industry expertise			
	(1) CAR [0;1]	**(2) CAR [0;2]**	**(3) CAR [0;3]**
FIN_INDUSTRY	0.010***	0.013***	0.012**
t value	(3.10)	(3.29)	(2.19)
N	29	29	29
FIN_NON_INDUSTRY	0.006	0.004	0.003
t value	(0.94)	(0.66)	(0.34)
N	41	41	41

Note: This table reports two-, three-, and four-day CARs to the announcement of director appointments. *, **, *** indicate significance at 10%, 5%, and 1%, respectively (two-tailed test). All variables are defined in Appendix A.

committee expert types. Specifically, Panel A reveals that the market does not value the appointment of non-experts with other director characteristics (e.g., legal, technology, or politics background) who do not meet the definition of a financial expert.[19]

Panel B divides financial experts into two groups: financial experts with industry expertise (*FIN_INDUSTRY*) and those without industry expertise (*FIN_NON_INDUSTRY*). This analysis indicates a significantly positive market reaction to the appointment of financial experts with industry expertise. Depending on the event window, we find significantly positive CARs ranging from 1.0% to 1.3% around the appointment of financial experts with industry expertise. However, we find insignificant CARs around the appointment of financial experts without industry expertise. Thus, we find that the positive market reaction to the appointment of financial experts in Panel A is primarily driven by financial experts with industry expertise.

Overall, Table 4 suggests that investors value additional expertise on audit committees, and financial and industry expertise help ensure high-quality financial reporting. However, an appointing firm's business environment may influence market reactions. Hence, we perform several multivariate analyses to explain market reactions to the appointments of financial experts with industry expertise.

4.3 | Cross-sectional results

Table 5 reports the results of estimating equation (1) that regresses CARs on indicator variables capturing whether newly appointed directors are joint experts (*FIN_INDUSTRY*) or financial-only experts (*FIN_NON_INDUSTRY*) and includes control variables that capture the appointing firm's *SIZE*, *MTB*, *LEV*, *ROA*, and *GOV*. Using CAR [0;1] as the dependent variable (Model 1), the coefficient on *FIN_INDUSTRY* is significantly positive (coeff. = 0.9%; *t* value = 2.02). We observe similar positive market reactions to the appointment of joint experts using CAR [0;2] (Model 2) or CAR [0;3] (Model 3) as the dependent variable. Further, constant over Models 1 to 3, the coefficient on *FIN_NON_INDUSTRY* is insignificant, indicating that the appointment of financial-only experts is not statistically different relative to the appointment of non-experts. The results are consistent with the univariate analysis in Table 4 and suggest that the market values appointments of audit committee members with financial and industry expertise after controlling for firm characteristics. Consistent with prior research on appointments and departures of directors to audit committees (e.g., DeFond et al., 2005; Singhvi et al., 2013), we find no significant associations between CARs surrounding the appointment of financial experts and firm characteristic control variables.

4.4 | Examination of the demand for industry expertise

Prior research suggests that the demand for industry expertise is higher for firms with greater monitoring or advising needs (e.g., Fahlenbrach et al., 2010; Linck et al., 2008; Raheja, 2005). Industry experts obtain information needed for effective oversight faster

TABLE 5 Cross-sectional regressions of CARs on firm characteristics

	(1) CAR [0;1]	(2) CAR [0;2]	(3) CAR [0;3]
Intercept	−0.001	−0.012	−0.039*
	(−0.04)	(−0.73)	(−1.67)
FIN_INDUSTRY	0.009**	0.015***	0.019***
	(2.02)	(3.10)	(2.90)
FIN_NON_INDUSTRY	0.005	0.007	0.012
	(0.71)	(1.08)	(1.10)
LEV	0.003	0.002	0.012
	(0.17)	(0.11)	(0.68)
SIZE	−0.000	0.001	0.002
	(−0.14)	(0.37)	(0.97)
MTB	0.001	0.002	0.002
	(0.54)	(1.01)	(1.06)
ROA	−0.018	−0.053	−0.053
	(−0.58)	(−1.27)	(−1.25)
GOV	0.003	0.000	−0.004
	(0.32)	(0.02)	(−0.38)
N	135	135	135
Adj. R^2	2.2%	6.0%	5.4%

Note: This table reports regressions of two-, three-, and four-day CARs to the announcement of director appointments on firm characteristics. *, **, *** indicate significance at 10%, 5%, and 1%, respectively (two-tailed test). All variables are defined in Appendix A.

and at lower costs. Moreover, they can better process such information because of their prior experience in the firm's industry relative to experts without industry expertise (Faleye et al., 2018). This suggests that the value of industry experts' specialised insights and familiarity with firms' operations increases in complex firms that are relatively more difficult for non-industry experts to monitor and advise. Thus, we expect the positive market reaction to the appointment of financial experts with industry expertise on audit committees to depend on whether the appointing firm is relatively more challenging for non-industry experts to monitor and advise.

Following prior research, we use R&D intensity (ratio of R&D expenditures to sales) to proxy for firms with high demand for industry expertise (e.g., Fahlenbrach et al., 2010; Faleye et al., 2018; Linck et al., 2008; Raheja, 2005).[20] We partition the sample into two subsamples based on whether a firm's R&D intensity is above or below the sample median and estimates a separate regression for each subsample. Table 6 presents the results of the subsample tests. When R&D intensity is relatively low (i.e., Models 1, 3, and 5), we find that the coefficient on *FIN_NON_INDUSTRY* is significantly positive. This finding indicates that the appointment of a financial expert without industry expertise is valued by investors when firms are relatively easy to monitor and advise. However, when the R&D intensity is relatively high (i.e., Models 2, 4, and 6), the coefficient on *FIN_INDUSTRY* is significantly positive, whereas the coefficient on *FIN_NON_INDUSTRY* is insignificant. Consistent with our expectation, this finding suggests that investors react positively to audit committee appointments of experts with both financial and industry expertise when the appointing firm has relatively strong investments in R&D. However, the appointment of financial experts without industry expertise is not valued by investors of firms with relatively high R&D intensity. Hence, our findings are consistent with the notion that combinations of financial and industry expertise on audit committees help ensure high-quality financial reporting when firms are more challenging for non-industry experts to monitor and advise.[21]

4.5 | The effect of changes in European audit regulation

This subsection examines a relevant change in European audit regulations to help explain the positive market reaction to newly appointed audit committee directors with financial and industry expertise. In 2014, the European Union introduced Directive 2014/56/EU and Regulation 537/2014 to reform the statutory audit. The reform was effective from 16 June 2016, onward. Particularly relevant to our study, the EU audit standards took a vital step in improving audit committee awareness of industry characteristics and complexities. Specifically, Directive Article 39.1 requires audit committee members as a

TABLE 6 Cross-sectional regressions of CARs and the level of R&D investments

	CAR [0;1]		CAR [0;2]		CAR [0;3]	
	(1) *R&D* ≤ p50	(2) *R&D* > p50	(3) *R&D* ≤ p50	(4) *R&D* > p50	(5) *R&D* ≤ p50	(6) *R&D* > p50
Intercept	−0.021	−0.002	−0.037*	−0.027	−0.040	−0.085*
	(−1.00)	(−0.10)	(−1.70)	(−0.97)	(−1.63)	(−1.81)
FIN_INDUSTRY	0.006	0.018**	0.013*	0.030***	0.016**	0.043***
	(0.87)	(2.53)	(1.90)	(3.09)	(2.16)	(2.84)
FIN_NON_INDUSTRY	0.023*	−0.010	0.023**	−0.006	0.031***	−0.004
	(1.97)	(−1.36)	(2.57)	(−0.69)	(2.98)	(−0.25)
LEV	0.037	0.006	0.010	0.029	0.021	0.072*
	(0.70)	(0.45)	(0.41)	(1.42)	(0.67)	(1.90)
SIZE	−0.002	0.001	0.002	0.002	0.001	0.005
	(−0.42)	(0.54)	(0.68)	(0.63)	(0.20)	(1.29)
MTB	0.004	−0.002	0.004*	−0.001	0.006**	−0.000
	(1.66)	(−1.01)	(1.90)	(−0.23)	(2.57)	(−0.04)
ROA	0.012	−0.025	0.032	−0.080	0.019	−0.119*
	(0.10)	(−0.74)	(0.26)	(−1.65)	(0.15)	(−1.72)
GOV	−0.006	0.008	−0.003	0.010	−0.023	0.022
	(−0.51)	(0.51)	(−0.24)	(0.82)	(−1.61)	(1.57)
N	67	68	67	68	67	68
Adj. R^2	13.7%	13.6%	19.1%	17.3%	25.6%	13.9%

Note: This table reports regressions of two-, three-, and four-day CARs to the announcement of director appointments partitioned by the level of R&D investments. *, **, *** indicate significance at 10%, 5%, and 1%, respectively (two-tailed test). All variables are defined in Appendix A.

whole to have competence relevant to the industry in which the audited entity operates. We partition the sample into two subsamples based on whether the new audit committee director was appointed from 2014 onward and estimate a separate regression for each subsample to test whether introducing the EU Directive and EU Regulation in 2014 strengthened public awareness. If the European Union audit regulation facilitates the appointment of industry experts to audit committees, we expect to find positive market reactions to appointing joint experts after 2013.

Table 7 presents the results of our subsample tests. Using the same 2-, 3-, and 4-day CARs as in our main analyses, the coefficient on *FIN_INDUSTRY* is insignificant for the 2009–2013 sample period (i.e., Models 1, 3, and 5). Thus, we do not observe a significant market reaction to the appointment of directors with financial and industry expertise before 2014. However, our results consistently show a positive and significant market reaction to the announcement of audit committee directors with financial and industry expertise in the subsample of appointments in years from 2014 onward (i.e., Models 2, 4, and 6). Additionally, in all models, *FIN_NON_INDUSTRY* is not significantly different from *NON_EXPERT*. Thus, investors recognise the change in audit committee composition after the European Union introduced the audit reform and react positively when firms appoint new directors with financial and industry expertise to meet the reform requirements.[22]

5 | ADDITIONAL TESTS AND SENSITIVITY ANALYSES

5.1 | Improvements in audit committee expertise

Our main results indicate that shareholders most value directors with financial and industry expertise. Thus, we further investigate the notion that directors with additional expertise are essential for monitoring financial reporting. Following prior studies (Davidson et al., 2004; DeFond et al., 2005), we examine improvements in audit committee expertise. We expect positive market reactions, given the appointment of an audit committee director with financial and industry expertise, to depend on whether the outgoing audit committee member has the same expertise (i.e., financial and industry expertise) or is less qualified (i.e., financial-only expert or non-expert). We expect to observe a positive market reaction when an audit committee director with financial and industry expertise replaces a "financial-only" expert or non-expert because this increases the overall expertise of the audit committee. Therefore, we hand-collect additional data on whether the 29 joint experts in Panel B of Table 4 replace outgoing joint experts, financial-only experts, or non-experts.

In the untabulated tests, we find that appointments of joint experts that replace audit committee directors with less expertise (i.e., financial-only experts or non-experts) induce significantly positive

TABLE 7 Cross-sectional regressions of CARs and the effect of changes in European audit regulation

	CAR [0;1]		CAR [0;2]		CAR [0;3]	
	(1) Year < 2014	(2) Year ≥ 2014	(3) Year < 2014	(4) Year ≥ 2014	(5) Year < 2014	(6) Year ≥ 2014
Intercept	0.002	−0.009	−0.006	−0.030	−0.035	−0.068
	(0.14)	(−0.46)	(−0.29)	(−1.14)	(−1.08)	(−1.61)
FIN_INDUSTRY	−0.000	0.019***	0.006	0.029***	0.010	0.037***
	(−0.06)	(3.19)	(0.99)	(3.35)	(1.24)	(3.11)
FIN_NON_INDUSTRY	0.003	0.004	0.006	0.009	0.015	0.011
	(0.40)	(0.42)	(0.70)	(0.81)	(1.06)	(0.69)
LEV	−0.004	0.005	−0.022	0.016	−0.008	0.016
	(−0.10)	(−0.47)	(−1.14)	(0.94)	(−0.28)	(0.69)
SIZE	0.001	−0.000	0.003	0.000	0.004	0.004
	(0.29)	(−0.11)	(1.09)	(0.17)	(1.09)	(0.95)
MTB	−0.001	0.002	0.001	0.002	0.005	0.001
	(−0.45)	(0.91)	(0.34)	(1.13)	(1.48)	(0.53)
ROA	−0.033	0.043	−0.093**	0.047	−0.093	0.042
	(−0.77)	(1.17)	(−2.14)	(1.13)	(−1.48)	(0.65)
GOV	0.004	−0.002	−0.002	−0.000	−0.011	0.000
	(0.37)	(−0.27)	(−0.17)	(−0.02)	(−0.87)	(0.01)
N	76	59	76	59	76	59
Adj. R^2	1.3%	14.5%	5.8%	19.8%	5.6%	16.2%

Note: This table reports regressions of two-, three-, and four-day CARs to the announcement of director appointments partitioned by the year of introduction of the European audit reform. ** and *** indicate significance at 5% and 1%, respectively (two-tailed test). All variables are defined in Appendix A.

market reactions. On average, we find 2-day CARs [0;1] of 1.5% (t value = 2.34) regarding non-expert replacements and CARs [0;1] of 1.0% (t value = 1.90) if joint experts replace financial-only experts. Hence, the market values improvement in audit committee expertise. However, we observe insignificant 2-day CARs [0;1] of 0.5% if the appointment of audit committee directors with financial and industry expertise replace an outgoing director with the same expertise.

5.2 | Strength of industry expertise

Prior research suggests that the influence of industry expertise on boards may vary with the strength of each expert's industry expertise (e.g., Boivie et al., 2016; Oehmichen et al., 2017; Petri & Soublin, 2010). For example, audit committee industry experts' biographies suggest that industry experts gain industry knowledge by spending some years in the relevant industry. We use this observation to examine whether the market differentiates between the strength of audit committee members' industry expertise.

Following Cohen et al. (2014), we measure the strength of industry expertise by aggregating the number of years of employment of the audit committee industry experts in the relevant industry. We use the biographies of audit committee industry experts to collect the data and construct the variable on the individual director level. Sample statistics reveal that audit committee industry experts have worked, on average, for 27.8 years in the relevant industry.

Table 8 presents the results of the analysis of market reactions to the strength of industry expertise. *FIN_INDUSTRY_HIGH* equals one if the appointed director is a financial and industry expert and the strength of industry expertise (measured as the number of years of experience in a relevant industry) is greater than the sample median, and zero otherwise. *FIN_INDUSTRY_LOW* equals one if the industry expertise of the appointed financial and industry experts is equal to or below the sample median, and zero otherwise. Using CAR [0;1] as the dependent variable (Table 8, Model 1) yields a significantly positive market reaction to director announcements of financial experts with high industry expertise (coeff. = 1.2%; t value = 2.04), whereas the coefficient on *FIN_INDUSTRY_LOW* is insignificant. However, the regression results for CAR [0;2] and CAR [0;3] suggest that the strength of industry expertise does not reveal differences in market reactions to financial experts with industry expertise. Specifically, Models 2 and 3 show positive and significant market reactions to director announcements for financial experts with high and low industry expertise. Accordingly, our results suggest that the market values the appointment of financial experts with industry expertise, irrespective of the number of years of employment of audit committee industry experts in the relevant industry.[23]

TABLE 8 Cross-sectional regressions of CARs and the strength of industry expertise

	(1) CAR [0;1]	(2) CAR [0;2]	(3) CAR [0;3]
Intercept	−0.001	−0.012	−0.039*
	(−0.08)	(−0.72)	(−1.68)
FIN_INDUSTRY_HIGH	0.012**	0.016**	0.023**
	(2.04)	(2.20)	(2.14)
FIN_INDUSTRY_LOW	0.006	0.015**	0.015**
	(1.11)	(2.57)	(2.42)
FIN_NON_INDUSTRY	0.005	0.007	0.012
	(0.71)	(1.07)	(1.10)
LEV	0.003	0.002	0.012
	(0.16)	(0.11)	(0.66)
SIZE	−0.000	0.001	0.002
	(−0.12)	(0.38)	(0.99)
MTB	0.001	0.002	0.002
	(0.57)	(1.00)	(1.08)
ROA	−0.020	−0.053	−0.055
	(−0.62)	(−1.25)	(−1.29)
GOV	0.003	0.000	−0.003
	(0.36)	(0.03)	(−0.32)
N	135	135	135
Adj. R^2	2.5%	6.0%	5.6%

Note: This table reports regressions of two-, three-, and four-day CARs to the announcement of director appointments on the strength of industry expertise. * and ** indicate significance at 10% and 5%, respectively (two-tailed test). All variables are defined in Appendix A.

5.3 | Market reactions preceding the announcement date

Our event study approach is the standard methodology used by prior research to assess market reactions to director appointments (e.g., Davidson et al., 2004; DeFond et al., 2005; Rosenstein & Wyatt, 1990, 1997). The underlying assumption of this methodology is that the event is unanticipated by the market. Thus, to verify this assumption, we examine the possibility that the market anticipated announcements and impounded their effects on share prices before the announcement date. We follow Cloyd et al. (2003) and compute CARs over a period immediately preceding the announcement date (days −20 to −1).[24] In the untabulated results, we find that the average CAR of 0.04% is not significantly different from zero (t value = 0.06). Additionally, the correlations between CAR values over this period (i.e., CAR [−20; −1]) and CARs over the 2-day (i.e., CAR [0;1]), 3-day (i.e., CAR [0;2]), or 4-day (i.e., CAR [0;3]) event window are not statistically significant. The Spearman coefficients are −0.13, −0.05, and −0.09, respectively (p values > 0.1). We repeat this analysis with different periods preceding the announcement date and run them separately for each group (i.e., *FIN_INDUSTRY*, *FIN_NON_INDUSTRY*, and *NON_EXPERTS*). All tests reveal no significant market reactions during the period preceding the announcement date.[25] Thus, the possibility that the market anticipated announcements and share prices, hence exerting an effect prior to the announcement dates, is unlikely to influence the results.

5.4 | Alternative definitions of abnormal returns

We re-estimate the analyses with alternative abnormal returns definitions and event windows to test whether the results are robust to different event study approaches. First, we repeat the analysis using industry-size- or industry-adjusted returns instead of size-adjusted returns. Second, we compute abnormal returns using value-weighted market returns instead of equally weighted returns. Third, we use the size quartile and size decile equally-weighted portfolios to compute abnormal returns. Fourth, we expand the event period and include the day prior to the announcement date [−1;+2]. Across all tests, we find qualitatively similar but slightly weaker results relative to those reported in our main analyses (untabulated).

6 | CONCLUSION AND LIMITATIONS

This study explores market reactions to the voluntary appointment of new audit committee members with financial and industry expertise in Germany. The composition and functioning of audit committees have been under increased scrutiny by legislators in recent years. Practitioners and prior research emphasise the importance of the industry expertise of audit committee directors. Moreover, industry experts can augment the knowledge of financial experts and enhance the abilities of audit committees (e.g., Cohen et al., 2014; Wang et al., 2015; ICAEW, 2019).

We find significantly positive CARs around the appointment of financial experts with industry expertise but insignificant CARs around the appointment of financial experts without industry expertise. Consistent with the demand for industry expertise, which is higher for firms with greater monitoring or advising needs (e.g., Fahlenbrach et al., 2010; Linck et al., 2008; Raheja, 2005), we find the positive market reaction to the appointment of financial experts with industry expertise on audit committees to depend on whether the appointing firm is relatively more challenging for non-industry experts to monitor and advise. Overall, our findings suggest that investors demand a combination of financial and industry expertise and expect that it helps ensure high-quality financial reporting and improves corporate governance.

This study has the following limitations. First, whilst we document strong market reactions to newly appointed audit committee directors with financial and industry expertise, our results are based on a small number of announcements and should, thus, be interpreted with caution. We follow the standard event study methodology and restrict the hand-collected sample to announcements where the market can unambiguously identify the director's expertise. However, excluding confounding events and concurrent director appointments reduced the sample size considerably. As with every event study, an important underlying assumption is that the market can unambiguously identify the event. Whilst we acknowledge that the event study methodology restricts the sample size, our sample size is comparable to prior literature that examines the market reactions to audit committee director announcements (Davidson et al., 2004; Singhvi et al., 2013). Second, we cannot examine market reactions to industry-only experts (i.e., industry experts with no financial expertise) because of data limitations. Whilst we provide initial empirical evidence on market reactions to an important corporate governance issue of audit committee composition, exploring market reactions to industry-only experts could be an interesting avenue for future research. Third, on a more general level, any interpretation of our findings requires consideration of the German institutional context. However, some German institutional characteristics could be interesting from an international perspective and add a new viewpoint to the previous literature. As the largest economy in the EU, we are confident that the findings of our German study have relevance for other countries—at least for countries with an equivalent level of economic development. However, depending on country-specific aspects, the results and their interpretation may vary. Therefore, future research could examine the effect on less developed economies.

Notwithstanding these limitations, our results provide important insights beyond the extant audit committee composition and director expertise literature (e.g., Ashraf et al., 2020; Cohen et al., 2014; DeFond et al., 2005; Krishnan et al., 2011). Our findings should be of interest to corporate boards, regulators, auditors, and academic researchers. Given the potentially far-reaching effects of European legislators' efforts to increase expertise on audit committees, it is important to consider the market implications of such a policy. We present the first empirical evidence of the market reaction to new

appointments of audit committee directors with financial and industry expertise. Whilst appointing financial experts to audit committees is important for the audit committee to monitor financial reporting quality, the market values industry-specific insights and familiarity with firms' operations of industry experts.

CONFLICT OF INTEREST DISCLOSURE

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

ACKNOWLEDGEMENTS

Open Access funding enabled and organized by Projekt DEAL.

ETHICS APPROVAL STATEMENT

Not applicable for the research. The manuscript does not contain human studies or experiments using animals.

AUTHOR CONTRIBUTION

All three authors contributed to the manuscript equally at all stages.

PEER REVIEW

The peer review history for this article is available at https://publons.com/publon/10.1111/ijau.12290.

DATA AVAILABILITY STATEMENT

Data are available from the sources cited in the text.

ORCID

Martin Thomsen https://orcid.org/0000-0001-6984-0962

ENDNOTES

[1] We investigate the combination of financial and industry expertise on audit committees. We cannot examine market reactions to "industry-only" experts (i.e., industry experts with no financial expertise) because of limited data on their appointments. Although our sample selection process includes all new director appointments to German audit committees during the 2009–2018 sample period, our sample contains only six announcements of "industry-only" experts, suggesting that such audit committee members are generally uncommon.

[2] Recent empirical evidence on German corporate governance can be largely organised into studies on board composition, such as worker representation on corporate boards (e.g., Fauver & Fuerst, 2006; Gleason et al., 2021; Lin et al., 2018), audit quality and non-audit services (e.g., Hohenfels & Quick, 2020; Meuwissen & Quick, 2019; Ratzinger-Sakel, 2013), and audit committee effectiveness (e.g., Albersmann & Hohenfels, 2017; Baumann & Ratzinger-Sakel, 2020).

[3] Notably, this voluntary approach differs from audit committee regulation in the United States. The SEC Exchange Act Rule 10A-3 requires the establishment of audit committees for U.S. listed firms.

[4] Noncompliance with the DCGK is typically perceived as an adverse signal to stakeholders (Köhler, 2005).

[5] For example, the European regulation has extended their responsibilities in interacting with the auditor, overseeing the statutory audit, and permitting non-audit services (European Union, 2014a, 2014b).

[6] The European audit reform and German law rely on collective industry experience of audit committee members. Thus, audit committee members are required to collectively possess sufficient industry knowledge. However, the regulation does not contain legal definitions of individual industry expertise and does not clarify the required degree of sufficient industry knowledge possessed by the audit committee.

[7] Admission to the Prime Standard of the Frankfurt Stock Exchange requires quarterly reporting, ad hoc disclosure in English, application of international accounting standards (IFRS/IAS or US-GAAP), publication of a financial calendar, and staging of at least one analyst conference per year.

[8] We eliminate 15 firms that are included in the selection indices but domiciled in foreign jurisdictions. Foreign firms are not required to comply with German corporate governance rules and are, therefore, not comparable with domestic firms (Baumann & Ratzinger-Sakel, 2020).

[9] The identification and collection of all newly appointed directors during our 10-year sample period generates a comprehensive sample of new appointments that reduces the influence of survival bias, as in DeFond et al. (2005).

[10] We find 646 audit committee appointments during the 2009–2018 sample period, including 430 new director appointments to audit committees and 216 current board members joining audit committees.

[11] The classification procedure of newly appointed audit committee members is based on SIC code comparisons. For example, consider Ms. Krisja Vermeylen, serving on the audit committee of MorphoSys AG since 2017. MorphoSys' SIC code is 2834 (Pharmaceutical Preparations). Prior to her appointment, Ms. Vermeylen was in several senior positions at Novo Nordisk A/S, which has the same SIC code of 2834 (Pharmaceutical Preparations). Following the industry expertise definition, Ms. Vermeylen has been appointed to an audit committee of a firm that shares the same two-digit SIC code (i.e., 28) with her previous employment.

[12] We present two examples of audit committee members with financial expertise and no industry expertise to clarify the classification method used in this study. Consider the following two examples of Carsten Knobel, CEO at Henkel AG & Co. KGaA, and Patricia Geibel-Conrad, a self-employed auditor and tax advisor. Mr. Knobel served as Henkel's CFO with several additional former positions in Henkel's finance and controlling departments. Since 2018, he serves on Deutsche Lufthansa's audit committee but has not worked in the aviation industry. Consequently, we consider him to have financial expertise but no industry expertise in Deutsche Lufthansa's business. Similarly, Ms. Geibel-Conrad worked in the audit and assurance business line of PricewaterhouseCoopers. Since 2015, Ms. Geibel-Conrad serves on the audit committee of Hochtief AG, among the largest general construction companies. Given that she was never employed by any construction company, we consider Ms. Geibel-Conrad to have financial expertise but no industry expertise.

[13] The group of non-experts includes audit committee members with other director characteristics (e.g., legal, technology, and politics background) who do not meet the definition of a financial expert.

[14] We use alternative event windows in subsequent tests to test the robustness of our results. Our results are robust to including the day prior to the announcement date.

[15] In untabulated robustness tests, results are unchanged when we use the sum of long-term and current debt scaled by total assets instead of total debt to total assets (*LEV*) to control for leverage and the natural logarithm of total assets instead of the natural logarithm of market capitalization (*SIZE*) to control for size.

[16] In untabulated tests, the inferences are unchanged when we control for the past performance of each firm (measured as prior-period return on assets).

[17] DeFond et al. (2005) include measures for board and audit committee independence and the governance score (G-index) of Gompers et al. (2003). Measures of independence are not applicable in our context because German corporate governance law requires all board and audit committee members to be outside directors. The G-index is unavailable for our sample period. However, in untabulated robustness tests, we extend *GOV* by including the number of board and audit committee meetings to control for meeting frequency. Across all tests, we find qualitatively similar but slightly weaker results relative to those reported in our main analyses.

[18] Sample statistics on hand-collected annual meeting dates reveal that the average number of days between announcements of newly appointed audit committee directors and annual meeting dates is 92.8 (Median: 76 days). Therefore, it is unlikely annual meeting dates and news related to annual meetings influence the results.

[19] Given the few observations of other director characteristics and, hence, the lack of statistical power in tests of such characteristics, we cannot further differentiate between non-expert characteristics.

[20] Based on prior research, some industries (e.g., pharma and biotechnology, energy, software, and services) have a higher demand for specialised directors and are characterised by a relatively high R&D intensity (Faleye et al., 2018; Roe, 2017). We conclude that firms with a high demand for industry expertise are more challenging for non-industry experts to monitor and advise.

[21] In untabulated tests, we repeat the analyses using growth opportunities, intangible assets, and stock return volatility to proxy for the demand for industry expertise. We expect the market reaction of appointing a financial and industry expert to audit committees to increase in firms with relatively higher growth opportunities, intangible assets, and stock volatility. Consistent with Table 6, the market reacts positively to the appointment of financial and industry experts when firms are more challenging for non-industry experts to monitor and advise in all tests.

[22] In an additional test, we consider market reactions to audit committee director announcements for firms with financial reporting issues. The German financial reporting enforcement system follows a two-tier structure: the Financial Reporting Enforcement Panel and the Federal Financial Supervisory Authority. These stages examine financial reporting (e.g., compliance with IFRS standards) of all publicly listed German firms. Regarding error findings, respective firms are obliged to publish an error announcement. To investigate whether director characteristics are more valued for firms with prior error announcements, we hand-collect all error announcements from 2006 to 2017, finding 253 error announcements, of which only 14 related to the sample firms (i.e., firms with audit committee director appointments). Given the few observations, we cannot conclude unequivocally whether the market values director characteristics for firms with prior error announcements.

[23] Alternatively, we use the number of different companies in the relevant industry in which each financial and industry expert is or was employed. Sample statistics reveal that financial experts with industry expertise have been affiliated with, on average, 2.3 companies in the relevant industry. Using the number of companies instead of the number of years reveals results that are qualitatively identical to those in Table 8.

[24] Moreover, we compute CARs over alternative periods immediately preceding the announcement date, with days −20 to −2 and days −20 to −3. Alternative periods reveal similar results.

[25] We additionally compute CARs over a period immediately following the announcement date (days +4 to +20). Untabulated results reveal that the average CAR over this period (i.e., CAR [4;20]) is about −0.01% and is not significantly different from zero (*t* value = −0.01).

REFERENCES

Abbott, L. J., Park, Y., & Parker, S. (2000). The effects of audit committee activity and independence on corporate fraud. *Managerial Finance*, *26*, 55–68. https://doi.org/10.1108/03074350010766990

Adams, R. B. (2003). *What do boards do? Evidence from board committee and director compensation data*. Working Paper. University of Oxford. https://doi.org/10.2139/ssrn.397401

Albersmann, B. T., & Hohenfels, D. (2017). Audit committees and earnings management–Evidence from the German two-tier board system. *Schmalenbach Business Review*, *18*, 147–178. https://doi.org/10.1007/s41464-017-0028-9

Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2004). Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics*, *37*, 315–342. https://doi.org/10.1016/j.jacceco.2004.01.004

Archambeault, D. S., DeZoort, F. T., & Hermanson, D. R. (2008). Audit committee incentive compensation and accounting restatements. *Contemporary Accounting Research*, *25*, 965–992. https://doi.org/10.1506/car.25.4.1

Ashraf, M., Michas, P. N., & Russomanno, D. (2020). The impact of audit committee information technology expertise on the reliability and timeliness of financial reporting. *The Accounting Review*, 95, 23–56. https://doi.org/10.2308/accr-52622

Badolato, P. G., Donelson, D. C., & Ege, M. (2014). Audit committee financial expertise and earnings management: The role of status. *Journal of Accounting and Economics*, *58*, 208–230. https://doi.org/10.1016/j.jacceco.2014.08.006

Balsam, S., Krishnan, J., & Yang, J. S. (2003). Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory*, *22*, 71–97. https://doi.org/10.2308/aud.2003.22.2.71

Baumann, M. F., & Ratzinger-Sakel, N. V. S. (2020). The time dependence of audit firm alumni effects: Evidence from audit committees. *International Journal of Auditing*, *24*, 110–130. https://doi.org/10.1111/ijau.12182

BDO. (2017). *Industry issue: IFRS industry issues*. BDO. Retrieved from https://www.bdo.co.uk/en-gb/insights/industries/technology,-media-and-life-sciences/ifrs-industry-issues

Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, *71*, 443–465.

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons*, *14*, 441–454. https://doi.org/10.2308/acch.2000.14.4.441

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2009). The audit committee oversight process. *Contemporary Accounting Research*, *26*, 65–122. https://doi.org/10.1506/car.26.1.3

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2010). *Fraudulent financial reporting: 1998–2007: An analysis of U.S. public companies*. COSO.

Bédard, J., Chtourou, S. M., & Courteau, L. (2004). The effect of audit committee expertise, independence, and activity on aggressive earnings management. *Auditing: A Journal of Practice & Theory*, *23*, 13–35. https://doi.org/10.2308/aud.2004.23.2.13

Bédard, J., & Gendron, Y. (2010). Strengthening the financial reporting system: Can audit committees deliver? *International Journal of Auditing*, *14*, 174–210. https://doi.org/10.1111/j.1099-1123.2009.00413.x

BlackRock. (2020). *BlackRock investment stewardship*. BlackRock, Inc. Retrieved from https://www.blackrock.com/corporate/literature/fact-sheet/blk-responsible-investment-guidelines-us.pdf

Bloomberg. (2020). *Wirecard scandal puts German boards on the spot*. Editor & Publisher Co Inc. Retrieved from https://www.bloomberg.com/opinion/articles/2020-06-30/wirecard-scandal-puts-german-boards-on-the-spot

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. (2016). *Are boards designed to fail? The implausibility of effective board monitoring* (Vol. 10) (pp. 1–89). The Academy of Management Annals. https://doi.org/10.1080/19416520.2016.1120957

Boyd, B. (1990). Corporate linkages and organizational environment: A test of the resource dependence model. *Strategic Management Journal*, *11*, 419–430. https://doi.org/10.1002/smj.4250110602

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, *14*, 3–31. https://doi.org/10.1016/0304-405X(85)90042-X

Bruynseels, L., & Cardinaels, E. (2014). The audit committee: Management watchdog or personal friend of the CEO? *The Accounting Review*, *89*, 113–145. https://doi.org/10.2308/accr-50601

Carcello, J. V., Hollingsworth, C. W., Klein, A., & Neal, T. L. (2006). *Audit committee financial expertise, competing corporate governance mechanisms, and earnings management*. Working Paper. University of Tennessee. https://doi.org/10.2139/ssrn.887512

Carcello, J. V., & Neal, T. L. (2000). Audit committee composition and auditor reporting. *The Accounting Review*, *75*, 453–467. https://doi.org/10.2308/accr.2000.75.4.453

Cloyd, C. B., Mills, L. F., & Weaver, C. D. (2003). Firm valuation effects of the expatriation of U.S. corporations to tax-haven countries. *Journal of the American Taxation Association*, *25*, 87–109. https://doi.org/10.2308/jata.2003.25.s-1.87

Cohen, J. R., Hoitash, U., Krishnamoorthy, G., & Wright, A. M. (2014). The effect of audit committee industry expertise on monitoring the financial reporting process. *The Accounting Review*, *89*, 243–273. https://doi.org/10.2308/accr-50585

Cohen, J. R., Krishnamoorthy, G., & Wright, A. M. (2007). The impact of roles of the board on auditors' risk assessments and program planning decisions. *Auditing: A Journal of Practice & Theory*, *26*, 91–112. https://doi.org/10.2308/aud.2007.26.1.91

Cohen, J. R., Krishnamoorthy, G., & Wright, A. M. (2008). Form versus substance: The implications for auditing practice and research of alternative perspectives on corporate governance. *Auditing: A Journal of Practice & Theory*, *27*, 181–198. https://doi.org/10.2308/aud.2008.27.2.181

Davidson, W. N., Xie, B., & Xu, W. (2004). Market reaction to voluntary announcements of audit committee appointments: The effect of financial expertise. *Journal of Accounting and Public Policy*, *23*, 279–293. https://doi.org/10.1016/j.jaccpubpol.2004.06.001

DeFond, M. L., Hann, R. N., & Hu, X. (2005). Does the market value financial expertise on audit committees of board of directors? *Journal of Accounting Research*, *43*, 153–193. https://doi.org/10.1111/j.1475-679x.2005.00166.x

Deloitte. (2016). *IFRS industry insights: Aviation sector*. Deloitte Touche Tohmatsu Limited. Retrieved from https://www.iasplus.com/en-ca/publications/ifrs-in-focus/2016/industry-insights/ifrs-industry-insights-aviation-sector/at_download/file/J4144%20IFRS%20industry%20insights%20rt2.pdf

Deutsche Telekom. (2015). *Prof. Michael Kaschke proposed to be elected to the Deutsche Telekom supervisory board*. Deutsche Telekom AG. Retrieved from https://www.telekom.com/en/media/media-information/archive/prof-michael-kaschke-proposed-to-be-elected-to-the-deutsche-telekom-supervisory-board-361994

DeZoort, F. T. (1998). An analysis of experience effects on audit committee members' oversight judgments. *Accounting, Organizations and Society*, *23*, 1–21. https://doi.org/10.1016/S0361-3682(97)00029-9

Dhaliwal, D. S., Naiker, V., & Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. *Contemporary Accounting Research*, *27*, 787–827. https://doi.org/10.1111/j.1911-3846.2010.01027.x

Dichev, I. D., Graham, J. R., Harvey, C. R., & Rajgopal, S. (2013). Earnings quality: Evidence from the field. *Journal of Accounting and Economics*, *56*, 1–33. https://doi.org/10.1016/j.jacceco.2013.05.004

Dyckman, T., Philbrick, D., & Stephan, J. (1984). A comparison of event study methodologies using daily stock returns: A simulation approach. *Journal of Accounting Research*, *22*, 1–30. https://doi.org/10.2307/2490855

Dye, R. A. (2002). Classifications manipulation and Nash accounting standards. *Journal of Accounting Research*, *40*, 1125–1162. https://doi.org/10.1111/1475-679X.00084

Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, *48*, 35–54. https://doi.org/10.1016/S0304-405X(98)00003-8

European Union. (2014a). Directive 2014/56/EU of the European Parliament and of the council of 16 April 2014 amending directive 2006/43/EC on statutory audits of annual accounts and consolidated accounts. *Official Journal of the European Union*, *2014*, L 158/196–L 158/226.

European Union. (2014b). Regulation (EU) no 537/2014 of the European Parliament and of the council of 16 April 2014 on specific requirements regarding statutory audit of public-interest entities and repealing commission decision 2005/909/EC. *Official Journal of the European Union*, *2014*, L 158/77–L 158/112.

EY. (2019). A view on the current and future role of audit committees – Impact for Germany, Switzerland and Austria: European Corporate Governance 2019 analysis. Retrieved from https://assets.ey.com/content/dam/ey-sites/ey-com/de_de/news/2019/09/ey-european-corporate-governance.pdf?download

Fahlenbrach, R., Low, A., & Stulz, R. M. (2010). Why do firms appoint CEOs as outside directors? *Journal of Financial Economics*, *97*, 12–32. https://doi.org/10.1016/j.jfineco.2010.01.003

Faleye, O., Hoitash, R., & Hoitash, U. (2018). Industry expertise on corporate boards. *Review of Quantitative Finance and Accounting*, *50*, 441–479. https://doi.org/10.1007/s11156-017-0635-z

Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *The Journal of Law and Economics*, *26*, 327–350. https://doi.org/10.1086/467038

Fauver, L., & Fuerst, M. E. (2006). Does good corporate governance include employee representation? Evidence from German corporate boards. *Journal of Financial Economics*, *82*, 673–710. https://doi.org/10.1016/j.jfineco.2005.10.005

Fich, E. M. (2005). Are some outside directors better than others? Evidence from director appointments by fortune 1000 firms. *The Journal of Business*, *78*, 1943–1972. https://doi.org/10.1086/431448

Financial Times. (2018). *Why boards need directors with international experience*. Nikkei. Retrieved from https://www.ft.com/content/5577d56b-b488-32c8-85d2-9bbe665ce77a#comments-anchor

Foster, G. (1980). Accounting policy decisions and capital market research. *Journal of Accounting and Economics*, *2*, 29–62. https://doi.org/10.1016/0165-4101(80)90014-2

Gleason, C. A., Kieback, S., Thomsen, M., & Watrin, C. (2021). Monitoring or payroll maximization? What happens when workers enter the boardroom? *Review of Accounting Studies*, *26*, 1046–1087. https://doi.org/10.2139/ssrn.3322700

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The Quarterly Journal of Economics*, *118*, 107–156. https://doi.org/10.1162/00335530360535162

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management Studies*, *37*, 235–256. https://doi.org/10.1111/1467-6486.00179

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *The Academy of Management Review*, *28*, 383–396. https://doi.org/10.5465/amr.2003.10196729

Hohenfels, D., & Quick, R. (2020). Non-audit services and audit quality: Evidence from Germany. *Review of Managerial Science*, *14*, 959–1007. https://doi.org/10.1007/s11846-018-0306-z

Hoitash, U., Hoitash, R., & Bedard, J. C. (2009). Corporate governance and internal control over financial reporting: A comparison of regulatory regimes. *The Accounting Review*, *84*, 839–867. https://doi.org/10.2308/accr.2009.84.3.839

ICAEW. (2019). *Facing change: audit committees in Europe*. ICAEW. Retrieved from https://www.icaew.com/-/media/corporate/files/groups-and-networks/local-groups-and-societies/international-groups/europe/audit-committees-in-europe-facing-change.ashx

IFAC. (2019). *5 key factors to enhance audit committee effectiveness*. IFAC. Retrieved from https://www.ifac.org/knowledge-gateway/supporting-international-standards/discussion/5-key-factors-enhance-audit-committee-effectiveness

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, *48*, 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*, 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kalbers, L. P., & Fogarty, T. J. (1993). Audit committee effectiveness: An empirical investigation of the contribution of power. *Auditing: A Journal of Practice & Theory*, *12*, 24–49.

Kalbers, L. P., & Fogarty, T. J. (1998). Organizational and economic explanations of audit committee oversight. *Journal of Managerial Issues*, *10*, 129–150.

Karamanou, I., & Vafeas, N. (2005). The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research*, *43*, 453–486. https://doi.org/10.1111/j.1475-679X.2005.00177.x

Klein, A. (1998). Firm performance and board committee structure. *The Journal of Law and Economics*, *41*, 275–303. https://doi.org/10.1086/467391

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*, 375–400. https://doi.org/10.1016/S0165-4101(02)00059-9

Köhler, A. G. (2005). Audit committees in Germany–Theoretical reasoning and empirical evidence. *Schmalenbach Business Review*, *57*, 229–252. https://doi.org/10.1007/BF03396715

KPMG. (2014). *Impacts on the construction industry of the new revenue standard*. KPMG. Retrieved from https://home.kpmg/content/dam/kpmg/pdf/2014/10/First-Impressions-O-201409-Impacts-on-the-construction-industry-of-the-new-revenue-standard.pdf

Krishnan, G. V. (2003). Does big 6 auditor industry expertise constrain earnings management? *Accounting Horizons*, *17*, 1–16. https://doi.org/10.2308/acch.2003.17.s-1.1

Krishnan, G. V., & Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors accounting expertise and accounting conservatism. *Contemporary Accounting Research*, *25*, 827–857. https://doi.org/10.1506/car.25.3.7

Krishnan, J. (2005). Audit committee quality and internal control: An empirical analysis. *The Accounting Review*, *80*, 649–675. https://doi.org/10.2308/accr.2005.80.2.649

Krishnan, J., & Lee, J. E. (2009). Audit committee financial expertise, litigation risk, and corporate governance. *Auditing: A Journal of Practice & Theory*, *28*, 241–261. https://doi.org/10.2308/aud.2009.28.1.241

Krishnan, J., Wen, Y., & Zhao, W. (2011). Legal expertise on corporate audit committees and financial reporting quality. *The Accounting Review*, *86*, 2099–2130. https://doi.org/10.2308/accr-10135

Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994). Contrarian investment, extrapolation, and risk. *The Journal of Finance*, *49*, 1541–1578. https://doi.org/10.1111/j.1540-6261.1994.tb04772.x

Laux, C., & Laux, V. (2009). Board committees, CEO compensation, and earnings management. *The Accounting Review*, *84*, 869–891. https://doi.org/10.2308/accr.2009.84.3.869

Lin, C., Schmid, T., & Xuan, Y. (2018). Employee representation and financial leverage. *Journal of Financial Economics*, *127*, 303–324. https://doi.org/10.1016/j.jfineco.2017.12.003

Linck, J. S., Netter, J. M., & Yang, T. (2008). The determinants of board structure. *Journal of Financial Economics*, *87*, 308–328. https://doi.org/10.1016/j.jfineco.2007.03.004

McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, *27*, 595–612. https://doi.org/10.1016/0304-405X(90)90069-C

Meuwissen, R., & Quick, R. (2019). The effects of non-audit services on auditor independence: An experimental investigation of supervisory board members perceptions. *Journal of International Accounting, Auditing and Taxation*, *36*, 1–14. https://doi.org/10.1016/j.intaccaudtax.2019.05.004

Norges Bank Investment Management. (2020). *Global voting guidelines*. Norges Bank Investment Management. Retrieved from https://www.nbim.no/globalassets/documents/governance/policies/global-voting-guidelines-2020.pdf

Oehmichen, J., Schrapp, S., & Wolff, M. (2017). Who needs experts most? Board industry expertise and strategic change–A contingency perspective. *Strategic Management Journal*, *38*, 645–656. https://doi.org/10.1002/smj.2513

Owhoso, V. E., Messier, W. F., & Lynch, J. G. (2002). Error detection by industry-specialized teams during sequential audit review. *Journal of Accounting Research*, *40*, 883–900. https://doi.org/10.1111/1475-679X.00075

Peterson, P. P. (1989). Event studies: A review of issues and methodology. *Quarterly Journal of Business and Economics*, *28*, 36–66.

Petri, T., & Soublin, R. (2010). Turbulent times require a greater focus on board effectiveness. *Strategic HR Review*, *9*, 20–27. https://doi.org/10.1108/14754391011050379

Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row.

PwC. (2016). *In the spotlight: An industry focus on the impact of IFRS 16–Airlines*. PwC. Retrieved from https://www.pwc.de/de/newsletter/kapitalmarkt/in-the-spotlight-airlines.pdf

PwC. (2017). *New revenue guidance: implementation in the communications industry*. PwC. Retrieved from https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-15/in-depth-ifrs-15-industry-supplement-communications.pdf

PwC. (2019). *International Financial Reporting Standards (IFRS): Issues and solutions for the pharmaceuticals and life sciences industries*. PwC. Retrieved from https://www.pwc.com/gx/en/pharma-life-sciences/assets/pharma-solutions-ifrs-doc.pdf

Raheja, C. G. (2005). Determinants of board size and composition: A theory of corporate boards. *The Journal of Financial and Quantitative Analysis*, *40*, 283–306. https://doi.org/10.1017/S0022109000002313

Ratzinger-Sakel, N. V. S. (2013). Auditor fees and auditor independence–Evidence from going concern reporting decisions in Germany. *Auditing: A Journal of Practice & Theory*, *32*, 129–168. https://doi.org/10.2308/ajpt-50532

Reichelt, K. J., & Wang, D. (2010). National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research*, *48*, 647–686. https://doi.org/10.1111/j.1475-679X.2009.00363.x

Roe, J. (2017). *Balancing board experience and expertise*. Retrieved from https://corpgov.law.harvard.edu/2017/07/28/balancing-board-experience-and-expertise/

Romanus, R. N., Maher, J. J., & Fleming, D. M. (2008). Auditor industry specialization, auditor changes, and accounting restatements. *Accounting Horizons*, *22*, 389–413. https://doi.org/10.2308/acch.2008.22.4.389

Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics*, *26*, 175–191. https://doi.org/10.1016/0304-405X(90)90002-H

Rosenstein, S., & Wyatt, J. G. (1997). Inside directors, board effectiveness, and shareholder wealth. *Journal of Financial Economics*, *44*, 229–250. https://doi.org/10.1016/S0304-405X(97)00004-4

Samagaio, A., Crespo, N. F., & Rodrigues, R. (2018). Management control systems in high-tech start-ups: An empirical investigation. *Journal of Business Research*, *89*, 351–360. https://doi.org/10.1016/j.jbusres.2017.12.028

Singhvi, M., Rama, D. V., & Barua, A. (2013). Market reactions to departures of audit committee directors. *Accounting Horizons*, *27*, 113–128. https://doi.org/10.2308/acch-50284

Stanley, J. D., & DeZoort, F. T. (2007). Audit firm tenure and financial restatements: An analysis of industry specialization and fee effects. *Journal of Accounting and Public Policy*, *26*, 131–159. https://doi.org/10.1016/j.jaccpubpol.2007.02.003

The Wall Street Journal. (2020). *Corporate boards suffer from an 'experience gap' as the coronavirus upends business*. Dow Jones & Company. Retrieved from https://www.wsj.com/articles/corporate-boards-suffer-experience-gap-as-coronavirus-upends-business-11584716400

Vafeas, N. (2005). Audit committees, boards, and the quality of reported earnings. *Contemporary Accounting Research*, *22*, 1093–1122. https://doi.org/10.1506/1QYN-2RFQ-FKYX-XP84

Vanguard. (2020). *Vanguard funds. Summary of the proxy voting policy for U.S. portfolio companies*. Vanguard. Retrieved from https://about.vanguard.com/investment-stewardship/portfolio-company-resources/2020_proxy_voting_summary.pdf

Wang, C., Xie, F., & Zhu, M. (2015). Industry expertise of independent directors and board monitoring. *Journal of Financial and Quantitative Analysis*, *50*, 929–962. https://doi.org/10.1017/S0022109015000459

Xie, B., Davidson, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: The role of the board and the audit committee. *Journal of Corporate Finance*, *9*, 295–316. https://doi.org/10.1016/S0929-1199(02)00006-8

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, *40*, 185–211. https://doi.org/10.1016/0304-405X(95)00844-5

Zhang, Y., Zhou, J., & Zhou, N. (2007). Audit committee quality, auditor independence, and internal control weaknesses. *Journal of Accounting and Public Policy*, *26*, 300–327. https://doi.org/10.1016/j.jaccpubpol.2007.03.001

AUTHOR BIOGRAPHIES

Sascha Kieback is a PhD student at the Institute of Accounting and Taxation at the University of Muenster in Germany. His research focusses on corporate governance, especially the usefulness of audit committees.

Martin Thomsen is an assistant professor at the University of Muenster in Germany. His research interests include corporate governance and capital market effects with a focus on decision-making in audit committees.

Christoph Watrin is a professor at the University of Muenster in Germany and Director of the Institute of Accounting and Taxation. His research focusses on business taxation and corporate governance.

How to cite this article: Kieback, S., Thomsen, M., & Watrin, C. (2022). Market reactions to the appointment of audit committee directors with financial and industry expertise in Germany. *International Journal of Auditing*, *26*(4), 446–466. https://doi.org/10.1111/ijau.12290

APPENDIX A: VARIABLE DEFINITIONS

Variable	Definition (source)
FIN_EXPERT	Indicator variable equal to one if the appointed director is a financial expert, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies and firm websites).
NON_EXPERT	Indicator variable equal to one if the appointed director is a non-expert who does not meet the definition of a financial expert, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies, and firm websites).
FIN_INDUSTRY	Indicator variable equal to one if the appointed director is a financial and industry expert, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies, and firm websites).
FIN_NON_INDUSTRY	Indicator variable equal to one if the appointed director is a financial expert but not an industry expert, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies, and firm websites).
FIN_INDUSTRY_HIGH	Indicator variable equal to one if the appointed director is a financial and industry expert, and the strength of industry expertise (measured as the number of years of experience in a relevant industry) is greater than the sample median, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies, and firm websites).
FIN_INDUSTRY_LOW	Indicator variable equal to one if the appointed director is a financial and industry expert, and the strength of industry expertise (measured as the number of years of experience in a relevant industry) is equal or below the sample median, and zero otherwise (hand-collection of director profile information from press release announcements, directors' biographies, and firm websites).
LEV	Ratio of total debt (LT) to total assets (AT) [Compustat Global].
SIZE	Natural logarithm of market capitalisation (PRCCD * CSHOC) [Compustat Global].
MTB	Ratio of market value of equity (PRCCD * CSHOC) to book value of equity (CEQ) [Compustat Global].
ROA	Ratio of net income (NICON) to total assets (AT) [Compustat Global].
GOV	Indicator variable equal to one if the sum of the following four dichotomous corporate governance variables (i.e., *BOARD_SIZE*, *AC_SIZE*, *INST_OWN*, and *N_COM*) is greater than the sample median, and zero otherwise.
BOARD_SIZE	Indicator variable equal to one if the appointing firms board size is less than the sample median, and zero otherwise (hand-collection from annual reports).
AC_SIZE	Indicator variable equal to one if the relation between the appointing firms audit committee size and its size of the full board is greater than the sample median, and zero otherwise (hand-collection from annual reports).
INST_OWN	Indicator variable equal to one if the appointing firms' percentage of institutional ownership is greater than the sample median, and zero otherwise (Thomson Reuters and hand-collection from annual reports).
N_COM	Indicator variable equal to one if the appointing firms' number of committees is greater than the sample median, and zero otherwise (hand-collection from annual reports).