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Do board meetings matter in the insurance industry?

Abstract

This study examines the link between formally scheduled board meetings, profitability, and solvency in the United Kingdom's (UK) property-casualty insurance industry. A panel data design using 83 UK insurers writing property casualty insurance for the period 2004/5 to 2013/4 is employed. The study finds that increasing the number of board meetings scheduled each year enhances overall attendance rates. However, outside directors with financial experience have relatively better attendance rates than their counterparts with less technical expertise. The study also finds that overall board meeting attendance and directorate turn-out at strategy and remuneration meetings improve profitability but not solvency. In addition, board meeting attendance by outside directors falls when prior period profitability is sound, suggesting a 'complacency-effect' among non-executives. The lack of significance between solvency and both total and outside director attendance also hints at a 'dependency-effect', whereby boards rely on professional managers (actuarial technocrats) to optimize financial strength and condition. Our results have implications for insurers and regulators in deciding on the suitability of candidates applying for board-level positions.

Keywords: Board meetings, profitability, solvency, insurance, UK.

1. Introduction

This study examines the link between formally scheduled board meetings, profitability, and solvency in the United Kingdom's (UK) property casualty (general, non-life) insurance industry. In this industry, board level directors have collective statutory and fiduciary responsibilities for managing and making decisions on a plurality of technically complex lines of business, such as catastrophe and legal liability risks, that have uncertain risk profiles compared with other industries as well as the more actuarially predictable life insurance industry. Furthermore, the unpredictability of property casualty business compared with the life insurance sector ostensibly necessitates potentially robust board-level regulatory and risk management strategies to minimize unexpectedly severe losses (e.g., from catastrophic events) and adverse reputational impacts (e.g., arising from heightened regulatory compliance and third party litigation risks) (Froot, 2001). This situation imposes a high 'technical bar' and regulatory expectation on the strategic effectiveness of the information processing, intra group communication, and calculative risk assessment capabilities of board members in the property casualty insurance industry.

It also reinforces the importance of directors of insurance firms physically attending board meetings in order to effectively perform their strategic duties and optimize corporate financial outcomes for the benefit of stakeholders[1]. In-person boardroom attendance is further considered by Chou et al. (2013), Vafeas & Vlittis (2023), and others, to facilitate better information exchange and shared learning. The frequency of, and attendance at, board meetings are also observable features of boardroom activity and a proxy for directors' commitment to contracted boardroom duties (Ji et al., 2020). The importance of formal board meetings and the need for regular attendance has also been collectively stressed in a range of prescriptive and

[1] Board meetings using online media were rare during our period of analysis (2004/5 to 2013/14). As a result, recorded turn outs at board meetings relate to the physical rather than virtual presence of directors.

advisory documents. In the UK, these include the Companies Act (2006, sections 171-177), corporate governance codes, such as the Higgs (2003) and Smith (2003) reports, corporate charters and articles of association, and policy statements pertaining to financial firms, such as the UK Financial Services Authority's (FSA) 2004 prudential regulations. However, as Adams et al. (2021, p. 1122) report ". . . meetings need not change corporate outcomes if, for example, additional meetings are simply the result of increased compliance responsibilities."

Against this backdrop, we examine two important and inter-related research questions regarding the attendance of insurance directors at board meetings: (1) What are the firm-specific determinants of directors' attendance at board meetings in the UK property-casualty insurance industry? and (2) Do board meeting attendance rates affect key measures of financial performance, such as profitability and solvency, in the UK property-casualty insurance industry?

This study fits within the genre of corporate governance research as board meetings can be effective venues for applying directors' commercial expertise to strategic matters, thereby improving financial performance. Therefore, board meeting attendance can be viewed as a proxy for the 'quality' of strategic leadership and a key predictor of the corporate governance performance (Solomon, 2014). However, scholars (e.g., Vafeas, 1999) have criticized the often low rates of directors' attendance at board meetings, as low attendance potentially detracts from the efficacy of corporate governance and effective strategic leadership.

A key motivation for our study is that relatively little is known about the factors that underpin the functioning and performance effects of board meetings, particularly in the institutionally important, technically complex, and heavily regulated financial services sector (Adams & Ferreira, 2012). Moreover, compared with their general industry counterparts, financial firms, such as insurers, have wider and enhanced corporate governance responsibilities for ensuring the stability of the global financial system and reducing systemic

risks (Uyar et al., 2022). Therefore, a key question is whether or not board meeting attendance among insurers, and associated levels of performance, are different from those highlighted in prior cross sectional general industry studies, such as Vafeas (1999), Chou et al. (2013), and Hahn & Lasfer (2016).

The only prior research on the board meetings-performance relationship in an insurance context that we found is Ebun & Emmanuel (2019), which limited by the small sample size (15 publicly listed insurers) and its being conducted in a developing economy (Nigeria). That study found no statistically significant results with its narrow focus on board meeting frequency and profitability effects, specifically the returns on equity (*RoE*) and assets (*RoA*)[2]. In contrast, the current study adds to the board governance and insurance literature by focusing on the profitability and solvency implications of board meeting frequency and rates of attendance in both publicly and privately owned firms operating in the UK's property casualty insurance industry. Our study of the UK contributes new insights on the attendance and performance effectiveness of board meetings in the insurance industry that are readily portable not only to other developed insurance markets, but to other parts of the financial services sector, such as banks.

The subject of this study is worthy of research inquiry as members of the boards of insurance firms may not in actuality be fulfilling their obligations to investors, policyholders, and other key stakeholders (e.g., industry regulators) by regularly attending scheduled board meetings (e.g., Vafeas, 1999). By underwriting business and other risks, the insurance industry also plays an important role in the functioning of the economy and society, including the resilience of the global financial system (Eling & Jia, 2018). As a result, the possibility of

[2] Insurers sell a 'credit-sensitive promise' to compensate policyholders in the event of insurable losses. As a result, solvency is critical to top-line (revenue) and bottom line (earnings) performance, and therefore, to sustainable value creation in the insurance industry (Doherty & Lamm-Tennant, 2009). In addition, measures of *RoE* and *RoA* in the insurance industry can be distorted by the unique statutory insurance accounting rules and idiosyncratic asset structures pertaining to insurance firms, and therefore, are not strictly comparable with equivalent measures for general industry firms (Cummins & Doherty, 2006).

'failed strategic leadership' at the apex of insurance firms is clearly of broad political, economic, and social policy interest. This is particularly the case given the increased public media scrutiny of financial firms, including insurers, following the systemic losses incurred during the 2007/9 global financial crisis (Adams & Kastrinaki, 2024).

Additionally, our findings in this UK insurance industry study could be evaluated against board meeting research that typically excludes financial and non-publicly listed firms (e.g., Ji et al., 2020) and studies conducted in institutionally different business environments to the UK, such as the Taiwanese study of Chou et al. (2013).. Indeed, publicly listed and private firms could differ in terms of their board meeting attendance rates. For example, large publicly listed insurers could have greater rates of board attendance than privately held insurers. This could be because directors may wish to show their commitment to a prestigious boardroom appointment. On the other hand, smaller, privately held insurers might have greater attendance rates than their bigger, publicly listed counterparts because private firm directors, especially outsiders, spend a relatively greater amount of their time advising the top management team (TMT) on strategic matters (Masulis & Mobbs, 2014).

In the board governance literature, Darrat et al. (2016) view effective boards as those that: (1) are vigilant with careful monitoring by independent outside directors; and (2) comprise a rich and varied human capital mix of technically skilled board insiders and industry experienced outside directors. Therefore, the present study examines the relative as well as the collective performance effects of inside and outside directors' attendance at board meetings. By investigating boardroom activity in insurance firms through the proxy of board meeting attendance and its impact on financial performance, the present study also focuses on the interaction of inside and outside directors and the financial impacts of strategic boardroom decisions.

Previous cross-industry board meeting studies (e.g., Brick & Chidambaram, 2010; Ebun & Emmanuel, 2019; Adams et al., 2021) examine the link between the frequency of board meetings and potentially mis-specified measures of performance by using Tobin's q[3]. In investigating the financial performance effects of board meeting attendance, this paper focuses on the profitability and solvency impacts using a dynamic panel design comprising 83 firms of different size and ownership-type operating in the UK's property-casualty insurance industry from the years 2004/5 to 2013/14. Given the changing nature and performance uncertainty of business environments, a dynamic research design is clearly appropriate for analyzing the performance effectiveness of corporate strategic leadership over time. For insurers, profitability reflects the net aggregate of underwriting and investment earnings reported in an accounting period, and is a key financial indicator for stakeholders, especially shareholders, managers, and financial analysts (Adams & Jiang, 2016, 2020). On the other hand, solvency is a statutorily defined accounting measure of the insurer's balance sheet strength. This performance indicator is subject to on-going regulatory surveillance under the UK's Financial Services and Markets Act (FSMA) (2000). As a result (and as noted in footnote 2), solvency is a key performance indicator in the insurance industry.

The single industry/single country research focus of our study is further advantageous as it inherently avoids possible biases (e.g., due to differences in fiscal and regulatory rules) that can arise in cross-sectional board meeting studies (e.g., see Chou et al, 2013). Moreover, the unbalanced panel data set used here comprises insurers with different organizational characteristics, including size, ownership structure, and product mix. Such within-data set variability helps to provide robust and reliable observations. For example, compared with

[3]Tobin's q, the ratio of the market value of a firm's assets to their replacement value, is a potentially misleading measure of financial performance as underinvestment in or divestment from value creating productive assets perversely increases Tobin's q. Besides, having private insurers as 93% of the panel sample precludes the use of market based measures of performance.

United States (US) publicly listed firms, the frequency of board meetings, minimum attendance requirements, and sanctions for non-attendance are not prescribed by corporate law in the UK. This means that for the directors of UK insurers, being physically present at board meetings is not a statutory requirement, but rather a voluntary decision that is likely to vary across firms. Thus, these institutional features of the UK's property-casualty insurance industry represent a prospectively clean identification test of our research hypotheses.

The present study finds that increasing the annual number of board meetings scheduled each year enhances overall rates of attendance. However, outside directors with financial experience have relatively better attendance rates than their counterparts with less technical expertise. The study also finds that overall board meeting attendance as well as directorate turn out at strategy and remuneration meetings improve profitability, but not solvency. In addition, board meeting attendance by outside directors falls when prior period profitability is sound, suggesting a 'complacency-effect' among non-executives. The negative relationship between total and outside director attendance and solvency also hints at a 'dependency-effect', whereby boards become reliant on professional managers (actuarial technocrats) to optimize financial strength and condition. However, these interesting results are inconsistent with standard agency theory, which thinks that outside directors likely benefit corporate governance practices and firm performance through their monitoring, control, and advisory functions. The study also has practical implications. For example, we help inform board level nomination committees and/or industry regulators as to the intrinsic attributes that directors, especially outsiders, need to have to successfully manage and positively contribute to performance outcomes in technically specialist and heavily regulated insurance firms.

The remainder of this paper is structured as follows. The next section provides the theoretical context of the research project and develops our hypotheses. Section 3 outlines the research design, including the data description, variables, and econometric strategy. Section 4

presents the empirical results, while the final section considers the potential implications of the research findings.

2. Theoretical context and hypotheses development

2.1. Theoretical background

Agency theory has been the predominant framework used in corporate governance reforms and initiatives in developed economies, such as the UK and US (Zalewska, 2014). Agency theory holds that the board of directors, especially independent outsiders, perform a key internal control function in overseeing managerial activities and providing valuable counsel to Chief Executive Officers (CEOs) and senior executives (Sami et al., 2011). Board directors also potentially add value by using financial and other information to shape and direct strategic investments that promote stakeholders' interests, particularly those of investors (Fama & Jensen, 1983). In this context, the corporate board function involves regular dialogue between (full-time) inside executives and (part-time) outside non-executive directors at board gatherings to ensure effective monitoring and control and to promote firm value (Chou et al., 2013). Theoretically, attendance at board meetings can influence corporate performance through directors' ability to effectively use information to monitor, advise, and influence the strategic decision-making process (Ji et al., 2020). As such, the frequency of board meetings each year can indicate the effectiveness of agency conflict controls and proactive performance related advice at the organization's upper echelons (de Andres & Vallelado, 2008). However, as Adams and Jiang (2016) point out, the cognitive and information search, verification, and processing capabilities of outside directors in insurance firms can be constrained by, among other things, their lack of relevant industry specific knowledge and/or financial acumen. Therefore, these board level competencies can be important for maximizing the financial performance of insurance firms.

2.2. Past financial performance effects on board meeting attendance

Prior research (e.g., Chou et al., 2013) notes that attendance at board meetings can be influenced by past levels of performance. For example, poor period profitability could motivate directors to be more diligent by giving more attention to effective monitoring, and therefore, more likely to attend and be more active at subsequent board meetings in order to optimize financial outcomes. In contrast, sound profitability could motivate directors, especially part-time outsiders, to spend their time and energies on other activities, thereby shirking their director responsibilities to the firm's stakeholders. This can create what Kumar and Sivaramakrishnan (2008) refer to as a 'within-board' agency incentive conflict and raise ethical issues of 'free riding' and 'lapsed boardroom independence'. Academic sources (e.g., Solomon, 2014) and corporate governance guidelines (e.g., the UK's Higgs Report, 2003) already highlight problems of boardroom complacency, including irregular meeting attendance, particularly when profitability is better than expected. Therefore:

H1a: All else equal, higher prior period profits are expected to reduce attendance at board meetings of UK property casualty insurers.

In the insurance industry, corporate strength and survival are key responsibilities of the board of directors, given the vulnerability of fixed claimants (policyholders) to heightened agency costs (e.g., claims dilution) resulting from the self-interested actions of investors and/or managers (Veprauskaite & Adams, 2018). Fiduciary commitments can further be reinforced by standards of 'good practice', especially if directors are financially qualified members of a publicly certified professional body, such as accountants, actuaries, or underwriters (Adams & Jiang, 2020). As such, there will be expectations among key stakeholders as well as personal incentives (e.g., reputational protection) for the directors of insurance firms to regularly attend board meetings, pool their resource capabilities (human capital and social network), and

contribute to the strategic and if necessary, operational decisions that protect corporate solvency. Thus:

H1b: All else equal, poor prior period solvency is expected to increase attendance at board meetings of UK property casualty insurers.

2.3. Outside directors and financial performance

Board meetings can be an important forum for outside directors to request and evaluate necessary financial and other information from the CEO and/or other senior executives, including the Chief Financial Officer (CFO). This is particularly important in highly technical and opaque corporate settings, such as those that exist in insurance and other financial firms (Han et al., 2018).

Active involvement at board meetings can also help outside directors contribute positively to corporate outcomes by mitigating CEO entrenchment problems, reducing agency costs (e.g., excessive executive pay), and alleviating informational uncertainties (Brick & Chidambaran, 2010). For example, outside directors could do this by forming 'consensual alliances' with other board members, thereby promoting information-sharing and improving the process of strategic decision making. Boardroom consensus could further enhance performance if board outsiders bring technical expertise, commercial intelligence, and personal commitment to bear on board level decisions (Kyere & Ausloos, 2021). This attribute would also help to ‘cement fault-lines’ that might adversely affect the boardroom dynamics when directors have disparate skill sets and varying amounts of industry knowledge (Georgakakis et al., 2017). In the insurance industry, alleviating boardroom frictions through knowledge sharing is particularly important not only in lowering agency costs and resolving incentive conflicts but also in maintaining statutory minimum levels of solvency and earnings stability for the benefit of investors and other key stakeholders (Adams & Jiang, 2020). As a consequence:

H2a: All else equal, attendance at board meetings by outside directors is expected to increase the profit margins of UK property-casualty insurers.

H2b: All else equal, attendance at board meetings by outside directors is expected to improve the solvency of UK property-casualty insurers.

2.4. Unitary (strategy) main boards

In the UK, the unitary (strategy) main board of directors commonly comprises the CEO, executive insiders, and independent outside directors, including the Board Chair. The unitary (strategy) board is the collective body of the firm with ultimate legal and fiduciary responsibility for the effective governance and strategic and operational functions of the firm. In this context, the primary role of the CEO and TMT is to initiate and implement strategic investment, operational, and financing decisions after taking counsel and control direction from the TMT and outside directors (Masulis & Mobbs, 2011). Adams and Jiang (2020) argue that in technically specialist industrial sectors with a plurality of contracting constituents, such as the insurance industry, inside and outside directors will be motivated to voluntarily share information as they have a common fiduciary and regulatory interest in generating profits, reducing the risk of financial distress/bankruptcy, and protecting the value of their human and social capital. Therefore:

H3a: All else equal, attendance at unitary board meetings is expected to increase the profit margins of UK property-casualty insurers.

H3b: All else equal, attendance at unitary board meetings is expected to improve the solvency of UK property-casualty insurers.

2.5. Type of board sub-committee attendance and performance

Attendance at different types of board level meetings could also influence insurers' financial performance. Many key business decisions can also be formed, shaped, and championed at sub-group meetings of the main board. Otto and Weterings (2019) find that the

existence and configuration of board-level sub-groups can provide an indicative signal to outsiders about the quality of corporate governance. These structural board governance features can help to facilitate effective corporate governance and successful business strategy. Sub-committee attendance can also influence overall levels of boardroom participation by fostering a greater professional and ethical commitment to regularly attending board meetings among other directors (e.g., see Driscoll, 2001; Nowland & Simon, 2018).

2.6. Audit and risk sub-committees

Audit and risk sub-committees, usually staffed exclusively by outside directors with a majority being financially literate, perform important monitoring, risk advice, and control functions in firms (Karim et al., 2016). Board outsiders on audit and risk sub-committees should use their independent mindsets, human/social capital attributes, and business authority to mitigate the potential abuse of power by the CEO and other senior insider executives (Zhou et al., 2018). Audit and risk sub-committees also actively advise management on various operational, auditing, financial, and risk management matters (Hardwick et al., 2011). The activities of audit and risk sub-committees can further impact positively on profitability and solvency matters by mitigating 'creative' accounting (e.g., earnings manipulation), and other aberrant managerial behavior (e.g., fraud) (Vafeas & Vlittis, 2023). Indeed, Lagasio et al. (2023) find that the monitoring, control, and advisory functions of audit and risk sub-committees in publicly listed Italian firms improve annual earnings and strengthen their financial condition. Hoque et al. (2013) also observe from the Australian corporate sector that regular attendance at audit and risk sub-committee meetings is positively and significantly related to corporate financial performance. Therefore:

H4a: All else equal, attendance at audit and risk sub-committee meetings is expected to increase the profits of UK property casualty insurers.

H4b: All else equal, attendance at audit and risk sub-committee meetings is expected to improve the solvency of UK property casualty insurers.

2.7. Remuneration sub-committees

Remuneration sub-committees determine the amount and form of compensation paid to the CEO and other board-level directors (Cotter & Silvester, 2003). Remuneration sub-committees need to set base managerial compensation and bonuses on actual (usually financial) performance benchmarks (UK Financial Reporting Council, 2012). The UK's Financial Reporting Council's Combined Corporate Governance Code (2024, section 5) further advises that the composition of remuneration sub-committees should be independent of insider board control. This separation helps ensure that remuneration sub-committee members impartially set annual executive compensation according to market-based comparators and performance targets. In setting performance targets, the remuneration sub-committees of insurance firms should align the private incentives of the CEO and executive directors with those of profit sensitive shareholders. This condition helps enhance the performance effectiveness of corporate governance (Otto & Weterings, 2019). However, the emphasis on improving profitability outcomes should not be at the expense of maintaining the solvency interests of other key stakeholders, such as policyholders and insurance industry regulators (Eckles et al., 2011). As a result:

H5a: All else equal, attendance at remuneration sub-committee meetings is expected to increase the profits of UK property casualty insurers.

H5b: All else equal, attendance at remuneration sub-committee meetings is expected to improve the solvency of UK property casualty insurers.

2.8. Nomination sub-committees

In the insurance industry, a key function of nomination sub-committees is to scrutinize and nominate both new and renewed board level appointments before submitting nominations

for regulatory and shareholder approval (Dewing & Russell, 2008). The UK's corporate governance code recommends that directors delegate the nomination process to an independent and subordinate committee of the main board (UK Financial Reporting Council, 2012). However, whether or not UK insurers have nomination sub-committees, as well as the extent to which they staff such sub-committees entirely or mainly with outside directors, is likely to vary according to their size, listing status, and/or resource availability. In principle, board nomination procedures can promote profitability and solvency by reducing the agency costs that could arise from dominant CEOs co-opting and influencing the nomination process. This might result in CEOs influencing the appointment of board members who are demographically similar and/or socially connected to themselves but, at the same time, inadequately qualified to hold office (Adams & Kastrinaki, 2024). Thus:

H6a: All else equal, attendance at nomination committee meetings is expected to increase the profits of UK property casualty insurers.

H6b: All else equal, attendance at nomination committee meetings is expected to improve the solvency of UK property casualty insurers.

3. Research Design

3.1. Data

The data set covers an unbalanced panel of 83 insurers (representing 772 firm-year data points) that were authorized and actively underwrote property casualty insurance in the UK during the accounting periods 2004/5 to 2013/4[4]. Using an unbalanced panel design helps reduce potentially confounding effects due to survivorship bias. Accounting and other data ,

[4] The 2004/5 to 2013/14 panel data set used comprises a ten-year cross-section/time series with an average of 280 UK licensed and active insurers each year. Excluded from this population of insurance firms were the 15% of small insurers with incomplete financial data over the time series; the 40% of firms for which requisite governance (e.g., meetings) data were unavailable; the 5% that exited the market (e.g., due to bankruptcy/runoff; and the 10% of small niche insurance carriers that underwrite little or no third party insurance business. In addition, roughly 50 to 60 or so of mainly subsidiary or branch insurers of foreign conglomerates authorized to write UK property insurance did not actively do so during the period of analysis. For example, some were new entrants to the UK market.

including boardroom characteristics, for publicly listed and unlisted insurers in the panel sample relate to the statutory reporting entity, and derive from a combination of hand matched sources, including the Standard & Poor's (S&P) *Synthesys* statutory accounting database (based on annual filings to the UK's insurance industry regulator at the time, the FSA), published annual reports held at the University of Nottingham's Centre for Risk & Insurance Studies (CRIS), industrial databases (e.g., *FAME*), records, insurance directories, and internet sources. All the financial variables we used are audited end-of-accounting year figures. The panel data set is inherently restricted because firm-level financial data had to be laboriously hand-matched with board level demographic information that was not always available when the study was conducted. Thus, the sampling treatment was conditioned by relevant cross-sectional/time-series data available for each insurer from publicly accessible sources.

The beginning of the analysis period (2004/5) represents the time immediately following the publication in 2003 of the Higgs and Smith Reports, which for the first time formally stressed the importance of board meeting attendance in the UK's corporate sector. The end period (2013/14) represents the latest year when complete (published and hand collected) data were available when data collection occurred[5]. The period from 2004/5 up to 2013/4 also helps to mitigate the effects of potentially confounding changes in prudential regulations and boardroom responsibilities on solvency maintenance following the introduction of the European Union's (EU) Solvency II capital maintenance rules in 2016/17 and the accounting and reporting of insurance contracts of International Financial Reporting Standard (IFRS) 17 (IFRS Foundation (IFRSF), 2017), effective January 1, 2023. Also, the

[5] More recent data collection was not possible as publication of *Synthesys* data was discontinued around 2016/17, and the University of Nottingham's repository of insurance company accounts was also disbanded at about the same time. Additionally, our relatively shorter (ten years) data panel period compared with longer periods of analysis used in other UK insurance industry board governance studies (e.g., Adams & Jiang, 2016) is accounted for by the lower availability of insurance industry board meetings data available to us when our data was collected. Nevertheless, our length of period analysis is consistent with prior board meetings research, such as the 2005 to 2015 years examined in Ji et al. (2020). Our data are also more recent than the 1996 to 2010 period analyzed in Adams et al. (2021). Therefore, by these standards we consider our analysis period to be appropriate for deriving potentially useful insights.

analysis period tended not to be characterized by disruptive endogenous events, such as major boardroom reshuffles, that could unduly influence the number of formal board meetings and attendance rates.

The panel sample constitutes roughly 30% of authorized and active insurers writing property casualty insurance solely in the UK during the analysis period. The panel sample of insurers also accounted for roughly 70% of total gross premiums written in the UK's property casualty insurance market during the period of analysis (based on insurance industry statistics for the period provided by the Association of British Insurers (ABI) (2015)). By this standard, our panel sample is representative of business activity in the UK's property casualty insurance market during the analysis period. Moreover, the data set should not constitute a major firm size related self-selection bias issue as regulatory influences on boardroom practices are likely to have a similar disciplinary effect across all insurers operating in the industry. Besides, extreme firm size value effects are mitigated by logarithmic transformation. Additionally, of the panel sample of UK insurers, approximately a quarter are mono-line insurers that tend to specialize in niche segments of the market (e.g., motor vehicle insurance), about 7% of insurers are large conglomerate publicly listed entities, and the remainder are private firms. Also, as noted earlier, our data set comprises a mix of firms of varying size, ownership, and product type.

3.2. Board level meetings variables

Our board level independent variables of interest are defined and computed in line with previous research (e.g., Vafeas, 1999; Adams & Ferreira, 2012; Chou et al., 2013) (see Table 1). We view that the total number of scheduled meetings and their attendance rates reflect the adequacy, or otherwise, of board governance as highlighted in UK corporate governance guidelines, such as the Higgs (2003) and Smith (2003) committees.

[Insert Table 1 here]

3.3. Board level controls

As board governance factors can affect the financial performance of insurance firms, we control for eight board level variables in the analysis. Baranchuk and Dybvig (2009) argue that 'grey' outside board directors could enhance performance they often possess financially relevant firm-level and industry-specific knowledge. Therefore, *GREYOUTS* are the percentage of individuals that have an affiliation with the insurance firm, such as a former executive. Dewing and Russell (2008) note that in the UK's insurance industry, the effectiveness of independent board outsiders in reducing agency costs and optimizing financial outcomes is further underscored by external regulatory oversight. Thus, *PUREOUTS* is percentage of independent (unaffiliated) board members.

Prior corporate governance research (e.g., Ivanova & Prencipe, 2023) argues that the ability of outsiders with multiple (usually three or more) directorships (*BUSYOUTS*) to actively participate in board committees and to consequently influence performance is directly related to the complexity and regulatory nature of the business environment. Jiraporn et al. (2009) also note that directors holding multiple board seats have an increased tendency not to regularly attend scheduled board meetings. Given the necessity for board outsiders to acquire specialist insurance knowledge as well as secure access to and comprehension of the information systems managed by the TMT, it is predicted that 'busy' (time-constrained) outside directors are likely to be associated with low meeting attendance and poor performance. *BUSYOUTS* is the percentage of board outsiders with three or more other non-executive positions.

Adams and Jiang (2020) find that in the UK's property casualty insurance industry, the appointment of board outsiders with professional financial (e.g., actuarial, accounting, and underwriting) expertise (*FINXOUTS*) reduces information and monitoring costs, thereby improving financial results. Norms of conduct and sanctions associated with membership of a publicly accredited professional finance body (e.g., rules governing expected ethical conduct)

are also likely to reinforce an outside financial expert's commitment to an insurance firm by attending board meetings. We measure *FINXOUTS* as the percentage of financially qualified board outsiders.

Acquired insurance industry experience among board outsiders (*INSUROUTS*) is also likely to be particularly performance enhancing (Adams & Jiang, 2020), and thus positively associated with board meeting attendance. *INSUROUTS* is the percentage of board outsiders with insurance experience. O'Sullivan and Diacon (2003) further note that separating the CEO and Chair positions (*NoDUALITY*) helps to improve the effectiveness of corporate governance, and consequently, the financial performance of insurance firms. *NoDUALITY* is a dummy variable coded 1 when the CEO and Board Chair are different people. Hardwick et al. (2011) reason that technically specialist insurance firms with bigger size boards (*BDSIZE*) are likely to bring more business acumen and technical skills (i.e., resource capabilities) to bear on challenging strategic risk management (e.g., solvency) issues, thereby increasing meeting attendance and improving financial outcomes. However, longer CEO tenure (*CEOTEN*) in an insurance firm can increase entrenchment behavior (e.g., strategic inertia) that could constrain the ability of directors to effectively influence decisions at board meetings, and consequently adversely impact on firm performance (Onali et al., 2016). Adams et al. (2024) also note that CEO entrenchment at the boards of insurance firms can, by increasing CEO power, have a detrimental effect on financial performance. *CEOTEN* is the number of years as CEO.

3.4. Firm specific controls

The relationship between board meetings and financial performance could also be influenced by the characteristics of insurance firms. Therefore, in our analysis with consider the effects of eight firm-specific variables.

Pathan and Skully (2010) argue that financial firms with dominant (institutional) shareholders (*OWNCONC*) are likely to expect the board of directors, particularly outsiders, to physically attend board meetings regularly to actively monitor and regularly question the

strategic decisions and performance effectiveness of CEOs. Hsu et al. (2015) also note that block holder investors can play an important monitoring and control function in reducing agency problems in insurance firms. Accordingly, it is predicted that concentrated ownership will be positively related to board meetings and corporate performance. *OWNCONC* is the percentage of shares held by the largest 3 shareholders.

We also include the following three dummy variables. Downs and Sommer (1999) and Adams and Jiang (2016) report that insider share ownership (*INSIDEOWN*) can motivate board executives in insurance firms to act like shareholders, causing them to promote innovative and calculated risk taking strategies that increase firm value. This suggests that directors with share ownership plans are likely to regularly attend board meetings and table innovative strategies that boost accounting results. Insurance firms listed on major stock exchanges (*LIST*), such as the London Stock Exchange, could also be motivated to perform better and conduct their board duties more seriously than other insurers to attract global investment inflows and grow product market share (Miller, 2011). CEO incentive-based compensation (*BONUS*) also enters our empirical analysis as bonus systems can motivate insurance firms' CEOs and board members to realize profit targets (Mayers et al., 1997).

Additionally, multi product insurers (*ProductMIX*) are likely to encourage directors to attend board meetings and make collective decisions that realize both input (cost) and output (revenue) efficiencies, thereby enhancing financial performance (Mayers & Smith, 1981). This implies that, all else equal, there is likely to be better board meeting attendance in product diversified insurers compared with niche single line operators. Moreover, directors of multi product insurers may need to closely monitor the changing variability of risk exposures across the various product lines in their portfolio to maintain ongoing financial strength and condition (Jaffee, 2006). This possibility again implies that multi product insurers are likely to have better board meeting attendance than mono-line insurers. As loss-contingent capital, reinsurance

(*REINSUR*) can improve capital allocation and usage, and consequentially enhance the performance of insurance firms by increasing underwriting capacity across different product lines, reducing the probability of ruin, and lowering taxes. Reinsurance also enables primary insurers to comply with regulatory prescriptions on capital maintenance and risk management (Abdul Kader et al., 2010). However, optimizing the type and mix of reinsurance to concomitantly manage and realize earnings and solvency maintenance objectives is a complex and highly specialized (actuarial) function that usually requires a high degree of technical, financial, and business knowledge input from board members (Veprauskaite & Adams, 2018). This implies that reinsurance will be positively related to directors' presence at board meetings and insurers' financial viability.

Financial viability is also likely to improve as insurance firms grow in size as a result of board level decisions that facilitate economies of scale and scope as well as new business growth (Hardwick et al. 2011). Furthermore, directors on the boards of large insurers are likely to be particularly motivated (e.g., for public reputational reasons) to take their corporate governance duties seriously and physically attend board meetings. Prior board meetings research (e.g., Chou et al., 2013) also supports a positive link between firm size and board meeting attendance. Therefore, firm size (*LnSIZE*) is anticipated to be positively related to both directors' presence at board meetings and financial outcomes. *LnSIZE* is logarithmically transformed to control for the possible confounding effects of extreme firm asset values.

Moreover, well established insurers (*AGE*) are likely to have competitive advantages over relatively new entrants in terms of acquired product-market knowledge, established distribution networks, and an existing customer base (Adams & Jiang, 2016). These possible competitive advantages associated with a greater length of experience of market operations could obviate the need for directors to regularly attend board meetings. On the other hand, older firms may be subject to greater competition and out-of-date business processes that warrant in-

depth deliberations at the board level. Such a need could result in a greater frequency of and more active attendance at board meetings given the potential two-way effect of firm age on board meeting attendance and corporate performance. Prior studies (e.g., Joeks et al., 2024) often include *AGE* as a control variable. *AGE* is the number of years since an insurer's establishment.

The full set of variables that enter the empirical analysis are defined in Table 1.

3.5. Econometric strategy

To examine the first research question on whether board meeting attendance is driven by the characteristics of insurance firms (H1a and H1b), a pooled Ordinary Least Squares (OLS) regression per equation (1) is first estimated, followed by a first-differences regression, that deals with the econometric constraints of short panel designs, per equation (2) below:

$$A_{it}^{j} = B_{it}^{'}\beta + F_{it}^{'}\gamma + y_{it-1}^{'}\varphi + \varepsilon_{it} \qquad (1)$$

$$\Delta A_{it}^{j} = A_{it}^{j} - A_{it-1}^{j} = \Delta B_{it}^{'}\beta + \Delta F_{it}^{'}\gamma + \Delta y_{it-1}^{'}\varphi + \Delta\varepsilon_{it} \qquad (2)$$

where A_{it}^{j}, is the directors' attendance rate for insurer i at time t for meeting j. $B_{it}^{'}$, and $F_{it}^{'}$ are vectors of board-related (including recorded meetings (*TMEET*)) and firm-specific control variables, respectively. *LnTMEET* is sometimes used instead of *TMEET* to address the possible confounding effects of extreme values. Lastly, $y_{it-1}^{'}$ represents two lagged performance indicators of interest, namely profit margin (*PMARGIN*) and (an inverse measure) solvency (*SOLV*). Lagged performance measures are included in the estimations because, as noted earlier, past performance can affect current attendance at board meetings.

In addressing the second research question as to whether or not meetings attendance rates of the full board and other board-level sub-committees affect the profit and solvency performance of insurance firms (H2a/b through H6a/b), prior research (e.g., Jermias & Gani, 2014) suggests that the composition, structure, and operational configuration of boards can be an important driver of financial performance. However, prior studies (e.g., Wintoki et al., 2012)

explicitly acknowledge potential endogeneity concerns in corporate governance research[6]. Bias from unobservable heterogeneity and omitted variables can be eliminated through the application of random or fixed-effects estimators. Therefore, estimates are often obtained via the implantation of a panel fixed-effects estimator as illustrated in equation (3) below. Here y_{it}^{k} is the financial performance for insurer i at time t where $k = (PMARGIN, SOLV)$. A'_{it},B'_{it} and F'_{it} are vectors of board meeting attendance category variables (e.g., *TMEET*), board-level controls (e.g., *BDSIZE*) and firm-specific controls (e.g., *LnSIZE*), respectively; u_i is the firm fixed-effects, and ε_{it} is an error term. That is:

$$y_{it}^{k} = B'_{it}\beta + F'_{it}\gamma + A'_{it}\delta + u_i + \varepsilon_{it} \qquad (3)$$

While reducing a major source of potential endogeneity through omitted variable bias, equation (3) could still suffer from the general limitation of simultaneity, where $E\left(\varepsilon_{it} \mid B'_{it},F'_{it},A'_{it}\right) \neq 0$. If directors aim for a level of meeting attendance in any period with a view towards achieving a targeted financial outcome in that period, then while financial performance may be affected by the contemporary level of board involvement, the reverse can also hold. In other words, directors could voluntarily adjust their attendance at board meetings in response to anticipated future (good or bad) changes in performance. One way to resolve this simultaneity problem is to find and use a relevant ('orthogonal') instrument variable in the estimation, as used in Two-Sage Least Squares (2SLS) regression analysis (Flannery & Hankins, 2013). However, this approach is often difficult to execute if viable external

[6] As highlighted in recent board meetings research (e.g., Vafeas & Vlittis, 2023), endogeneity issues can arise for several reasons. These commonly include: (a) time-invariant unobserved heterogeneity and omitted variable bias (e.g., overlooked characteristics among firms, such as unobservable differences in directors' preferences for attending board meetings); (b) simultaneity (reverse causality) (e.g., the possibility that board meeting attendance may be influenced by past and/or expected future levels of financial performance); and (c) firm selection bias (e.g., that directors in poorly performing firms will collectively attend board meetings to resolve intractable strategic difficulties, such as persistent falls in product-market-share).

instruments to reduce endogeneity are not available, as is the case here and more generally in corporate governance research (Wintoki et al., 2012).

A further concern is that for fixed effects estimators to be consistent and unbiased, one must assume exogeneity, which is a much stronger pre-condition than assuming no contemporaneous correlation. Specifically, our equation (4) is a simplified version of equation (3):

$$y_{it}^{k} = A_{it}^{'}\delta + u_i + \varepsilon_{it} \quad (4)$$

the strict exogeneity assumption can be stated in terms of idiosyncratic errors, such that, $E\left(\varepsilon_{it} \mid A_{i1}^{'}, A_{i2}^{'}, \ldots, A_{iT}^{'}, u_i\right) = 0,\ t = 1, 2, \ldots, T$. This implies that explanatory variables (e.g., involvement at meetings) are uncorrelated with the error term ε_{it} in each time period, and therefore, independent of past realizations of the dependent (financial performance) variables of interest, where $E\left(A_{is}^{'}\,\varepsilon_{it}\right) = 0,\ s,t = 1, \ldots, T$. Thus, maintaining the exogeneity assumption implies that the parameters to be estimated in equation (3) may be biased and inconsistent if past (good or bad) performance affects current board meeting attendance.

A pragmatic and common solution to dynamic endogeneity is to include a lagged dependent variable in equation (3), which would reduce the omitted variable bias associated with past financial outcomes co-determining both present performance and current board meeting attendance. However, estimating dynamic models with firm fixed effects can bias parameter estimates as lagged values of the dependent variable, y_{it-1}^{k}, may be correlated with the error term (Nickell, 1981). In addition, as in this study, firm measures of performance tend to be fairly static across time, resulting in insufficient variation to justify the use of fixed-effects estimation. What is more, many independent variables may vary in cross section, but not over time - meaning that a fixed effects approach may not detect their effect on measures of performance (Sandvik, 2020). Such confounding effects can be exacerbated in unbalanced panels of short length (T≤30), as is the case here (Flannery & Hankins, 2013).

To circumvent such concerns, model equation (3) is estimated using the Generalized Method of Moments (GMM-SYS)) dynamic estimation procedure of Blundell and Bond (1998) with robust standard errors clustered at the firm level. GMM-SYS also usefully helps control for unobserved panel heterogeneity (Hansen, 1982). For this and other reasons (noted below), the procedure has been applied in prior corporate governance, including board meetings research (e.g., Ji et al., 2020) [7]. Our GMM-SYS model is given in equation (5) below:

$$\begin{pmatrix} y^{k}_{it} \\ \Delta y^{k}_{it} \end{pmatrix} = a + \beta_1 \begin{pmatrix} y^{k}_{it-1} \\ \Delta y^{k}_{it-1} \end{pmatrix} + \beta_2 \begin{pmatrix} B'_{it} \\ \Delta B'_{it} \end{pmatrix} + \beta_3 \begin{pmatrix} \mathrm{F}'_{it} \\ \Delta F'_{it} \end{pmatrix} + \beta_4 \begin{pmatrix} A'_{it} \\ \Delta A'_{it} \end{pmatrix} + \varepsilon_{it} \qquad (5)$$

As shown in equation (5), GYM-SYS employs both level and difference estimations under the assumption that first-differences of the instrumented (lagged dependent) variables are uncorrelated with unobserved firm-related factors. First-differencing eliminates fixed-effects since by definition it is time invariant, thereby mitigating potential bias that may arise from unobserved firm-specific heterogeneity (Arellano & Bond, 1991). We also assume that the correlation between the endogenous variables and fixed-effects is constant over time (Blundell & Bond, 1998), an assumption that enables us to use lagged differences as instruments for the levels equation. GMM-SYS further controls for simultaneity bias and the dynamic relationships between current values of the regressors and past values of the dependent variables. GMM-SYS also produces robust and consistent estimates when, as is the case here, unbalanced panels of relatively short temporal length are used (Blundell & Bond, 1998). Additionally, as two-step estimates of standard errors are prone to downward bias (Blundell & Bond, 1998), we implement Windmeijer's (2005) finite sample correction procedure to deal with this possibility.

[7] Clustering following a two dimensions approach allows for both firm effects and time effects. This is preferred over a singular firm fixed effects approach as the latter produces unbiased standard errors only when firm effects are permanent (Petersen, 2009). Since we do not know whether firm effects are permanent or temporary, we prefer to use clustering on two dimensions; this provides unbiased standard errors regardless of the form of firm effects (Baboukardos, 2018).

However, lagged performance ($\Delta y_{it-1}^{k} = y_{it-1}^{k} - y_{it-2}^{k}$) can still be correlated with the error term, though this can be alleviated by estimating equation (5) using two period lagged values of financial performance as instruments. As recommended by Roodman (2009a), diagnostic tests were also conducted to check the consistency and reliability of the results. These include Arellano and Bond's (1991) first order (AR(1)) and second order (AR(2)) diagnostics for serial autocorrelation. If the errors are serially correlated, then the GMM-SYS estimator will produce inconsistent, and hence, unreliable results. Furthermore, if we include sufficient period lags to control for dynamic effects, then any historical value of the dependent variable beyond the lags is a potentially valid instrument as it is exogenous to current shocks in the relevant dependent variable. This means that errors in first order differences should be correlated, but not in tests of second-order differences (Arellano & Bond, 1991).

We also perform Hansen's (1982) *J*-test of over identifying restrictions to determine instrument validity, specifically that instruments are uncorrelated with the error term. With this test, the null hypothesis of no misspecification is rejected if the computed $\chi 2$ statistic exceeds its tabulated value. In addition, we apply the Difference-in-Hansen test to diagnostically check that fixed effects in the error term and the endogenous variables are homogeneously constant over time, thereby supporting our use of lagged differences (e.g., see Bond et al., 2001). Collectively, these diagnostics did not highlight matters of concern with the reliability of the chosen econometric procedure.

In addition, the number of lags of the financial outcome variables of interest (profitability and solvency) needed to ensure dynamic completeness (i.e., serially uncorrelated errors) were also assessed by estimating separate regressions for current profitability and solvency using various period lags of performance after controlling for other explanatory variables. The results show that a single period lag is sufficient to capture the dynamic nature of board meetings performance relationships in insurance firms, a feature that can be affected

by short term cyclical effects affecting the demand and supply of insurance (e.g., see Cummins & Outreville, 1987). Therefore, as a result of these GMM-compliant diagnostic checks we consider equation (5) to be reasonably well-specified. Finally, to mitigate the risk of instrument proliferation, the 'collapse sub-option' of the *xtabond2* command in *Stata* was also applied in our estimations (e.g., see Roodman, 2009b).

4. Empirical results

4.1. Descriptive statistics and correlation analysis

The summary statistics for the panel sample of insurers with 772 firm-year data points are presented in Table 2. Table 2 indicates that our period of analysis (2004/5 to 2013/14) witnessed mean levels of profitability (*PMARGIN*) of around 8% per annum and an average solvency rate (*SOLV*) of 70%, indicating overall economic resilience (albeit with some variability in profitability across insurers). These descriptive statistics indicate that, in general, the board of directors in our panel of insurance firms adequately controls variations in period financial performance. Indeed, Pearce and Patel (2018) note that controlling performance variability is a positive outcome of collective board level group decision making.

[Insert Table 2 here]

The average annual number of 14 meetings (*TMEET)* over the period of analysis is also greater than the eight or nine annual board meetings cited by Adams & Ferreira (2012) in their analysis of the US banking sector during the 1980s and 1990s. Table 2 further shows that board meeting attendance rates for our panel sample of UK insurance firms indicate low levels of 'truancy' with mean annual rates of attendance of close to or over 90% recorded for both inside and outside directors across all types of board-level committees (albeit again with some variation around the means). Board meeting attendance among UK insurers is better than the mean 78% directors' attendance rate reported for publicly quoted non-financial Taiwanese firms by Chou et al. (2013) using 2004/5 data.

These comparative statistics suggest that turnouts at board meetings have increased in importance in line with the recommendations of corporate governance guidelines, such as the UK's Higgs and Smith Reports that were both issued in 2003. Nowland and Simon (2018) also suggest that generally better attendance rates across all types of board meetings signify an improved sense of professional duty and commitment among directors in the wake of the 2007/9 global financial crisis. Cross sectional research of US public corporations during the 2007/9 global financial crisis by Francis et al. (2012) further shows that firms with higher overall meeting attendance records performed financially better than their counterparts with more infrequent rates of attendance.

The generally sound attendance levels at board meetings in UK insurers could further reflect the requirements for directors to regularly attend scheduled board meetings under (non-observable) appointment contracts. This is unlike Chou et al. (2013), who observe that board insiders averaged better board meeting attendance rates than outside directors. Table 2 reveals no discernible difference between the mean board meeting attendance rates of inside and outside directors.

The average board size (*BDSIZE*) for the sample of insurers in our panel data set is approximately nine members. This figure is roughly half that noted for the boards of large US banking corporations reported in Adams & Ferreira (2012) and reflects the (large) public and (small) private ownership mix of UK insurers examined in the present study. But our UK insurance firm average board size of nine members is similar to the average board size in Brick & Chidambaran's (2010) US multi-industry study. Our average board size figure is also slightly greater than the mean board size figure of seven members reported in Chou et al.'s (2013) cross-sectional publicly listed sample of generally large and non-financial Taiwanese firms. To some extent, the slightly larger number of board seats reported in Table 2 for UK insurers could reflect the growing corporate governance importance of independent outside directors in the

UK since the publication of the Higgs (2003) and Smith (2003) committee reports, and especially following the 2007/9 global financial crisis.

Other board composition indicators worthy of note from Table 2 are that 40% to 50% of outside directors have past affiliations with insurers (*GREYOUTS*) and/or have some insurance industry experience (*INSUROUTS*). These observations could reflect the importance of insurance knowledge and expertise to the strategic direction of insurance firms (Adams & Jiang, 2016). But only approximately 21% of outside directors, on average, hold a relevant professional finance related qualification. This potential 'skill limitation' could restrict the capabilities of outside directors on the boards of insurance firms from effectively advising on financially complex, but strategically important solvency matters (Adams & Jiang, 2020). Additionally, on average about 37% of all directors have shareholdings in the insurance firms that they manage. Consistent with the Higgs Report's (2003) recommendations, this finding hints that most outside directors of UK insurers may not have share ownership plans as it could induce overly risky decisions in an industry where prudent management and solvency maintenance are of primary strategic importance (Eling & Jia, 2018).

Table 3 gives the correlation coefficient matrix for our variables (with significance levels given at $p \leq 0.05$, two-tail). Table 3 indicates that the total number of annual board meetings (*TMEET*) is positively correlated to all our board meeting variables, albeit with a varying degree of magnitude. Furthermore, profit margin (*PMARGIN*) is positively and statistically correlated with more board meetings variables (e.g., *TMEETATT, SMEET,* and *RMEET*) compared with *SOLV*, suggesting a direct linkage between the number of board committee meetings and profitability.

[Insert Table 3 here]

4.2. Multivariate analysis

4.2.1. First research question: Determinants of board meeting attendance

Columns (1) to (3) of Table 4 display the initial results from estimating equation (1). In columns (4) to (6), the analysis was subsequently repeated using equation (2) to remove possible sources of firm specific unobserved heterogeneity[8]. It was also noted that the selected explanatory variables were robust to multicollinearity concerns due to their computed variance inflation factors being less than ten (Kennedy, 2003).

[Insert Table 4 here]

Investigating H1a and H1b, Table 4 suggests that past financial performance does affect current rates of attendance. For example, the pooled OLS coefficient estimates in columns (1) and (3) of Table 4 indicate that inconsistent with H1b, weak period solvency lowers total director attendance at board meetings in subsequent years (at $p \leq 0.10$, two-tail). The estimations in column (6) of Table 4 also indicate that consistent with H2a, sound profitability tends to reduce the involvement of outside directors in next period board meetings (at $p \leq 0.01$, two-tail). This result suggests that when insurers are profitable, outside directors are relatively less active and not so vigilant in turning-out for board meetings (i.e., a 'complacency-effect' arises). This observation accords with the views of some scholars (e.g., Ocasio, 1997) who argue that directors' interest in board meetings, and consequently the level of monitoring intensity and personal commitment, varies depending on the adequacy of a firm's recent accounting results.

The pooled OLS results in columns (1) to (3) of Table 4, further indicate that heightened insolvency risk (given the inverse measure of solvency employed) tends to reduce next year meeting attendance among all board members, particularly outside directors (at $p \leq 0.10$ level, two-tail). Ostensibly, these results are more difficult to rationalize given that financial survival is a primary strategic and regulatory goal for insurance firms (Eling & Jia, 2018). However, a plausible explanation is that solvency maintenance is an inherently technical

[8] Table 4 only shows the statistical results for the main determinant variables of internal and outside directors' attendance for all annual board meetings. The results for the determinants of director attendance at the four different types of board sub-committees were not statistically significant. Therefore, these empirics are not tabulated for expositional simplicity.

and financially engineered (actuarial) activity involving the use of different reinsurance treaties and loss reserving policies (Veprauskaite & Adams, 2018). As a result, given that on average 79% of board members are not professionally qualified financial experts, including most outside directors, many directors may refrain from attending all scheduled board meetings because they are unable to contribute meaningfully to strategic solvency matters (i.e., a 'dependency-effect' pertains). Although potentially counter intuitive given the emphasis placed on the importance of independent board level monitoring and control in the traditional agency theory orientated board governance literature (e.g., Ivanova & Prencipe, 2023) and UK corporate governance guidelines (e.g., the Higgs Report, 2003), there is empirical precedent. For example, Hsu and Wu (2014) find that in the UK corporate sector, independent outside directors are positively linked with bankruptcy rates due to their lack of firm-specific and/or business knowledge compared with affiliated ('grey') outsiders. Moreover, from a fault line theoretical perspective, Georgakakis et al. (2017) report that when the demographic backgrounds and role identities of directors are not closely aligned, then frictions and inefficiencies are likely to arise with adverse consequences for the sustainability of financial performance and the future viability of firms.

The results reported in columns (4) to (6) of Table 4 also indicate that increasing the total number of annual board meetings (*LnTMEET*) leads to significantly increasing total rates of attendance (*TMEETATT*), attendance for inside executive directors (*INATT*) and outside non-executive directors (*OUTATT*) separately. However, this result contrasts with Chou et al. (2013) who find that the directors of Taiwanese non-financial firms (that tend to have relatively lower regulatory and governance requirements than financial firms) attend proportionately fewer meetings.. Our results are also inconsistent with Hahn & Lasfer (2016) who find that between 1999 and 2012 the attendance at scheduled board meetings for a cross-sectional

sample of UK publicly listed firms declined due largely to various overseas commitments of non-executive directors of foreign nationality[9].

Table 4 also shows that across all columns (1) to (6), boards with proportionately more *GREYOUTS* and *PUREOUTS* have relatively lower meeting attendance records (at $p \leq 0.10$, two-tail). This result is contrary to our expectations. However, Chou et al. (2013) also note in their Taiwanese study that 'grey' outside directors have lower board meeting attendance rates. But as we predicted, the results in columns (1) and (3) of Table 4 reveal that financially expert outside directors (*FINXOUTS*) are positively associated with board meeting attendance (at $p \leq 0.01$, two-tail). This finding is consistent with the view that outside directors who are members of publicly accredited finance-related professional bodies, such as accountants and actuaries, are likely to regularly attend board meetings. This is because such financial experts may feel that they need to demonstrate a 'good moral example' to their colleagues to regularly attend board meetings (e.g., see Driscoll, 2001).

Of the firm-specific influences on board meeting attendance, Table 4 (columns (1) to (6)) reveals that insurers with block-holder investors (*OWNCONC*) and more diversified product portfolios (*ProductMIX*) have relatively lower rates of attendance for inside and outside directors (at $p \leq 0.05$, two-tail). Consistent with Chou et al. (2013), these findings suggest that close oversight of key agents (e.g., CEOs) by dominant investors and industry regulators substitutes for board-level monitoring by outside directors through board meetings. In addition, insurers offering different types of product may, at least at an aggregate level, require less risk-based monitoring and active advisory input from board members compared with their counterparts operating in niche segments of the insurance market. The liabilities of multi-product lines might be deemed by boards to be 'low aggregation risk' because they are

[9] In sensitivity tests, the foreign nationality of directors neither impacted the frequency of scheduled board meetings nor the levels of director attendance among our panel sample of UK insurers. This likely reflects the greater regulatory attention recently given financial services firms, and to the demonstrable commitment of their board members to have and attend more annual meetings, particularly since the 2007/9 global financial crisis.

backed-up by high regulatory capital charges and/or they benefit from cross-portfolio risk diversification (e.g., see Jaffee, 2006). The results presented in Table 4 also indicate that outside board members of more established insurers (*AGE*) tend to be less involved in board meetings than their counterparts in newer entrants to the insurance market. This again hints at a 'complacency-effect' that possibly arises from the (over)confidence of hubristic-natured board members in the economic resilience of insurers that are well-established in the market.

4.3. Second research question: Performance-effects of board meetings

Tables 5 and 6 report the empirical results for *PMARGIN* and *SOLV* from estimating equation (5). Here the main variables of interest enter the regression analysis individually in a step-wise manner in order to ascertain their performance impact.

[Insert Table 5 here]

Column (4) of Table 5 reveals that consistent with H2a and H3a, *PMARGIN* is positively and statistically related to *SMEET* (at $p \leq 0.10$, two-tail). This implies that collectively the directors of UK insurance firms tend to be motivated to attend main unitary (strategy) board meetings and discuss key strategic issues (e.g., underwriting policies and investment plans) that impact directly on reported earnings. The positive and statistically significant link between profitability (*PMARGIN*) and the rate of actual to scheduled board meeting attendance (*TMEETATT*) in column (1) (at $p \leq 0.05$, two-tail) also likely reflects the desire of insurance company directors to maximize their profit-based compensation plans and/or public reputations (human capital value) for sound financial management (Eckles et al., 2011). In Table 5, column (5), the positive significant result between *PMARGIN* and *RMEET* (at $p \leq 0.05$, two-tail) is also suggestive of the performance benefits of active remuneration sub-committees as highlighted by H5a. The positive significant result between *PMARGIN* and *INSUROUTS* in column (5) (at $p \leq 0.01$, two-tail) further indicates that insurance experienced non-executives can contribute positively to financial performance.

All columns in Table 5 show that a positive relationship between *PMARGIN* is particularly likely to arise with larger board sizes (*BDSIZE*) and in insurers with block-holder ownership (*OWNCONC*) (at p≤0.10, two-tail). Column (5) also shows positively significant results for *GREYOUTS* and *BONUS* (at p≤0.10, two-tail), hinting that outside directors with firm-specific knowledge and managerial bonus incentives can yield profitability gains for insurance firms. These results corroborate the view of Schleifer & Vishny (1986) and others that active boardroom monitoring by large profit-motivated investors together with firm-knowledgeable and incentivized board members can help improve the 'bottom-line'. However, contrary to our predictions, many firm-related variables, such as *LIST*, *LnSIZE*, and *AGE*, are not significantly positively related to profitability across columns (1) to (5). This suggests that as highlighted in previous insurance industry research (e.g., Hardwick et al., 2011), the profitability of larger and longer established insurers could be blunted by operational inefficiencies and/or increased agency costs (e.g., due to managerial inertia).

Table 5 reveals that *PMARGIN* is unrelated to *OUTATT*. This result indicates that the performance-effectiveness of non-executive directors at board meetings could be blunted because most outsiders (79%) in our panel sample are not professionally accredited financial experts. Consistent with H3a and H5a, *PMARGIN* is positive and statistically significant in relationship to both *SMEET* and *RMEET* (at p≤0.05, two-tail). Contrary H4a and H6a, attendance at audit and risk as well as nomination sub-committees does not significantly improve profitability. These observations suggest that key strategic financial (e.g., actuarial reserving) and board appointment decisions may be discussed, analyzed, and formally endorsed at the main unitary (strategic) board meeting rather than at the lower sub-committee level.

[Insert Table 6 here]

Table 6 illustrates that contrary to H2b, H3b, H4b, H5b, and H6b, directors' presence at the main unitary (strategic) and subordinate board-level meetings is statistically unrelated to

SOLV. However, five of our control variables, namely *FINXOUTS, INSUROUTS*, *NoDUALITY*, *OWNCONC*, and *BDSIZE*, are associated with solvency (*SOLV*) (at $p \leq 0.10$, two-tail). These results imply that although outside directors have private reputational incentives to control financial distress risks (e.g., see Chou et al., 2010), solvency issues in our UK insurance industry sample are only raised and examined in detail at board meetings when board directors, especially outsiders, have the necessary technical financial (e.g., actuarial) and insurance knowledge needed to effectively optimize solvency alongside other key strategic financial performance targets, such as profitability. Faleye (2015) also finds that boards dominated by generalist non-executive directors can reduce financial performance. Compared with inside executives, such as the CFO, outsiders have restricted access to and generally limited comprehension of firm-specific technical and financially relevant information. This fact hinders their ability to contribute effectively to key strategic decisions. The direct statistical relationship between *SOLV* and *OWNCONC* in Table 6, columns (1) to (4) further suggests that major block-holder investors actively monitor directors' ability to meet solvency targets so as to protect both their large-scale investment in insurance firms and their role as effective monitors and controllers of directorate activities (e.g., see Hsu et al., 2015).

The coefficient estimates for board meeting attendance (*TMEETATT*) and solvency (*SOLV*) presented in Table 6 are potentially interesting although not statistically significant. They tentatively suggest, as hinted earlier, that strategically important yet actuarially technical solvency and regulatory issues may not always be referred up to the unitary board of directors for resolution. Instead, such matters could be directed to the operational-level technical staff, including those in the actuarial, accounting, and risk underwriting areas, whose analysis of and advice on solvency optimization subsequently feeds up to the CEO and other boardroom technical experts (e.g., the CFO) to review, modify, and implement solvency-related decisions. This contention suggests that granularly complex and highly technical solvency management

issues may bypass detailed scrutiny by the full board. Again, this is possibly reflective of the aforementioned 'dependency-effect'. Interestingly, the inadequacy of outside directors' technical and financial skills sets in insurance firms was also highlighted in 'forensic' reports into insurance corporate failures, such as the Penrose report (2004) on the demise of Equitable Life, a UK-based life insurer.

Table 6 also indicates that, as expected, larger insurance firms (*LnSIZE*) tend to be moderately associated with sound solvency levels (at $p \leq 0.10$, two-tail). This probably reflects their generally high public profiles and generally well-diversified and well-capitalized business structures (Hardwick et al., 2011). Interestingly, Table 6 (columns (1) to (4)) also shows a significantly positive relationship between *AGE* and *SOLV* (at $p \leq 0.05$, two-tail). This suggests that older UK insurers tend to have relatively weaker solvency profiles than newer UK insurance firms . A possible explanation for this surprising observation is that longer established UK insurance providers may not be pricing their products on an 'actuarially fair' and/or 'up-to-date' risk-pricing basis. This prospect means that by 'down-pricing', longer established insurers can maintain product-market share in the face of younger and/or more innovative (e.g., high technology) insurers entering the market. However, the mis-actuarial pricing of assumed risks can increase the value of future claims, lower capital and reserves, and ultimately threaten statutory minimum levels of solvency (Adams et al. 2019). Such a prospect is likely to be of high interest to key insurance industry stakeholders, such as investors, policyholders, and industry regulators.

4.4. Additional robustness tests

Hardwick et al. (2011) report that board-level variables can interact with each other to influence firm performance. In the interest of parsimony, each of the three main board attendance variables *TMEETATT*, *INATT* and *OUTATT* were interacted with our size-related explanatory variables of *BDSIZE, ProductMIX, LnSIZE* and *LIST* (with the interactions mean-centered to minimize the effects of multicollinearity). The reasoning is that bigger boards are

likely to be associated with large and operationally complex (e.g., product diversified) insurance firms, and as such subject to potentially high agency costs. As a result, attendance at board committee meetings with large membership is likely to be a requisite for sustained financial strength and condition. The interactions were not statistically significant, and so they are not tabulated in the interest of brevity. Additionally, potential instrument variables (IVs) that are theoretically uncorrelated with the error term, in this case the percentage of foreign directors on the board, were incorporated in our analysis to check again for possible endogeneity issues. However, this procedure did not yield consistent estimates because foreign directors may be UK residents, and therefore, are not unduly restricted in their ability to regularly attend board meetings. Furthermore, we control for major macroeconomic shocks, such as the 2007/9 global financial crisis, and re-estimated using equation (5) incorporating a dummy variable to capture the 2007/09 global financial crisis. Again, this robustness test did not yield statistically significant results and are not tabulated in the interest of brevity.

As in prior board meetings research (e.g., Ebun & Emmanuel, 2019), other commonly used profitability measures, such as return on assets (*ROA*), were also subject to robustness checks. However, the results these tests are also not statistically significant at conventional levels of confidence across the panel sample (see Table 7). Prior insurance industry board governance studies (e.g., Adams & Jiang, 2020) also incorporate in their analysis insurance industry-specific measures of performance, such as the loss ratio (*LossRatio*) (total claims in relation to net earned premiums) and combined ratio (*CombinedRatio*) (total claims and expenses in relation to earned net premiums) alongside conventional *PMARGIN*. Thus, we include *LossRatio* and *CombinedRatio* in additional robustness tests, with the results indicating some consistency with the *PMARGIN* variable (see Table 7).

[Insert Table 7 here]

5. Discussion and conclusion

Drawing inspiration from the board governance and insurance literature, we use a dynamic panel data design from 2004/5 to 2013/14 to study the link between board meetings and both profitability and solvency in the UK property casualty insurance industry. The study has relevance for business practitioners, regulators, and scholars, given that financial performance metrics are commonly used to assess the effectiveness of boards. For insurers, directorate attendance at board meetings is not only a regulatory expectation and ethical/moral responsibility but also pertinent for effective managerial monitoring, control of agency costs, and the protection of stakeholders' economic and fiduciary interests in a widely acknowledged technically complex industry.

The study finds that increasing the number of board meetings scheduled each year enhances overall rates of attendance. However, outside directors with financial experience have relatively better attendance rates than their counterparts with less technical expertise. The study also finds that statistically, overall board meeting attendance as well as directorate turn-out at strategy and remuneration meetings moderately improves profitability, but not solvency. In addition, board meeting attendance by outside directors falls when prior period profitability is sound, suggesting a 'complacency-effect' among non-executives. This observation is potentially important as it challenges the prescriptions of company law, corporate governance guidelines, and prior research (e.g., Solomon, 2014) that outside directors should be diligent in exercising their statutory and fiduciary responsibilities to stakeholders by regularly attending board meetings. The lack of a significant impact of directorate attendance on solvency also hints at a 'dependency-effect', whereby boards rely on below-board-level professional managers (actuarial technocrats) in order to optimize financial strength and condition. Such a situation, along with possible outside director complacency in attending subsequent board meetings when current period profitability is sound, are contributory insights provided by our study. Therefore, these aspects could be investigated further in future academic and regulatory

research. For example, studies could use primary data collection techniques, such as field-site interviews or survey instruments.

Our results also have potential commercial and public policy impact. Agency theory holds that outside directors are appointed to boards in order to monitor and control agency problems (costs) and independently advise the CEO and TMT on strategic policy proposals (Fama & Jensen, 1983). Therefore, the results of our insurance industry board meetings research should interest a broad range of corporate stakeholders, including the nomination committees of insurance firms as well as industry regulators (such as the UK's Prudential Regulation Authority (PRA)). Under section 59(1-7) of the UK's FSMA (2000), insurance industry regulators often have a statutory duty to verify and endorse board level appointments. The employment of financial and insurance industry knowledgeable independent outside directors is also likely to be valued by investors and policyholders. These capital providers clearly have interests in the business competencies and dedication to duty of board members, and the associated ongoing performance of insurance firms in which they have financial stakes. In fact, Nowland & Simon (2018) note that at the annual general meeting, shareholders are unlikely to re-elect directors with poor board meeting attendance records.

The present study also found that attendance at the audit and risk sub-committee meetings of the board influences neither profitability nor solvency. Thus, these findings raise important theoretical and practical questions as to the performance-effectiveness of subordinate board-level sub-committees in insurance (and other financial) firms that largely, if not exclusively, comprise outside directors. The conclusions reported here tentatively question the notion common in the agency theory literature that outside directors as a leadership group are fully motivated and ubiquitously capable of protecting and promoting the interests of key stakeholders through the active monitoring and control of the CEO and TMT. These ostensibly counter-intuitive findings provide an opportunity for scholars to reassess agency theory based

notions about the effectiveness of the independent monitoring, control, and advisory functions of outside directors, and their influence on firm performance, particularly in insurance and other idiosyncratic financial firms.

Finally, we acknowledge that inferences from the present study may be inhibited by the relatively small panel data size employed. In addition, our empirical results could be sensitive to the different econometric models applied (e.g., OLS versus first-difference estimations). However, these potential concerns with our econometric strategy could be improved in the future with larger sample based research. Such research might compare board meeting attendance and firm performance for both life and non-life insurers in either national or international contexts. In addition, our research design implicitly assumes that board meeting attendance equates with the extent to which directors participate in boardroom deliberations and decisions. Indeed, the form and extent of directorate participation at board meetings are variables that are not observable from the secondary data sources used in this study. However, these limitations could be addressed in future studies using participative field research methods and other qualitative techniques. Moreover, subject to data availability, future studies could examine whether our findings are influenced by regulatory changes, such as the EU's Solvency II capital regulations implemented in 2016/17 and/or new accounting and disclosure requirements imposed on UK insurers by IFRS 17 from 2023/24[10]. Finally, future empirical research could consider the results of the current study in the context of other developed and developing insurance markets as well as in other parts of the financial services sector, such as banks.

[10] Whether recent (post-2016) institutional changes affected board meeting attendance among UK insurers is an unanswered empirical question. On the one hand, the new solvency and accounting and reporting changes impose new duties on insurance company directors. On the other hand, regulatory and accounting duties also existed for directors under the UK's previous statutory solvency maintenance regime and the pre-*IFRS 17* insurance accounting requirements under *IFRS 4* (IFRSF, 2004). Moreover, the pre-Solvency II board meeting attendance rates highlighted in our sample are high (approximately 89% on average), suggesting that there has not been a mandatory change in board meeting attendance since the implementation of Solvency II in January 2016.

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Table 1
Variable definitions.

Variables	Definition
Performance variables	
PMARGIN	Net profit margin, measured as post-tax earnings to net premiums written
SOLV	Solvency position, measured as 1-surplus (capital +reserves)/total assets (the lower the ratio, the more solvent an insurer)
ROA	Return on assets is measured as net profit divided by total assets
LossRatio	Loss ratio is total claims in relation to net earned premiums
CombinedRatio	Combined ratio is total claims and expenses in relation to earned net premiums
Board meeting variables	
TMEET	Total number of annual board meetings
LnTMEET	The logarithm of *TMEET* is used at times to address the possible confounding effects of extreme values.
TMEETATT	Directors' average annual attendance rate at board meetings (i.e., actual to scheduled attendance)
INATT	Inside directors (including the CEO) average annual attendance rate at board meetings
OUTATT	Outside (independent) directors (including the Board Chair) average annual attendance rate at board meetings
SMEET	Directors' annual attendance rate at board strategy (full) committee meetings
ARMEET	Directors' annual attendance rate at board audit and risk committee meetings
RMEET	Directors' annual attendance rate at board remuneration committee meetings
NOMMEET	Directors' annual attendance rate at board nomination committee meetings
Boards level controls	
GREYOUTS	% of directors affiliated with the insurance firm, such as a former executive (affiliated outsiders on the board)
PUREOUTS	% non-affiliated (independent) outsiders on the board
BUSYOUTS	% outsiders on the board who hold ≥ 3 full-time equivalent board positions
FINXOUTS	% outsiders on the board who are financial experts, including professionally qualified accountants, actuaries, and underwriters.
INSUROUTS	% outsiders on the board with insurance industry experience
NoDUALITY	Dummy variable equals 1 for separate Board Chair and CEO, 0 otherwise
BDSIZE	Board size, the total number of board members
CEOTEN	CEO tenure, number of years a CEO has been at the head of their insurance firm
Firm specific controls	
OWNCONC	Ownership concentration measured by % of shares held by the largest 3 shareholders
INSIDEOWN	Dummy variable equals 1 for managerial share scheme, 0 otherwise
LIST	Dummy variable equals 1 if an insurer is publicly listed, 0 otherwise
BONUS	Dummy variable equals 1 for board-level bonus plan, 0 otherwise
Product MIX	Herfindahl index, closer to 1 the more concentrated the product mix
REINSUR	Reinsurance ceded divided by gross written premiums
LnSIZE	The natural logarithm of total assets
AGE	The number of years since an insurer's establishment

Note: Financial data are year-end reported figures.

Table 2
Descriptive statistics.

Variables		Mean	Min	Max	Std. Dev.	Obs.
PMARGIN	Overall	0.082	0.000	0.460	0.049	772
	Between				0.033	
	Within				0.030	
SOLV	Overall	0.696	0.500	0.900	0.090	772
	Between				0.081	
	Within				0.039	
TMEET	Overall	14.047	3.000	29.000	5.357	772
	Between				5.276	
	Within				1.865	
TMEETATT	Overall	0.890	0.500	1.000	0.125	772
	Between				0.086	
	Within				0.105	
INATT	Overall	0.929	0.340	1.000	0.134	772
	Between				0.076	
	Within				0.088	
OUTATT	Overall	0.905	0.000	1.000	0.099	772
	Between				0.140	
	Within				0.149	
SMEET	Overall	0.876	0.330	1.000	0.152	772
	Between				2.093	
	Within				0.911	
ARMEET	Overall	0.894	0.500	1.000	0.150	772
	Between				1.917	
	Within				0.762	
RMEET	Overall	0.984	0.500	1.000	0.088	449
	Between				0.538	
	Within				0.292	
NOMMEET	Overall	0.971	0.500	1.000	0.116	449
	Between				0.522	
	Within				0.281	
GREYOUTS	Overall	0.429	0.000	1.000	0.214	772
	Between				0.137	
	Within				0.056	
PUREOUTS	Overall	0.570	0.000	1.000	0.214	772
	Between				0.221	
	Within				0.119	
BUSYOUTS	Overall	0.226	0.000	0.830	0.136	772
	Between				0.206	
	Within				0.206	
FINXOUTS	Overall	0.207	0.000	0.630	0.117	772
	Between				0.105	
	Within				0.060	
INSUROUTS	Overall	0.498	0.000	1.000	0.226	772
	Between				0.212	
	Within				0.105	
No DUALITY	Overall	0.909	0.000	1.000	0.287	772
	Between				0.305	
	Within				0.091	
BDSIZE	Overall	8.817	4.000	14.000	2.171	772
	Between				1.994	
	Within				1.030	
CEOTEN	Overall	4.411	1.000	22.000	2.852	772
	Between				2.219	
	Within				2.037	
OWNCONC	Overall	0.649	0.000	1.000	0.296	772

	Between				0.289	
	Within				0.048	
INSIDEOWN	Overall	0.373	0.000	1.000	0.484	772
	Between				0.469	
	Within				0.109	
LIST	Overall	0.070	0.000	1.000	0.255	772
	Between				0.236	
	Within				0.066	
BONUS	Overall	0.850	0.000	1.000	0.358	772
	Between				0.344	
	Within				0.133	
ProductMIX	Overall	0.429	0.000	0.875	0.216	772
	Between				0.207	
	Within				0.051	
REINSUR	Overall	0.311	0.200	0.750	0.068	772
	Between				0.062	
	Within				0.024	
LnSIZE	Overall	4.783	2.708	10.00	1.737	772
	Between				1.663	
	Within				0.318	
AGE	Overall	50.299	1.000	133.000	33.308	772
	Between				33.041	
	Within				3.262	

Note: Variables are defined in Table 1.

Correlation coefficient matrix of variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(14)	(15)	(16)
(1) PMARGIN	1.00											
(2) SOLV	-0.11*	1.00										
(3) TMEET	0.11	-0.01	1.00									
(4) TMEETATT	0.06*	-0.05	0.06*	1.00								
(5) INATT	-0.03	0.01	0.00*	-0.05	1.00							
(6) OUTATT	0.04	0.04	0.10*	0.03	0.08*	1.00						
(7) SMEET	0.12*	-0.10*	0.65*	0.01*	0.05	-0.01	1.00					
(8) ARMEET	0.19*	-0.11*	0.68*	0.02*	0.01	0.08*	0.08*	1.00				
(9) RMEET	0.26*	-0.02	0.22*	0.09	0.06	0.03*	0.42*	0.53*	1.00			
(10) NOMMEET	0.19*	-0.03	0.35*	0.03	0.00	0.06*	0.50*	0.53*	0.04*			
(11) GREYOUTS	0.38*	-0.15*	0.16*	0.09*	0.07*	0.02	0.28*	0.29*	0.32*			
(12) PUREOUTS	-0.17*	0.17*	0.20*	-0.11*	-0.04	0.07*	0.05	0.03	-0.17*			
(13) BUSYOUTS	0.21*	-0.23*	0.09*	0.01	0.06	-0.05	0.20*	0.25*	0.14*			
(14) FINXOUTS	0.33*	-0.06	0.36*	0.13*	-0.01	0.13*	0.40*	0.39*	0.14*	1.00		
(15) INSUROUTS	0.36*	-0.25*	0.12*	0.05	0.04	0.01	0.16*	0.19*	0.32*	0.27*	1.00	
(16) No DUALITY	0.01	-0.10*	0.12*	0.08*	0.00	0.09*	0.20*	0.27*	0.01	0.23*	0.15*	1.00
(17) BDSIZE	0.20*	-0.01	0.46*	0.24*	-0.08*	0.09*	0.62*	0.60*	0.54*	0.32*	0.20*	0.19*
(18) CEOTEN	0.06	-0.02	0.05	0.08*	-0.02	0.12*	0.14*	0.23*	0.35*	0.06	0.06	0.13*
(19) OWNCONC	0.01	0.20*	-0.11*	0.07	-0.05	-0.09*	-0.22*	-0.22*	0.04	-0.08*	0.01	-0.25*
(20) INSIDEOWN	0.27*	-0.13*	0.16*	0.06	-0.01	0.05	0.14*	0.21*	0.26*	0.28*	0.18*	-0.07
(21) LIST	0.15*	0.17*	0.26*	0.02	-0.03	0.04	0.22*	0.26*	0.05	0.43*	0.07*	-0.01
(22) BONUS	-0.02	0.04	-0.09*	0.01	0.01	0.10*	-0.15*	-0.10*	0.02	0.10*	0.03	0.30*
(23) ProductMIX	-0.10*	0.15*	-0.18*	-0.03	0.04	-0.03	-0.22*	-0.17*	-0.12*	-0.19*	-0.07	-0.22*
(24) REINSUR	0.04	0.20*	-0.17*	0.07	0.06	0.05	-0.05	-0.01	0.32*	-0.11*	0.05	0.01
(25) LnSIZE	0.24*	-0.03	0.39*	0.11*	0.01	0.14*	0.53*	0.57*	0.61*	0.32*	0.22*	0.05
(26) AGE	0.04	-0.23*	0.27*	0.11*	0.00	0.12*	0.19*	0.26*	0.23*	0.20*	0.08*	0.21*

Variables	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
(17) BDSIZE	1.00								
(18) CEOTEN	0.24*	1.00							
(19) OWNCONC	-0.03	-0.04	1.00						
(20) INSIDEOWN	0.26*	0.07*	0.26*	1.00					
(21) LIST	0.16*	-0.01	0.15*	0.37*	1.00				
(22) BONUS	0.09*	0.04	0.23*	0.20*	0.04	1.00			
(23) ProductMIX	-0.29*	0.06	0.00	-0.20*	-0.01	-0.28*	1.00		
(24) REINSUR	0.05	0.38*	0.01	-0.17*	-0.22*	-0.11*	0.35*	1.00	
(25) LnSIZE	0.60*	0.12*	0.02	0.51*	0.45*	-0.01	-0.35*	-0.03	1.00
(26) AGE	0.15*	-0.08*	-0.23*	0.18*	-0.05	-0.01	-0.33*	-0.15*	0.22*

Notes: Variables are defined in Table 1. Correlations are computed using the Pearson correlation test or the non-parametric Spearman rank correlation test for dummy variables. The label * indicates statistical significance at the $p \leq 0.05$ level (two-tail).

Results of pooled OLS regression's on determinants of directors' attendance.

VARIABLES	*Expected Sign*	*(1) TMEETATT*	*(2) INATT*	*(3) OUTATT*	*(4) TMEETATT*	*(5) INATT*	*(6) OUTATT*
$PMARGIN_{t-1}$	-	0.03	0.03	0.06	- 0.02	0.07	-0.40***
		(0.12)	(0.11)	(0.09)	(0.01)	(0.13)	(0.14)
SOL_{t-1}	+	-0.01**	-0.05	-0.01*	-0.19	-0.31	-0.23
		(0.01)	(0.06)	(0.05)	(0.17)	(0.21)	(0.15)
LnTMEET	+/-	- 0.01	- 0.01	- 0.01	0.02***	0.01**	0.02***
		(0.00)	(0.01)	(0.01)	(0.06)	(0.06)	(0.05)
GREYOUTS	+	-0.42**	0.08	-0.21***	-0.62**	0.83*	- 0.08
		(0.16)	(0.21)	(0.08)	(0.28)	(0.45)	(0.14)
PUREOUTS	+	-0.45***	0.13	-0.21***	-0.78**	0.85*	-0.17
		(0.15)	(0.21)	(0.07)	(0.29)	(0.49)	(0.15)
BUSYOUTS	-	- 0.02	- 0.05	- 0.03	0.07	0.13	0.12*
		(0.05)	(0.04)	(0.04)	(0.07)	(0.12)	(0.07)
FINXOUTS	+	0.16***	0.02	0.11***	0.11	0.02	0.06
		(0.04)	(0.06)	(0.04)	(0.11)	(0.11)	(0.08)
INSUROUTS	+	- 0.04	0.04	- 0.02	-0.13	0.11	- 0.03
		(0.05)	(0.03)	(0.03)	(0.09)	(0.09)	(0.05)
NoDUALITY	+	0.01	0.04	0.01	- 0.05	- 0.09	- 0.08
		(0.07)	(0.03)	(0.02)	(0.06)	(0.07)	(0.06)
BDSIZE	+	0.01**	- 0.01	0.01	0.03***	0.06	0.02**
		(0.01)	(0.05)	(0.03)	(0.01)	(0.01)	(0.06)
CEOTEN	-	0.00	- 0.03	- 0.00	0.00	- 0.08*	- 0.03
		(0.00)	(0.02)	(0.01)	(0.02)	(0.04)	(0.02)
OWNCONC	+	-0.05***	-0.03	- 0.01	-0.15	-0.26***	- 0.23***
		(0.02)	(0.03)	(0.02)	(0.11)	(0.08)	(0.07)
INSIDEOWN	+	- 0.01	0.04	- 0.02	- 0.04	0.07	0.06
		(0.02)	(0.02)	(0.01)	(0.04)	(0.05)	(0.04)
LIST	+	0.01	0.06	0.01	0.13*	0.01	0.15**
		(0.02)	(0.03)	(0.02)	(0.07)	(0.05)	(0.04)
BONUS	+	- 0.01	- 0.06	- 0.05	- 0.03	-0.11**	- 0.07*
		(0.02)	(0.02)	(0.01)	(0.03)	(0.05)	(0.04)
ProductMIX	-	- 0.04	- 0.06*	0.04	- 0.03	-0.44***	-0.25**
		(0.04)	(0.03)	(0.03)	(0.11)	(0.12)	(0.12)
REINSUR	+	0.16	0.24**	0.18**	0.52	-0.24	0.15
		(0.10)	(0.11)	(0.08)	(0.33)	(0.37)	(0.23)
LnSIZE	+	0.04	0.05	0.05	- 0.01	- 0.01	- 0.02
		(0.05)	(0.06)	(0.04)	(0.015)	(0.03)	(0.02)
AGE	+/-	-0.00**	- 0.00**	- 0.000**	- 0.03*	- 0.03	- 0.03
		(0.00)	(0.00)	(0.000)	(0.01)	(0.03)	(0.02)
Constant	+/-	1.25***	0.76***	1.06***	0.01	0.00	0.04
		(0.16)	(0.22)	(0.08)	(0.02)	(0.02)	(0.01)
Year Dummies		YES	YES	YES	YES	YES	YES
R^2		0.11	0.06	0.08	0.08	0.06	0.09
N		770	770	770	687	687	687

Notes: We replace *TMEET* with its logarithm of equivalent (*Ln(TMEET*) to address the possible confounding effects of extreme values. Columns (1) to (3) list the pooled OLS regression's coefficient estimates and robust firm-level clustered standard errors (in parenthesis) for our explanatory variables, including single period lags of the dependent (performance) variables that are estimated from equation (1). Columns (4) to (6) repeat the analysis using a first-difference estimator, formally illustrated in equation (2), to eliminate the potentially confounding effects of unobserved firm-specific heterogeneity. Use of first-differences reduces the number of observations to 687. Levels of statistical significance are indicated by *** p≤0.01, ** p≤0.05, and * p≤0.10 (two-tail). Variables are defined in Table 1.

Table 5

Results of GMM-SYS regressions with profitability (*PMARGIN*) as the dependent variable

VARIABLES	*Expected Sign*	*(1) PMARGIN*	*(2) PMARGIN*	*(3) PMARGIN*	*(4) PMARGIN*	*(5) PMARGIN*
$PMARGIN_{t-1}$	+	0.71***	0.57***	0.47***	0.56***	0.48***
		(0.15)	(0.12)	(0.13)	(0.15)	(0.11)
TMEETATT	+	0.09**				
		(0.04)				
INATT	+		0.02			
			(0.02)			
OUTATT	+			0.01		
				(0.02)		
SMEET	+				0.02*	
					(0.01)	
ARMEET	+				0.00	
					(0.01)	
RMEET	+					0.01**
						(0.01)
NOMMEET	+					0.01
						(0.01)
GREYOUTS	+	0.01	0.05	0.02	0.14	0.02*
		(0.05)	(0.05)	(0.05)	(0.10)	(0.01)
PUREOUTS	+	-0.01	-0.03	-0.03	-0.03	-0.01
		(0.02)	(0.02)	(0.02)	(0.04)	(0.01)
BUSYOUTS	-	0.01	0.01	-0.00	0.03	0.00
		(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
FINXOUTS	+	0.09	0.05	-0.03	-0.02	-0.00
		(0.06)	(0.04)	(0.05)	(0.09)	(0.05)
INSUROUTS	+	-0.05	-0.05*	-0.01	-0.06	0.09***
		(0.03)	(0.02)	(0.02)	(0.07)	(0.04)
N DUALITY	+	-0.00	0.01	-0.00	0.00	-0.03
		(0.02)	(0.02)	(0.03)	(0.04)	(0.03)
BDSIZE	+	0.01*	0.01*	0.02*	0.02*	0.01*
		(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
CEOTEN	+	0.00	0.00	0.00	-0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
OWNCONC	+	0.00*	0.01*	0.00*	0.01*	0.01*
		(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
INSIDEOWN	+	-0.00	0.01	0.01*	0.00	-0.00
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
LIST	+	-0.00	0.01	0.03	0.03	0.01
		(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
BONUS	+	-0.01	-0.03	-0.04	-0.03	0.03*
		(0.02)	(0.02)	(0.03)	(0.03)	(0.02)
ProductMIX	-	-0.02	-0.02	-0.03*	-0.02	-0.02
		(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
REINSUR	+	-0.03	-0.01	0.01	0.02	0.03
		(0.03)	(0.03)	(0.05)	(0.07)	(0.05)
LnSIZE	+	0.00	-0.00	-0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
AGE	+	-0.00	-0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	?	-0.04	0.03	0.11**	0.10	0.05
		(0.04)	(0.04)	(0.05)	(0.07)	(0.05)
Year Dummies		YES	YES	YES	YES	YES
Difference-in-Hansen		4.33	4.02	4.51	3.16	5.60
tests of exogeneity		(0.18)	(0.19)	(0.19)	(0.20)	(0.21)
Hansen test of over-		23.61	19.93	9.14	22.13	28.12
identification		(0.26)	(0.29)	(0.24)	(0.28)	(0.29)
AR(1)		-1.90	-1.82	-1.80	-1.55	-3.96
		(0.05)	(0.02)	(0.03)	(0.05)	(0.00)
AR(2)		1.52	1.61	1.24	1.08	1.92
		(0.13)	(0.16)	(0.21)	(0.29)	(0.14)
N		687	687	687	687	402

Notes: Columns (1) to (5) list the step-wise inclusion of our board meeting attendance variables. The Hansen J-Hansen test are coefficients estimates and p-values. The Difference-in-Hansen test for exogeneity is also conducted under the null hypothesis that instruments used for the equations in levels are exogenous and reports coefficient estimates and p-values. The instruments are lagged levels (dated t-2,.. t-5) in the first-difference equations combined with lagged first-differences (dated t-1) in the level equations. Use of first-differences reduces the number of observations to 687 and in column (5) to 402.Values in parentheses refer to robust standard errors. AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null of no serial correlation and reports z-scores and the p-values. Statistical levels of significance are indicated by *** $p \leq 0.01$,** $p \leq 0.05$, and *$p \leq 0.10$ (two-tail). Variables are defined in Table 1.

Table 6
Results of GMM-SYS regressions with solvency (SOLV) as the dependent variable.

VARIABLES	Expected Sign	(1) SOLV	(2) SOLV	(3) SOLV	(4) SOLV	(5) SOLV
$SOLV_{t-1}$	+	0.93***	0.73***	0.66***	0.63***	0.86***
		(0.10)	(0.08)	(0.23)	(0.24)	(0.13)
TMEETATT	-	-0.06				
		(0.06)				
INATT	-		-0.06			
			(0.04)			
OUTATT	-			-0.02		
				(0.04)		
SMEET	-				-0.00	
					(0.01)	
ARMEET	-				-0.00	
					(0.01)	
RMEET	-					-0.01
						(0.02)
NOMMEET	-					-0.00
						(0.03)
GREYOUTS	-	-0.07	-0.09	0.08	0.05	0.10
		(0.06)	(0.06)	(0.11)	(0.14)	(0.08)
PUREOUTS	-	0.04	-0.01	0.03	0.04	-0.01
		(0.04)	(0.03)	(0.07)	(0.08)	(0.03)
BUSYOUTS	+	0.00	0.00	-0.01	-0.01	-0.02
		(0.02)	(0.01)	(0.04)	(0.04)	(0.03)
FINXOUTS	-	-0.05	-0.04	-0.29**	-0.30**	-0.28*
		(0.05)	(0.05)	(0.13)	(0.14)	(0.15)
INSUROUTS	-	-0.05*	-0.01*	-0.03*	-0.05*	-0.01*
		(0.04)	(0.04)	(0.07)	(0.08)	(0.10)
NoDUALITY	-	-0.02*	-0.03*	-0.02*	-0.01*	-0.03*
		(0.04)	(0.03)	(0.05)	(0.05)	(0.05)
BDSIZE	-	-0.00**	-0.01**	-0.00**	-0.00**	-0.01*
		(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
CEOTEN	-	0.00	-0.00	-0.00	-0.01	-0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
OWNCONC	-	-0.00**	-0.01**	-0.01**	-0.01**	-0.00
		(0.02)	(0.02)	(0.03)	(0.03)	(0.02)
INSIDEOWN	-	-0.00	-0.00	-0.01	-0.01	-0.00
		(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
LIST	-	0.00	0.03	0.06*	0.06*	0.05
		(0.02)	(0.02)	(0.03)	(0.04)	(0.04)
BONUS	-	0.02	-0.00	0.06	0.05	0.01
		(0.03)	(0.03)	(0.05)	(0.05)	(0.03)
ProductMIX	+	0.01	0.01	0.01	0.00	-0.00
		(0.02)	(0.02)	(0.03)	(0.04)	(0.04)
REINSUR	-	0.03	0.08*	0.23**	0.25**	0.14
		(0.05)	(0.05)	(0.11)	(0.12)	(0.11)
LnSIZE	-	-0.01*	-0.01*	-0.01*	-0.01*	-0.00*
		(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
AGE	-	0.01**	0.01**	0.01**	0.01**	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	?	-0.06	0.09**	0.26**	0.26**	0.12
		(0.10)	(0.08)	(0.16)	(0.16)	(0.11)
Year Dummies		YES	YES	YES	YES	YES
Difference-in-Hansen tests of exogeneity		14.50	13.02	13.51	10.14	12.31
		(0.80)	(0.76)	(0.77)	(0.68)	(0.79)
Hansen test of over identification		36.99	56.06	32.34	30.37	38.82
		(0.35)	(0.69)	(0.74)	(0.76)	(0.60)
AR(1)		-5.36	-5.59	-3.12	-2.91	-4.34
		(0.02)	(0.02)	(0.00)	(0.01)	(0.00)
AR(2)		0.52	0.37	0.48	0.21	0.58
		(0.60)	(0.71)	(0.62)	(0.64)	(0.64)
N		692	692	692	692	407

Notes: Columns (1) to (5) list the step-wise inclusion of our board meeting attendance variables. The Hansen J-test of over-identification is under the null hypothesis that all instruments are valid. The values reported for the Hansen test are coefficients estimates and p-values. The Difference in Hansen test for exogeneity is also conducted under the null hypothesis that instruments used for the equations in levels are exogenous and reports coefficient estimates and p-values. We assume that firm-specific controls are exogenous and all other independent variables are endogenous. Treating all independent variables (apart from firm-specific controls) as predetermined rather than endogenous variables did not qualitatively change the results. The instruments are lagged levels (dated t-2, t-5) in the first-difference equations combined with lagged first-differences (dated t-1) in the level equations. Using first differences reduces the number of observations to 692 and 407 in column (5). Values in parentheses refer to robust standard errors. AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null of no serial correlation, and reports z-scores and the p-values. Statistical levels of significance are indicated by *** $p \leq 0.01$, ** $p \leq 0.05$, and *$p \leq 0.10$ (two-tail). Variables are defined in Table 1.

Table 7

GMM-SYS results of additional robustness tests.

Dependent variable	***ROA***	***PMARGIN***	***SOLV***	*LossRatio*	*CombinedRatio*
	(1)	***(2)***	***(3)***	*(4)*	*(5)*
TMEETATT	0.05*	0.07**	0.06	-0.01	0.12*
	(0.04)	(0.03)	(0.05)	(0.03)	(0.07)
INATT	0.01	0.03	0.04	0.09*	0.08*
	(0.05)	(0.03)	(0.03)	(0.05)	(0.05)
OUTATT	-0.02	0.06*	0.03	-0.02	0.07*
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
SMEET	0.02	0.06*	0.01	0.07*	-0.00
	(0.06)	(0.03)	(0.05)	(0.03)	(0.01)
ARMEET	0.00	0.00	0.01	0.03	-0.00
	(0.03)	(0.02)	(0.03)	(0.03)	(0.01)
RMEET	-0.01	0.04**	0.02	-0.03	-0.02
	(0.02)	(0.01)	(0.04)	(0.04)	(0.02)
NOMMEET	0.02	0.00	0.01	0.01	-0.02
	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)
Board controls	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes
Financial crisis	No	Yes	Yes	No	No
N	692	692	692	692	692

Notes: In Column 1, the measure of financial performance is the return on assets (*ROA*). Columns 2 and 3 present results after controlling for the global financial crisis. Columns 4 and 5 present results when the measure of financial performance is Loss Ratio (*LossRatio*) and Combined Ratio (*CombinedRatio*). The same board and firm controls are included in all models (as defined in Table 1). Statistical significance levels are indicated by ** $p \leq 0.05$, and * $p \leq 0.10$ (two-tail). Variables are defined in Table 1.