Review of Quantitative Finance and Accounting (2024) 62:683–717
https://doi.org/10.1007/s11156-023-01216-6

ORIGINAL RESEARCH

CEO power, corporate risk management, and dividends: disentangling CEO managerial ability from entrenchment

Mike Adams[1] · **Wei Jiang**[2] · **Tianshu Ma**[3]

Accepted: 23 September 2023 / Published online: 17 October 2023

Abstract
We contribute to the literature on dividend policy by considering two largely ignored, yet important factors, namely CEO power and corporate risk management. We first disentangle CEO managerial ability from entrenchment - the two sources of leadership autonomy that are not normally distinguished in prior literature. Using UK (re)insurance data that allows us to objectively and reliably quantify risk management and to identify powerful stakeholders with monitoring incentives (e.g., shareholders and regulatory body), we find that risk management enables entrenched CEOs to increase dividends to avoid monitoring by shareholders without compromising financial resilience and increasing the risk of regulatory scrutiny. Further, we neither find the degree of CEO managerial ability nor its interaction with risk management to be related to dividends, suggesting that the competing incentives for talented CEOs to pay higher/lower level of dividends cancel out in cross-sectional tests. Nonetheless, we find that the signalling effects of dividends for future accounting earnings only exist in insurers with high ability CEOs. This is consistent with the view that talented CEOs are able to generate sustainable earnings, and when they choose to pay (more) dividends, they do so to externally signal their managerial ability.

Keywords CEO Power · Entrenchment · Managerial ability, dividends · Risk Management · Insurance

JEL G22, G32, G35.

✉ Wei Jiang
wei.jiang-2@manchester.ac.uk

Mike Adams
mba25@bath.ac.uk

Tianshu Ma
tianshu.ma@shisu.edu.cn

[1] School of Management, University of Bath, Claverton Down, Bath BA2 7AY, UK

[2] Manchester Business School, University of Manchester, Booth Street West, Manchester M15 6PB, UK

[3] School of Economics and Finance, Shanghai International Studies University, 1550 Wenxiang Road, Shanghai 201620, China

1 Introduction

Since the seminal work of Miller and Modigliani (1961) on dividend irrelevance under the assumptions of the perfect capital market, researchers have introduced into the model a number of market imperfections, including information asymmetry (e.g., Miller and Rock 1985), agency conflicts (e.g., Kalay 1982), tax effects (e.g., Rantapuska 2008), and behavioural biases (e.g., Baker and Wurgler 2004). In this study, we investigate the interaction between dividend policy and two important factors that have been largely ignored in the prior accounting and finance literature, namely the power exercised by Chief Executive Officers (CEOs) and the management of corporate risks[1].

Two studies that consider the effect of CEO power on dividend policy are Hu and Kumar (2004) and Onali et al. (2016). Hu and Kumar (2004) find that entrenched CEOs in non-financial firms in the United States (US) pay dividends to satisfy shareholders' demands for distributions and avoid the costs/risks of intrusive monitoring by investors. This supports the view of Jensen (1986) that dividends lower agency costs for shareholders by reducing the capacity of CEOs and other executives to act opportunistically by over-investing and/or engaging in excessive perquisite consumption. In contrast, Onali et al. (2016) report that powerful CEOs in publicly listed European banks reduce dividends to balance shareholders' demands for dividends with the solvency and liquidity maintenance objectives of other key stakeholders (e.g., depositors and regulators). Their findings thus reinforce the view of Shao et al. (2013) that corporate dividend policy should reflect an equilibrium of monitoring incentives amongst a variety of stakeholders rather than just from shareholders. However, Onali et al. (2016) do not distinguish whether it is the managerial ability or entrenchment aspects of CEO power that affect dividend policy.

To the best of our knowledge, prior studies have also not tested empirically the effects of corporate risk against the predictions of Miller and Modigliani's (1961) dividend model, even though Dionne and Ouederni (2011) theorize that dividend and hedging policies are closely related. Bonaimé et al. (2014) argue that risk management and dividend policy are conjointly determined as they give managers (CEOs) the flexibility to concomitantly make value-enhancing investments, reduce the probability of financial ruin, and mitigate agency problems, such as the underinvestment incentive. Cassar and Gerakos (2017) further report that few studies examine whether the management of risks matter for business operations, or if it is essentially a cosmetic exercise designed to serve the self-interests of entrenched managers. This is despite the widely recognized important role that risk management performs in underpinning the resilience of financial firms (Hankins, 2011).

In this paper, we disentangle the sources of CEO power by introducing two new measures of managerial ability and CEO entrenchment. There are competing views on how CEO managerial ability affects dividend policy. On the one hand, relative to their less able counterparts, we expect more able CEOs to run firms more efficiently and obtain a higher rate of return for shareholders. As a consequence, they may prefer to invest in growth opportunities than pay dividends. On the other hand, more able CEOs are likely confident in generating profit/cash flows for the firm and may want to signal their 'ability type' to investors by paying (more) dividends. Taken together, it's an empirical question concerning the

[1] Baldenius et al. (2014) argue that powerful CEOs have information advantages over internal monitors (e.g., independent outside directors) and external monitors (e.g., investors and industry regulators) - a feature that gives them considerable discretion over strategic decisions.

relationship between managerial ability and dividend policy. Further, it's not clear from the literature whether risk management enhances or reduces the incentives of talented CEOs to pay more or less dividends.

Consistent with prior literature on managerial entrenchment and dividend policy (e.g., Hu and Kumar 2004;Tanyi et al. 2021; Sheikh 2022), we expect that entrenched CEOs voluntarily commit to pay more dividends as a protection against disciplinary sanctions by shareholders, in particular, when risk management is in place to enable entrenched CEOs to meet the interests of shareholders as well as other stakeholders.

To test the above hypotheses, we use a novel hand-collected dataset from the United Kingdom's (UK) property-casualty insurance industry. We use the UK's insurance sector as our research setting for three main reasons. First, one possible reason for the lack of empirical evidence on risk management and dividend policy could be the availability and reliability of data. In the insurance industry, reinsurance is a commonly used risk management (contingent capital) technique that is written by third party reinsurers to compensate primary insurers for random losses in return for a share of annual premiums written (Doherty and Tinic 1981). More importantly, reinsurance can be reliably quantified as it is publicly disclosed in annual financial statements and statutory filings[2]. Veprauskaite and Adams (2018) show that as contingent capital, reinsurance substitutes for equity and reserves, enhances underwriting capacity, and increases the likelihood of dividend payouts as a result of improved reported earnings. This means that disclosing reinsurance in annual financial statements conveys important market information as to the quality of insurers' future earnings and balance sheet strength. On the contrary, commonly used corporate risk management tools by banks and large non-financial firms - financial derivatives - can be used for both risk hedging and speculative trading. Also, the accounting measurement of derivative positions is subject to changes in fair value estimation under IFRS 9: Financial instruments (2004) issued by IASB (2014). As a result, financial derivative values are not strictly comparable across large cross-sectional samples of firms.

Second, unlike many states in the US (e.g., New York), UK regulations do not restrict premiums and dividends for insurance firms. Therefore, dividend policy in the UK's insurance industry is less likely to be unduly distorted by external regulations, and more likely to be at the discretion of the CEO and board of directors. Third, similar to banks, insurers face solvency regulations that, if the minimum capital requirements are not maintained, can lead to significant costs and regulatory sanctions for insurers (e.g., Gaver and Patterson, 1999). Therefore, making a study of insurer with clear identification for the monitoring incentives of powerful stakeholders and for the importance of risk management can be potentially applicable to firms in other industries, particularly those facing regulatory capital requirements and heavily rely on risk management.

[2] Mayers and Smith (1990) report that the cost of reinsurance purchased by an insurer is the value reinsurance premiums ceded as a proportion of gross business premiums written. Gross business premiums include direct business premiums/fees receivable (net of returns) plus any reinsurance premiums that an insurer might receive (e.g., from a subsidiary). Purchasing reinsurance is an acceptable 'trade-off' cost for shareholders, policyholders, and other stakeholders as it improves earnings by increasing underwriting capacity and helps maintain solvency (Abdul Kader et al. 2010). As with Jensen's (1986) free cash flow hypothesis, the advantages of regular reinsurance purchase together with the monitoring and advisory capabilities of reinsurers, also reduce the risk of managerial opportunism, and therefore, lower agency costs for shareholders.

We first document that neither CEO managerial ability nor its interaction with reinsurance to be related to dividends. This differs from Jiraporn et al. (2016) who report that talented managers in non-financial firms pay more dividends. Our finding suggests that, on average, CEOs' managerial ability is not associated with dividend policy. This might be due to the contrasting incentives of more able CEOs in terms of dividend policy, namely whether to invest in growth opportunities by paying less dividends or to signal their type by paying more dividends. The role that risk management plays in the CEO managerial ability-dividends relation isn't clear either due to the above competing incentives of CEOs. We also find that entrenched CEOs pay less dividends. This result is consistent with the findings of Onali et al. (2016) for banks, but opposite to Hu and Kumar's (2014) findings for non-financial firms. Our results therefore suggest that, for an entrenched CEO, the pressure to maintain solvency capital by curtailing dividends takes precedence. However, when reinsurance mediates the relation, we observe that an entrenched CEO is more likely to pay higher dividends in order to discourage shareholder monitoring. This is because reinsurance protects an insurer's balance sheet from unexpectedly severe loses, and decreases the risks of costly regulatory enforcement.

We adopt several approaches to deal with possible endogeneity. Given that a large proportion of UK insurers in our sample is private firms that do not have capital market incentives to pay dividends relative to their public counterparts, we also run our baseline regressions using privately-held UK insurers only. We obtain robust evidence that entrenched CEOs pay less dividends whereas the interaction of CEO entrenchment and reinsurance is positively associated with dividends.

In addition, in light of such studies as Skinner and Soltes (2011), Caskey and Hanlon (2013), Minnick and Rosenthal (2014), and Homburg et al. (2018), we test how important dividend signals are in assessing accounting earnings persistence, taking into account dividends being paid out by insurers with CEOs of different levels of managerial ability and entrenchment. In particular, we estimate regressions of future earnings on current earnings, after conditioning on dividend, on subsamples of high versus low CEO managerial ability, and subsamples of high versus low CEO entrenchment. These regressions show that dividend-payers (or payers with high dividends) have higher earnings quality than non-payers (or payers with low dividends) when the dividends are paid by insurers with more able CEOs. However, we do not find signalling effects of dividends on earnings persistence in other subsample groups. Our findings suggest that if more able CEOs choose to pay dividends rather than investing more in future growth, they do so in order to signal their managerial ability to generate sustainable earnings for their firms. Nonetheless, dividends paid by other types of CEOs do not serve as signals for future earnings, thereby, supporting the view that dividends protect against intrusive external monitoring by shareholders.

Our study contributes to the literature in at least three regards. First, CEO power could arise from multiple dimensions including structural, ownership, expertise, and prestige aspects of leadership authority (Adams and Jiang 2017). As a result, a single variable measure (as, for example, used in Onali et al. (2016) is unlikely to capture all aspects of CEO power. Also, the alternative CEO power proxies that are adopted by many previous studies mix-up the managerial ability and entrenchment (e.g., Morse et al. 2011; Al-Shaer et al. 2023). Our study thus extends the literature on CEO power by disentangling CEO managerial ability from entrenchment.

Second, to the best of our knowledge, our study is the first to provide empirical evidence indicating that risk management is an important mediator in the setting of dividend policy in firms headed by entrenched CEOs. This is because risk management effectively mitigates financial distress/bankruptcy risk and reduces the agency costs arising from entrenched managerial behavior, such as claims dilution (speculative risk-taking) and wealth transfers away from policyholders to shareholders (risk-shifting). Therefore, risk management usefully complements internal governance (e.g., by independent outside directors) and external monitoring (e.g., by investors). In this sense, our study adds new and important insights to the dividend policy literature.

Third, our study also adds to the accounting and finance literature on the information content of dividends with respect to earnings quality (e.g., Skinner and Soltes 2011; Caskey and Hanlon 2013; Homburg et al. 2018; Lin and Li, 2021; Golden and Zheng 2022; Chen et al. 2022). We advance this literature by showing that whether dividends have signalling effects on future earnings depends on the characteristics of CEOs. In particular, we document that dividends paid by CEOs with higher managerial ability signals earnings sustainability, whereas dividends paid by CEO with lower managerial ability or entrenched CEOs are not associated with earnings persistence.

The remainder of our paper proceeds as follows. Section 2 provides background information on the key features of financial firms and why the UK insurance industry is a good environment within which to focus our research. We next formulate our hypotheses in Sect. 3. In Sect. 4, we outline our research design. Section 5 discusses the empirical results, while the final section concludes the study.

1.1 Industry and institutional background

Financial firms, such as banks and insurers, differ from other corporate entities in several key regards. As financial intermediaries, they transform risk liabilities into cash-generating assets, and as such, they are more highly levered than most other firms. Further, financial firms tend to have relatively uninformed and disparate fixed claimants (e.g., depositors and policyholders) whose economic interests need to be protected against exploitation by shareholders and managers by means of industry regulation (Berg and Gider 2017). Additionally, financial firms are often characterized by complex accounting systems and opaque financial reporting - a feature that inhibits the vigilance of outside monitors, such as investors (e.g., see de Andres and Vallelado 2008). Like banks, insurers are also socio-economically and politically salient financial institutions that operate under stringent capital maintenance rules (Adams and Jiang 2016). Again, as with banks, insurers in developed markets, such as the UK, are statutorily required (e.g., under the Financial Services and Markets Act (FSMA) 2000) to meet international accounting and auditing standards, and balance constituency claims (Dewing and Russell 2004).

The highly technical and heavily regulated nature of insurance firms often encourages the appointment of high ability (e.g., financially expert and industry experienced) CEOs who are able to use such skill sets to exercise decision-making discretion (e.g., in setting reserves) in order to optimize the interests of stakeholders (Adams and Jiang 2016, 2017, 2020). Whilst high managerial discretion can promote entrenched behavior at the upper echelons of firms (Baldenius et al. 2014; Chu et al. 2023), managerial ability can nonetheless be advantageous if it improves financial performance, especially in highly competi-

tive market conditions (Casamatta and Guembel 2010). Financial firms are also subject to industry-specific regulations that could restrict CEOs to signal their wider abilities to the market - for example, by limiting CEOs' ability to hold interlocking directorships in other insurance firms. Such regulatory constraints could thus potentially foster a greater incidence of within-firm entrenchment behavior among CEOs than might be the case in non-financial sectors of the economy.

Notwithstanding their similarities, insurers are nonetheless distinct from banks in key regards - differences that can impact on dividend policy. For example, insurers are subject to special capital maintenance rules that can directly affect free cash flows, and hence, the level of dividends (Akhigbe et al. 1993; Han et al. 2018). Additionally, insurers widely use 'loss contingent' reinsurance which allows insurers to reduce shareholdings and report higher returns on equity than banks (Upreti and Adams 2015). This feature could substitute for the market signalling attributes of positive dividend announcements. In contrast, the CEOs of banks have less incentives to indemnify contractual claimants (e.g., via counterparty default insurance) as short-term liquidity is maintained through inter-bank borrowing and lending networks that enable them to shift liquidity risks to counterparties 'off-balance sheet' (Zawadowski 2013).

Compared with banks, insurers also generate cash inflows from premiums and investment income, which they can then apply to settle claims, make investments, and top-up reserves (Hsu et al. 2015). What is more, the principal risk hedging tools used by banks are financial (especially interest rate) derivatives, which for insurers are tightly restricted by regulations. As we noted earlier, compared with financial derivatives, reinsurance is a 'pure risk hedge', which enables us to conduct reliable tests of our hypotheses. Moreover, in contrast to typically oligopolistic banking markets, the insurance sector in developed markets tends to be much more segmented and competitive (Zou et al. 2012). Competitive pressure could thus influence dividend policy - for example, by encouraging insurers to raise dividends to entice investors, and so lower the costs of capital[3].

Our UK insurance industry focus is further advantageous as it mitigates confounding effects that can arise in transnational research - for example, due to differences in national dividend tax rates. The property-casualty sector of the insurance industry also tends to be more obtuse and technically complex than the life insurance sector, where future net cash flows, and hence, dividend policy are easier to establish due to the prevalence of actuarial technology (Froot and O'Connell, 2008). Therefore, CEOs in the property-casualty insurance industry tend to have greater decision-making discretion than their counterparts in the life insurance industry (Mayers and Smith 1981). The enhanced technical complexity and acute information asymmetries in property-casualty insurance can further confound the effectiveness of external stakeholder scrutiny of CEO activities, and result in a greater variation in annual dividends in property-casualty insurers compared with their counterparts in

[3] The literature distinguishes between cash dividends and share repurchases, that are both designed to return economic value to shareholders. However, share repurchases are not significant for our sample of UK insurance firms due to statutory minimum solvency requirements, generally low equity levels maintained by insurers (e.g., due to the prevalence of reinsurance), and the preponderance of private insurance firms in our panel data set. Additionally, even amongst publicly-listed firms, share repurchases tend to be less common in the UK and Europe than they are in the US (Onali 2014). Skinner and Soltes (2011) also report that compared with dividends, share repurchases are a less informative signal regarding a firm's future earnings quality as they do not involve the same managerial commitment to generate and distribute free cash flows to investors. Therefore, the payout measures used in this study do not account for equity repurchases (and issuances).

the life insurance sector. Moreover, stock-owned property-casualty insurers in the UK and elsewhere (e.g., the US) tend to offer few, if any, participatory (dividend) rights policies compared with their life insurance (especially mutual) counterparts (Zou et al. 2009). This means that the potential for wealth transfers from policyholders to shareholders through dividend policy is more likely in property-casualty insurance.

Our UK insurance setting has other institutional advantages for the present study. For example, unlike many states in the US (e.g., New York), UK insurance regulations do not restrict premiums and dividends. Therefore, dividend policy in the UK insurance industry is less likely to be unduly distorted by external regulations and more likely to be at the discretion of the CEO and board of directors[4]. In addition, during the period of our analysis (1999 to 2013), as far as we know, there were no significant regulatory or legislative changes affecting the dividend policies of UK insurance firms. These institutional features thus enable us to potentially conduct more direct tests of our hypotheses. Cole and McCullough (2006) also report that in the US, state-based regulations often prescribe higher capital ratios (hence higher financing costs) for insurers that reinsure with foreign (so-called 'alien') reinsurers rather than US reinsurers. Again, this situation can have distorting effects (e.g., by affecting the cost and choice of reinsurance) which we intrinsically avoid in our UK analysis. Moreover, in contrast to many previous dividend studies (e.g., Onali et al. 2016) that focus exclusively on publicly-listed firms, our UK analysis covers a longitudinal/cross-sectional panel sample of a mix of publicly-listed and private stock insurers for the period 1999 to 2013. The within-sample variability in ownership structure and size (and hence, differences in agency incentive conflicts) amongst firms drawn from a large UK industry (insurance) further underscores the validity and robustness of our empirical tests (e.g., see Michaely and Roberts 2012)[5].

2 Dividend theory and hypotheses development

In this section of the paper, we outline the theoretical context for corporate dividend policy and the rationale for our research hypotheses.

2.1 Theoretical context

Agency theory predicts that unless checked (e.g., by internal controls), powerful CEOs are likely to engage in expense preference behavior, and other self-motivated pursuits (e.g.,

[4] UK companies' law and insurance regulations specify that dividends can only be distributed from accumulated realized (after-tax) profits; however, limits to dividend payouts are not legally prescribed. Nevertheless, as with the Basel III capital maintenance rules for international banks, the European Union's (EU) 2016 Solvency II insurance companies' capital adequacy requirements prohibit year-end declarations of dividends either in cases where minimum statutory levels of annual solvency are not met, or if paying a dividend breaches these targets. However, such regulatory sanctions on dividends declared by UK insurers did not apply during our period of analysis.

[5] For example, the managers (CEOs) and shareholders of private insurers may be more inclined than their counterparts in publicly-listed insurers to take financial risks (increase agency costs) so as to grow the business, and attract future investment via positive dividend signalling. In contrast, the managers (CEOs) of publicly-listed insurers may be more risk averse and relatively less generous in terms of dividend policy in order to maintain the confidence of current and prospective policyholders and avoid public (regulatory) censure.

'empire-building'), that expropriate wealth from shareholders, particularly when shareholdings are widely dispersed (Jensen and Meckling 1976). However, powerful CEOs can use dividend policy to assure shareholders as to the future value of their residual claims, thereby reducing the agency costs of monitoring and control (Easterbrook 1984). Returning wealth to shareholders in the form of regular dividends also has a 'disciplinary' function as it reduces the risk that entrenched CEOs will misuse free cash flows on negative net present value (NPV) projects that might promote their personal wealth and job security yet also dilute firm value (Jensen 1986). Adams and Ferreira (2007) report that this situation creates a potential moral hazard problem, whereby powerful CEOs' investment preferences diverge substantially from those of shareholders. Therefore, a commitment to regularly pay dividends ensures that CEOs generate the cash flows necessary to meet shareholders' expectations of regular future returns (Farinha 2003). Onali et al. (2016) argue that powerful CEOs in financial firms use dividend policy not only to meet shareholders' target returns, but also to signal financial resilience, and reduce the costs/risks of regulatory intervention. Therefore, optimal dividend policy explicitly balances the needs of investors for regular returns with the interests of policyholders for solvency maintenance[6]. However, Onali et al. (2016) do not examine the interactive influence of risk hedging on the CEO power-dividend relation. This is despite risk management and dividend policy being endogenously co-determined (Bonaimé et al. 2014) and the recognized ability of risk hedging to reduce earnings volatility, increase returns and protect balance sheets (Stulz 1988). We therefore consider such issues in the development of our hypotheses below.

2.2 Hypotheses development

In this section, we develop hypotheses on the interaction effects of aspects of CEO power and risk management on dividends.

CEOs with high managerial ability can have countervailing influences on dividend policy. On the one hand, more able CEOs, as a result of their intrinsic business acumen and professional connections, can generate higher rate of return for shareholders and are also likely to face a higher quality of investment opportunities. Therefore, they might prefer to retain profits within the firm for reinvestment and future growth, and as a consequence pay less dividends. On the other hand, CEOs with higher ability are more confident in maintaining their firms' sustainable earnings, and hence, are likely to pay more dividends in order to signal their managerial qualities to investors and others (Skinner and Soltes 2011). Due to these competing views, the net impact of CEO managerial ability on dividends is ambiguous. Neither clear is the role of risk management in the CEO managerial ability-dividends relation given the conflicting incentives of strategically-minded CEOs to pay dividends. Accordingly, we propose a null form of our first hypothesis:

H1 *Ceteris paribus*, the interaction between CEO managerial ability and risk management will *not* be related to dividends.

[6] Restrictive contractual covenants (e.g., in the corporate constitution) can also limit dividends (and/or require equity issuance) when insurers are in financially distressed states. However, as Mayers and Smith (1981) point out, in insurers fixed claimants (policyholders) are a highly disparate group, and therefore, they are inefficient monitors of managerial and shareholders' activities. Such sub-optimal internal governance control necessitates the need for external solvency surveillance and capital regulation as well as government-sponsored guarantee funds.

The literature relating to US non-financial firms documents that entrenched CEOs tend to pay high dividends as it protects their position at the helm of the organization from intrusive and potentially disruptive external shareholder monitoring (Hu and Kumar 2004). Onali et al. (2016) argue that in heavily regulated financial firms, the prospect of regulatory enforcement and the consequential loss to human capital value in the event of highly publicized financial ruin, motivate entrenched CEOs to reduce dividends to bolster liquidity and solvency. This situation is particularly likely to occur under conditions of macroeconomic uncertainty and/or heightened insolvency risk when obligations to fixed contractual claimants may not be fully discharged. In fact, this has been reported to have been the case in the European insurance industry during the 2007/9 global financial crisis (e.g., see Reddemann et al. 2010). Long et al. (1994) further argue that self-opportunism can motivate entrenched CEOs to curtail dividends so that they can realize private wealth gains at the expense of capital providers, and/or pursue investments that promote self-esteem, but denude firm value.

As contingent capital, reinsurance - a commonly used risk management technique in the insurance industry - enables entrenched CEOs of insurance firms to concomitantly meet statutory minimum levels of solvency, yet ensure sufficient liquidity to pay dividends to investors even during and after macroeconomic 'shock events' (Berry-Stölzle et al. 2014). In turn, this could help entrenched CEOs in insurance firms to reinforce their hegemonic position, and ensure their continued consumption of private benefits. Accordingly, our second hypothesis is:

H2 *Ceteris paribus*, the interaction between CEO entrenchment and risk management will be *positively* related to dividends.

3 Research design

3.1 Data

Our data set covers an unbalanced panel of 72 publicly-listed and private stock forms of organization (representing 1,024 data points) writing, and separately reporting, property-casualty insurance business in the UK over the 15 years, 1999 to 2013. The numbers of firm-year observations range from 56 to 72 over our sample period. Our use of an unbalanced panel reflects exits and new entrants to the market, and therefore, avoids the possibility of sample survivorship bias. Financial and board-level data relate to the UK statutory reporting insurance entity, and derive from various sources, including *Standard & Poor's Synthesys* statutory accounting database, published annual reports, industrial databases (e.g., *FAME*), insurance directories, and direct company representations. All financial variables are audited end-of-accounting year figures. The cross-sectional/time-series dimensions of our panel data set were constrained in that most of the data had to be hand-collected and hand-matched, and that demographic/governance data were not always readily available for our analysis period. Nonetheless, our data set constitutes roughly 25% of all active UK property-casualty insurers (writing approximately 60% of gross annual premiums) over the period of analysis, and includes insurers of varying size, ownership structure, and product-mix.

Overall, the sample distribution of our data mirrors the size, ownership, and product structure of the wider UK insurance market, and indeed, other major European and North American insurance markets, during the period of analysis. However, to control for the potentially confounding effects due to variations in firm size, we used logarithmically transformed and/or fractional measurements for the key variables used in our analysis. Whilst representative of the UK property-casualty insurance market, our data set nonetheless excludes insurance syndicates at the Lloyd's of London insurance market due to their use until 2005 of a triennial rather than a conventional annual accounting cycle. Additionally, data relating to trust funds, funds in 'run-off', protection and indemnity (P&I) pools, and the underwriting activities of onshore ('captive') insurance subsidiaries of non-insurance firms were excluded from our sample as such entities do not underwrite much, if any, third party insurance business.

3.2 Econometric strategy

Similar to past research (e.g., Hu and Kumar 2004), we use a 'volume' (left-censored) tobit model that assumes that the latent dependent variable (Y^*_{it}) - dividend-to-earnings ratio ($DIVEARN_{it}$) - is a non-limited (positive) observation truncated at 0.[7] That is:

$$Y*_{it} = \beta * X_{it} + \left(whereu_{it} - \ N(0\ \delta^2)\right) \tag{1}$$

where X_{it} is a vector of the explanatory variables (as defined in Table 1); u_{it} is a normally distributed error term that captures random influences on the variables to be estimated. Year dummies are included to control for unobserved year-specific factors. Standard errors are clustered at the firm-level to account for within-firm correlations across observations. As about 50% of our firm/year observations do not pay dividends, we also adopt the Cragg tobit model, which allows us to conduct a probit analysis to determine the probability of $Y^*_{it} > 0$, and perform the truncated normal model for given positive values of Y^*_{it}.

We check the robustness of our results as follows. First, we adopt the Arellano and Bond (1991) approach for instrumental variables (IV) estimation employing the system Generalized Method of Moments procedure (GMM-SYS). Second, we adopt both two-stage least squares (2SLS) and three-stage least squares (3SLS) IV approaches to deal with potential endogeneity. Four potential endogeneity concerns in this study are: (a) omitted variable bias (e.g., as a result of unobserved differences in CEO strategic preferences); (b) reverse causality (e.g., that dividend policy might reinforce CEO power); (c) simultaneity and (d) temporal dependence (e.g., that CEO power could be influenced by past dividend payouts) (e.g., see Adams et al. 2005).

3.3 CEO power indices

CEO power is a complicated and multifaceted concept as it could arise from the combination of structural, ownership, expert and prestige aspects of leadership authority (Adams and Jiang 2017). As a result, a single variable measure (as used in Onali et al. (2016) is

[7] As a robustness test, we use the book value of common equity as the denominator variable. Market values of equity could not be determined for the private insurers in our panel data set. The (untabulated) results are quantitatively similar when using this alternative definition of dividend payout ratio.

Table 1 Key Variable Definitions

Variables	Definition
Dependent Variables	
DIVDUM	Dummy variable equal to 1 if a cash dividend is paid, 0 otherwise
DIVEARN	Dividend paid ÷ Net operating profit after tax
CEO Managerial Ability Index Attributes	
CEOPAY	Annual value of total compensation the CEO received (including salary, cash bonuses and other benefits) divided by the total annual compensation of all directors on the board
CEOOWN	Dummy variable equal to 1 if the CEO is also a major shareholder of the company (i.e., with the ownership level greater than 3%), 0 otherwise
CEOEXPERT	Dummy variable equal to 1 if the CEO is a professionally qualified accountant, actuary or underwriter, 0 otherwise
CEOINS	Dummy variable equal to 1 if the CEO has an insurance background, 0 otherwise
CEO Entrenchment Index Attributes	
INSIDE	Dummy variable equal to 1 for the existence of managerial share scheme, 0 otherwise
CEOTEN	Number of years the CEO has been in position
CEODUAL	Dummy variable equal to 1 if the CEO and Chairman positions are not separate, 0 otherwise
CEOBONUS	Dummy variable equal to 1 if the CEO receives performance-related bonus pay, 0 otherwise
Other Variables	
REINS	Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts)
BSIZE	Board size - the total number of board members
MARGIN	Net profit margin - measured as earnings (after interest & taxes) ÷ gross premiums written
SOL	Solvency position (Leverage) - measured as 1-surplus (capital + reserves)/total assets
SIZE	The natural logarithm of total assets
LIST	Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise
LIQUIDITY	(Cash + short term deposits)/total assets
PREDIV	Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise
Age	The number of years since a firm's establishment
CONC	% shares in issue held by the top 3 shareholders
NED	% non-executive directors on the board

Note: Financial variables are measured as annual year-end figures

unlikely to capture all dimensions of CEO power. For this reason, many previous studies use multiple proxies to represent CEO power that combine aspects of managerial ability and entrenchment (e.g., see Morse et al. 2011). Guided by other research (e.g., Florakis and Ozkan, 2009; Veprauskaite and Adams 2013; Adams and Jiang 2017), we use the data reduction technique, Principal Components Analysis (PCA), to construct indices for CEO managerial ability and entrenchment. According to Florackis and Ozkan (2009), using PCA

to construct an index has two main analytical advantages. First, PCA combines a set of managerial ability or entrenchment-related variables into a single measure. This avoids potential multicollinearity arising from multiple single variables being incorporated into empirical models. This is important as different attributes of CEO power can have conjoint and/or 'hidden' effects on dividend policy. Second, PCA automatically weights each attribute included in the relevant index, and therefore, does not require the ex-ante theoretical determination of factor loadings.

From the CEO power literature (e.g., Hu and Kumar 2004; Morse et al. 2011; Adams and Jiang 2017), we select four CEO managerial ability variables to be included in the construction of the *CEO ability* index as follows:

CEO Pay (*CEOPAY*): Adams et al. (2005) demonstrate that CEOs with high ability tend to be paid more than CEOs with low ability because they have intrinsically higher human capital value (e.g., financial expertise).

CEO Ownership (*CEOOWN*): We consider whether a CEO is a major shareholder (i.e., holding more that 3% of shares in issue) to be an important influence on managerial ability. In such cases, we expect the latitude that CEOs have over decisions is likely to increase with the number of voting and control rights held (Stulz 1988).

CEO Financial Expertise (*CEOEXPERT*): Financial expertise is likely to add to a CEO's managerial ability in that financially grounded CEOs are likely to apply technical skills to complex strategic issues as well as exert influence over less financially adept directors. This is particularly likely to be the case for insurance firms as they operate in highly technical lines of risk business and stringent regulatory environments (Adams and Jiang 2020).

CEO Insurance Experience (*CEOINS*): The industry-specific attributes of CEOs are found to be important in ensuring the financial viability of insurance firms (Adams and Jiang 2017). As a result, we predict that insurance industry experience increases CEOs' managerial ability.

Next, we use four commonly used CEO power variables in the PCA to construct the *CEO Entrenchment* index.

Direct CEO Stock Ownership (*INSIDE*): Whereas CEO ownership could represent the decision-making power aspect of CEO managerial ability, it could also present the entrenched aspect of CEO power. Therefore, as in Hu and Kumar (2004), we include the existence of managerial stock ownership plan in compiling the CE*O Entrenchment* index.

CEO Tenure (*CEOTEN*): CEO entrenchment tends to increase with tenure as firm-specific knowledge takes time to develop (Onali et al. 2016). In the early years of their appointment, insurance firm CEOs are expected to be closely monitored by outside directors and regulators as their leadership reputations, and/or their firm/industry experiences, is likely to be at an embryonic stage. However, over time an established CEO is less susceptible to challenge and removal by the board of directors, but also more likely to reinforce their entrenched position by influencing boardroom appointments (Dikolli and Mayhew 2014)[8].

[8] Although the length of CEO tenure could positively reflect CEO ability, our use of CEO tenure as a measure of entrenchment is nonetheless consistent with the wider corporate finance agency theory and CEO power literature (e.g., see Brookman and Thistle 2009; Onali et al. 2016; Adams and Jiang 2017). Nonetheless, in our untabulated analyses, we include CEO tenure as a component of both CEO (ability and entrenchment) indexes. Our conclusions remain the same.

CEO-Chair Duality (*CEODUAL*): CEO duality increases the likelihood of entrenched behavior as it can restrict the information flow to outside directors, and thus, weakens their independent monitoring function (Farinha 2003).

CEO Cash Bonus (*CEOBONUS*): Chava et al. (2010) argue that entrenched managers are likely to will refrain from investing surplus cash in positive NPV projects, and instead, use the cash to pay themselves generous bonuses. Therefore, the existence of bonus system is likely to be positively related to CEO entrenchment.

3.4 Control variables

In addition, we control for eleven firm-related variables in our analysis. These are: board size (*BSIZE*), reinsurance (*REINS*), financial performance, namely: profitability (*MARGIN*) and solvency (*SOL*), firm size (*SIZE*), public-listing status (*LIST*), firm liquidity (*LIQUIDITY*), dividends paid in previous years (*PREDIV*), firm age (*AGE*), ownership concentration (*CONC*) and the proportion of non-executive directors on the board (*NED*). We briefly motivate these key control variables below.

Nguyen et al. (2016) report that in financial firms, large boards can protect stakeholders' interests from the effects of aberrant, excessively precautionary (e.g., low investment yield), and/or reckless (e.g., highly speculative) CEO behavior. This can include mitigating the risk that powerful CEOs, and collusive directors, pay dividends to reduce the likelihood of intrusive outside monitoring. This implies an inverse relation between large boards (*BSIZE*) and dividends. Abdul Kader et al. (2010) note that reinsurance (*REINS*) helps reduce underwriting risks, bolster solvency, and stabilize earnings. These attributes thus help facilitate regular dividend payments. As financial performance can be an important influence on dividend policy (Onali 2014), we also control for profitability (*MARGIN*) and solvency (*SOL*) - two key financial outcome indicators in insurance firms (Adams and Jiang 2016). We reason that profitable new business generates the requisite liquidity to regularly pay dividends, whilst lower liquidity and insolvency risk enables insurers to pay dividends without compromising their financial viability and increasing the costs/risks of regulatory scrutiny.

Hu and Kumar (2004) report that compared with small entities, large firms tend to have the resources and more diversified risk profiles to pay dividends without adversely affecting their financial condition. This suggests a positive link between firm size (*SIZE*) and dividends. Moreover, capital market incentives (e.g., the needs of institutional investors like pension funds for regular returns) can influence the dividend decisions of CEOs of publicly-listed firms differently from those of non-publicly-listed firms (Onali 2014). Therefore, we expect publicly-listed insurers (*LIST*) to regularly report higher dividends relative to private insurers. As in Koo et al. (2017), we also predict that an insurer's dividend policy is conditional on whether it has sufficient free cash flows (*LIQUIDITY*). Akhigbe and Whyte (2012) add that temporal persistence in dividends influences current payout policy so as to minimize negative market signalling-effects. Accordingly, we predict that there will be a positive link between past (*PREDIV*) and current dividend payouts. Older firms are further likely to be associated with inert managerial practices, and so likely to be positively linked with CEO entrenchment (Agarwal and Gort 2002). Because of their size and resource advantages block-holder investors (*CONC*) are also likely to be effective monitors of CEOs' activities, and therefore, inversely related to entrenchment practices (Laksmana 2008). We do not form specific predictions for the association between increasing non-executive directors on the

boards (*NED*) and an insurer's dividend policy, given the mixed evidence about the monitoring roles of non-executive directors in prior literature. For example, Cornelli et al. (2014) argue that non-executive directors help to reduce agency issues in firms whereas Adams and Ferreira (2007) report that non-executive directors have become ineffectual monitors of board activities. The variables that enter our analysis are defined in Table 1.

4 Empirical results

4.1 Summary statistics and univariate analysis

We summarize the statistics for the variables used in this study in Table 2.

About half of insurance firm/year cases in our panel sample pay annual dividends (*DIVDUM*). The average value of dividend-to-earnings (*DIVEARN*) ratio is 0.15, with a median of 0. The average *DIVEARN* figure of 0.15 for our panel sample of UK insurers is noticeably less than the mean of 0.40 reported by Onali (2014) for US and European publicly-listed banks. Our panel data set comprises many small private stock insurers that tend to have lower dividend-to-earnings ratios than publicly-listed insurers so as to maintain balance sheet strength. Nearly 40% of our firm/year observations also have a share ownership scheme as part of CEO compensation (*INSIDE*). The total average annual compensation of CEOs relative to that of all board members is 24% (*CEOPAY*), while 38% of CEOs hold 3% or more of the shares in the insurers that they manage (*CEOOWN*).

On average, more than half of CEOs have a professional financial qualification (*CEOEXPERT*), and nearly two-thirds of CEOs have an insurance background (*CEOINS*). These observations on CEO traits are again consistent with recent studies from the UK's insurance industry, such as Adams and Jiang (2017). Mean CEO tenure (*CEOTEN*) is about four years for our panel sample, which is approximately half that for US banking CEOs reported in Pathan and Skully (2010). Again, this observation probably reflects the varied size and ownership structure mix of insurance firms used here. CEOs that also hold the position of Chairman (*CEODUAL*) consist of only 10% of our firm/year observations. This is consistent with UK corporate governance guidelines (e.g., the Cadbury Report, 1992) that advocate the separation of the CEO and Chairman positions in order to promote governance accountability. Also, 91% of insurers across our panel sample have CEO bonus plans (*CEOBONUS*).

We also observe the following for our firm-specific control variables. The mean value of reinsurance ceded to gross written premium ratio (*REINS*) is 0.31, which is again consistent with prior UK insurance industry research (e.g., Abdul Kader et al. 2010). On average, board size (*BSIZE*) comprises eight directors, which is consistent with the figure observed for UK life insurers by Hardwick et al. (2011). The average values of *MARGIN* and *SOL* are 0.08 and 0.7 respectively, suggesting generally sound levels of financial performance during the period of analysis. Average firm size (the natural logarithm of total assets) of insurers in our panel sample (*SIZE*) is 4.61 within the range of 2.48 to 9.58, indicating a wide size variation in the data set. 19% of firm/year cases in our panel sample relate to publicly-listed insurers (*LIST*). Both the mean and the median values for our liquidity measure are 0.12, which is sound relative to the total assets generally held by insurance firms (Hsu et al. 2015). Additionally, about half of insurers in our panel data set paid dividends in the prior year (*PREDIV*), which is less than the comparative 78% average figure reported for pub-

Table 2 Summary Statistics

Variable	n	Mean	S.D.	Min	Median	Max
DIVDUM	1024	0.49	0.5	0	0	1
DIVEARN	1024	0.15	0.18	0	0	0.89
CEOPAY	1024	0.24	0.03	0.16	0.25	0.34
CEOOWN	1024	0.38	0.49	0	0	1
CEOEXPERT	1024	0.54	0.5	0	1	1
CEOINS	1024	0.66	0.47	0	1	1
INSIDE	1024	0.39	0.49	0	0	1
CEOTEN	1024	4.07	2.67	1	4	21
CEODUAL	1024	0.1	0.29	0	0	1
CEOBONUS	1024	0.91	0.28	0	1	1
REINS	1024	0.31	0.07	0.19	0.31	0.75
BSIZE	1024	7.92	2.25	4	8	14
MARGIN	1024	0.08	0.05	-0.2	0.08	0.46
SOL	1024	0.7	0.09	0.4	0.67	0.9
SIZE	1024	4.61	1.73	2.48	3.93	9.58
LIST	1024	0.19	0.39	0	0	1
LIQUIDITY	1024	0.12	0.05	0.02	0.12	0.32
PREDIV	967	0.48	0.5	0	0	1
AGE	1024	45.96	33.88	0	32	133
CONC	1024	0.71	0.22	0.3	0.7	1
NED	1024	0.61	0.09	0.2	0.63	0.8

Note: This table presents the descriptive statistics for the panel sample of UK stock insurers between 1999 and 2013. *DIVDUM*: Dummy variable equal to 1 if a cash dividend is paid, 0 otherwise. *DIVEARN*: Dividend paid÷Net operating profit after tax. *CEOPAY*: Annual value of total compensation the CEO received (including salary, cash bonuses and other benefits) divided by the total annual compensation of all directors on the board. *CEOOWN*: Dummy variable equal to 1 if the CEO is also a major shareholder of the company (i.e., with the ownership level greater than 3%), 0 otherwise. *CEOEXPERT*: Dummy variable equal to 1 if the CEO is a professionally qualified accountant, actuary or underwriter, 0 otherwise. *CEOINS*: Dummy variable equal to 1 if the CEO has an insurance background, 0 otherwise. *INSIDE*: Dummy variable equal to 1 for the existence of managerial share scheme, 0 otherwise. *CEOTEN*: Number of years the CEO has been in position. *CEODUAL*: Dummy variable equal to 1 if the CEO and Chairman positions are not separate, 0 otherwise. *CEOBONUS*: Dummy variable equal to 1 if the CEO receives performance-related bonus pay, 0 otherwise. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *Age*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board

licly-listed US insurers by Aghigbe and Whyte (2012). This observation further reflects the greater size and mix of ownership in our data set. The average age of insurers in our sample is around 46 years and on average 70% of shares in issue are held by the top 3 shareholders. Non-executive directors represent on average 61% of board members in our sample.

Table 3 presents the PCA results. In panel A of Table 3, we report the correlation matrix for the eight CEO traits that we use to compute our two CEO power indices. Not surprisingly, the existence of CEO stock ownership (*INSIDE*) and the CEO being an important

Table 3 Principal Component Analysis for the CEO Managerial Ability and CEO Entrenchment Indexes

Panel A: Correlation Matrix

	CEOPAY	*CEOOWN*	*CEOEXPERT*	*CEOINS*	*INSIDE*	*CEOTEN*	*CEODUAL*	*CEOBONUS*
CEOPAY	1							
CEOOWN	0.01	1						
CEOEXPERT	0.04	0.18***	1					
CEOINS	-0.14***	0.26***	0.40***	1				
INSIDE	0.01	0.98***	0.19***	0.26***	1			
CEOTEN	0.07*	0.10***	0.00	0.14***	0.11***	1		
CEODUAL	-0.10**	0.00	-0.06	-0.10**	0.03	-0.11***	1	
CEOBONUS	0.02	0.10**	-0.06*	-0.00	0.07*	0.07*	-0.53***	1

Panel B: CEO Power Index Weight

Managerial Ability	-0.11	0.47	0.59	0.65				
Entrenchment					0.10	0.23	-0.68	0.69

Panel C: Descriptive Statistics for the CEO Power Indexes

	Mean	Median	S.D	Min	Max
Managerial Ability	0	0.41	1.26	-2.23	1.93
Entrenchment	0	0.35	1.25	-4.64	2.01

Note: This table provides the results of the principal component analysis (PCA), which is used to create the *CEO Managerial Ability* index and the *CEO Entrenchment* index. Panel A reports the correlation coefficients. $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$. Panel B reports the weight of each component in the CEO Indices, and Panel C provides the descriptive statistics for the CEO indices. *CEOPAY*: Annual value of total compensation the CEO received (including salary, cash bonuses and other benefits) divided by the total annual compensation of all directors on the board. *CEOOWN*: Dummy variable equal to 1 if the CEO is also a major shareholder of the company (i.e., with the ownership level greater than 3%), 0 otherwise. *CEOEXPERT*: Dummy variable equal to 1 if the CEO is a professionally qualified accountant, actuary or underwriter, 0 otherwise. *CEOINS*: Dummy variable equal to 1 if the CEO has an insurance background, 0 otherwise. *INSIDE*: Dummy variable equal to 1 for the existence of managerial share scheme, 0 otherwise. *CEOTEN*: Number of years the CEO has been in position. *CEODUAL*: Dummy variable equal to 1 if the CEO and Chairman positions are not separate, 0 otherwise. *CEOBONUS*: Dummy variable equal to 1 if the CEO receives performance-related bonus pay, 0 otherwise. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment

shareholder (*CEOOWN*) are highly correlated.[9] However, very high correlations between each of the other CEO attributes are not observed. This implies that most of our trait variables capture the managerial ability and entrenchment aspects of CEO power. In panel B of Table 3, we report the rotated principal component weights for our two CEO power indices. We find that the *CEO Managerial Ability* index is mainly driven by *CEOOWN*, *CEOEXPERT* and *CEOINS*. The *CEO Entrenchment* index is mainly influenced by *CEOBONUS*,

[9] To allay concerns regarding the high correlation between *INSIDE* and *CEOOWN* shown in Table 3, we exclude *CEOOWN* from our PCA construct for the *CEO Decision Ability* index in sensitivity tests. However, our results are unchanged.

but blunted by *CEODUAL*. Panel C of Table 3 shows the descriptive statistics for the two CEO power indices. The median values are 0.41 for *CEO Managerial Ability* index and 0.35 for *CEO Entrenchment* index (with mean values = 0 for both indices).

Table 4 reports the Pearson correlation coefficients between each of our dependent and independent variables. We find that whilst many correlation coefficients are statistically significant (at $p \leq 0.05$ or lower, two-tail), the magnitude of most associations are modest, suggesting that multicollinearity is not a serious concern. However, we note a negative (-0.41) correlation between CEO entrenchment and ownership concentration (*CONC*), implying that for most of the firms in our UK sample (i.e., privately-held insurers) CEOs are less likely to be entrenched in firms with high ownership concentration. In addition, we compute variance inflation factors (VIFs) for all of our independent variables. All VIF values are below 10, again indicating that bias due to multicollinearity is unlikely to be problematical in the present study (Kennedy 2003).

4.2 Tobit/cragg model results

In Table 5, we report the pooled tobit regression results (with firm fixed effects) for the determinants of the dividend-earnings ratio (*DIVEARN*). They show that CEO managerial ability is not associated with dividends, whereas entrenched CEOs tend to pay less dividends, before accounting for the mediating-effects of reinsurance. The interaction terms *CEO Managerial Ability* x *REINS* relating to H1 are not statistically significant. However, as predicted by H2, *CEO Entrenchment* x *REINS is* positively linked with *DIVEARN* (at $p \leq 0.01$, two-tail). In economic terms this means that the interaction of reinsurance with CEO entrenchment improves our dividend ratios by about 5%[10]. The more reinsurance purchased, the greater the likelihood that entrenched CEOs will pay dividends. Therefore, reinsurance is an important intervening mechanism that allows entrenched CEOs to pay dividends to investors in order to avoid external shareholder monitoring, yet meet the financial strength expectations of other key stakeholders, (e.g., policyholders and industry regulators).

Table 6 presents the Cragg model results, including the first-stage probit estimates for the propensity to declare dividends and the second-stage truncated regressions for the intensity of dividend payments. Table 5 indicates that in the probit analysis, our two CEO power indices of interest, and their interaction with reinsurance, do not affect the probability of dividends being paid. However, the coefficient estimates for *CEO Entrenchment* and *CEO Entrenchment* x *REINS* have statistically significant effects on the amount of dividends paid (at $p \leq 0.10$ or lower, two-tail); plus the coefficient estimates carry the same signs as in the tobit analysis.

Tables 5 and 6 show that firm-level characteristics can also affect dividend policy. There is evidence to suggest that *REINS* is positively related with dividend intensity in both Tobit and Cragg regressions, but it is not related to the probability of an insurer declaring dividends in the first place. We find that board size (*BSIZE*), insurers with better financial performance (e.g., higher margin (*MARGIN*) and lower leverage (*SOL*) are in general not strongly associated with dividends. In addition, and again consistent with our expectations, larger insurers have a greater likelihood of paying dividends, but they do not necessarily

[10] These percentages are derived from multiplying the coefficient estimates for *Entrenchment* x *REINS* in Table 5 (columns 3 and 4) by the respective standard deviations of *Entrenchment* and *REINS* given in Table 2.

Table 4 Correlation Matrix

	DIVEARN	*Managerial Ability*	*Entrenchment*	*REINS*	*BSIZE*	*MARGIN*	*SOL*	*SIZE*	*LIST*	*LIQUIDITY*	*PREDIV*	*AGE*	*CONC*
Managerial Ability	0.32*												
Entrenchment	0.14*	0.11*											
REINS	0.24*	-0.11*	0.04										
BSIZE	0.32*	0.43*	0.19*	0.04									
MARGIN	0.18*	0.38*	0.08*	0.04	0.23*								
SOL	-0.10*	-0.14*	-0.10*	0.25*	0.00	-0.11*							
SIZE	0.53*	0.50*	0.11*	-0.05	0.60*	0.29*	-0.06						
LIST	0.51*	0.48*	0.00	-0.11*	0.49*	0.25*	-0.06	0.83*					
LIQUIDITY	0.05	-0.00	-0.10*	0.08*	0.05	0.08*	-0.17*	0.15*	0.15*				
PREDIV	0.79*	0.34*	0.13*	0.01	0.32*	0.12*	-0.19*	0.49*	0.45*	0.03			
AGE	0.15*	0.09*	0.21*	-0.21*	0.21*	0.08*	-0.19*	0.28*	0.24*	0.07*	0.20*		
CONC	-0.07*	0.02	-0.41*	0.11*	0.05	0.09*	0.09*	0.07*	0.09*	0.18*	-0.08*	-0.17*	
NED	0.08*	0.22*	0.32*	-0.05	0.39*	0.23*	-0.08*	0.11*	0.08*	-0.10*	0.15*	0.10*	-0.11*

Note: Table 4 presents Pearson correlation coefficients for the matrix between dependent and independent variables used in this study for the whole sample in the period 1999–2013. * indicates statistical significance at the 5% level in two-tail tests. *DIVEARN*: Dividend paid÷Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board

have a higher payout ratio. This suggests that small insurers may make above market average dividend payouts to retain and attract investors. This is particularly likely to be the case when equity markets are highly competitive across industrial sectors and amongst peer firms (Adhikari and Agrawal 2018). As expected, insurers that pay dividends in prior years have both a greater propensity to declare dividends, and pay higher dividends to investors, as the estimated coefficients for *PREDIV* are generally positive and statistically significant in all regressions (at $p \leq 0.10$ or lower, two-tail). This finding accords with previous studies (e.g., Akhigbe and Whyte 2012), that find that once dividends are declared, they are subsequently difficult to reverse because of the possible negative signalling effects that such action might convey to the market. We also observe that dividend policy does not significantly differ between publicly-listed and private insurance firms. Increasing non-executive directors do not affect an insurer's dividend policies.

4.3 Robustness tests

As noted earlier, we also perform GMM-SYS, 2SLS and 3SLS approaches to check the robustness of our findings to endogeneity. We report the results in Tables 6, 7 and 8 below.

First, we apply the Arellano and Bond (1991) and Arellano and Bover (1995) first-difference estimator using GMM-SYS, which is robust to heteroscedasticity and correlation in the error term. Specifically, we use lagged values of potentially endogenous variables, namely - *DIVEQ* (or *DIVEARN*), *CEO Decision Discretion*, *CEO Entrenchment*, *REINS*, *CEO Decision Discretion* x *REINS*, *CEO Entrenchment* x *REINS*, *MARGIN*, and *SOL* - as instruments in the first-difference equation. Table 7 presents the GMM-SYS results (plus relevant diagnostics), which are similar to those reported in Tables 5 and 6. Given that both the baseline and the GMM-SYS results suggest that the *CEO Managerial Ability index* and its interaction with reinsurance do not significantly impact on dividends, we drop these two variables in order to simplify subsequent analysis.

We now turn to the 2SLS results as reported in Table 8. To address the possibility that CEO entrenchment may be endogenous, we use *CEO Turnover* (i.e., a dummy variable equal to 1 if a new CEO is appointed in the year, 0 otherwise) as an instrument for CEO entrenchment. Intuitively, *CEO Turnover* is likely to have a (negative) bearing on entrenchment, but less likely to directly impact on dividends (thereby, not violating the exclusion restriction). In addition, if CEO entrenchment is endogenous, then our other main variable of interest - *CEO Entrenchment* x *REINS* - is also endogenous because it is an interaction between an endogenous variable and an exogenous variable (Wooldridge 2002). Accordingly, the natural instrument for *CEO Entrenchment* x *REINS* is *CEO Turnover* x *REINS*. In the first-stage, we regress each of two endogenous variables (i.e., *CEO Entrenchment* and *CEO Entrenchment* x *REINS*) on their IVs, and the firm-specific control variables. Next, we re-estimate the regressions after replacing each endogenous variable with its predicted value from the first-stage estimation. The second-stage 2SLS results indicate a negative relation between the *CEO Entrenchment* index and the dividend payout ratio, and a positive relation between the *CEO Entrenchment-REINS* interaction and the dividend payout ratio. These findings accord with the baseline analysis reported above.

Given the possibility of simultaneous determinants affecting our two dividend ratios, CEO entrenchment, firm performance, and reinsurance, we also run 3SLS models. In estimating the 3SLS models incorporating *MARGIN* and *SOL*, we enter the *CEO Managerial*

Ability index and its interaction with reinsurance as it is plausible that they directly influence to financial outcomes. In the equation on reinsurance (*REINS*), we add *CEO Managerial Ability*, plus two new firm-related variables - *Loss Ratio* (total incurred claims/total net earned premiums) and *PMIX* (Herfindahl index – the closer to 1 the more concentrated an insurer's product-mix) - that could affect the amount of reinsurance purchased. The findings reported in Table 9 are again consistent with those noted earlier in that entrenched CEOs are less likely to pay dividends. However, when insurers are highly reinsured, entrenched CEOs tend to pay dividends in order to reduce the overall risk and costs of close outside monitoring.

We also examine whether or not the 2007/9 global financial crisis (GFC) had a significant impact on the relation between CEO entrenchment, its interaction with reinsurance, and dividends. Caliskan and Doukas (2015) note that in the wake of the 2007/9 GFC, investors developed a preference for dividends given the enhanced level of market uncertainty over future corporate growth opportunities. Acharya et al. (2017) further argue that in macro-economic crises, the managers (CEOs) of financial firms in highly levered (low franchise value) states could be motivated to use dividend policy to transfer wealth from fixed to residual claimants.[11] Therefore, to examine the effects of the 2007/9 GFC on our baseline results, we first include in our Cragg models an indicator (dummy) variable (*Y0710*) for the 2007/9 GFC years and its immediate aftermath (years 2007–2010). We then interacted this indicator variable with our *CEO Entrenchment* index, reinsurance, and their interaction. While *Y0710* captures the general effect of the GFC on dividend policy, its interaction with CEO entrenchment and reinsurance captures the incremental effect for reinsurance on the CEO entrenchment, and dividend policy during crisis period. We also replicate the analysis using an alternative indicator variable (*Y0810*) for the GFC and its immediate aftermath (years 2008 to 2010). In addition, we perform a sub-period analysis for the GFC period by focusing on the individual years 2007 (Y2007 = 1 for the year 2007, 0 otherwise) and 2008 (Y2008 = 1 for the year 2008, 0 otherwise).

Table 10 presents the Cragg model results, including the first-stage probit estimates for dividend propensity and second-stage truncated regressions for dividend intensity. Outside of the GFC period, the *CEO Entrenchment* index and *CEO Entrenchment* x *REINS*, have no statistically significant impact on the probability of dividends being paid in the first-stage and second-stage probit regressions. In the second-stage truncated regressions for dividend intensity, the interactions between the GFC period indicator and CEO entrenchment are significantly negative (at $p \leq 0.05$ or lower, two-tail). In addition, the interactions between the GFC dummy and *CEO Entrenchment* x *REINS* are significantly positive (at $p \leq 0.10$, two-tail) (except for when using *Y2008* as an indicator although it has the expected sign). Not surprisingly, our results suggest that the benign effect of reinsurance on the CEO entrenchment-dividend relation was stronger during the economic turmoil of the 2007/9 GFC.

In untabulated results, we only retained private insurers in our panel sample (with 774 observations), given that publicly-listed insurance firms can have capital market incentives to regularly pay dividends that private insurers do not have - for example due to the 'over-the-counter' nature of their shareholdings (e.g., see Michaely and Roberts, 2016). We still observe negative estimated coefficients for *CEO Entrenchment* and positive coefficient estimates for the interaction term *CEO Entrenchment* x *REINS* ($p \leq 0.05$, two tail). Taken

[11] Liao et al. (2023) report that CEO extraversion places a negative effect on corporate performance during the GFC.

Table 5 Determinants of Dividends – Main Tobit Results

	(1)	(2)	(3)	(4)
VARIABLES	*DIV/EARN*	*DIV/EARN*	*DIV/EARN*	*DIV/EARN*
Managerial Ability		-0.01		0.03
		(-0.42)		(1.02)
Entrenchment			-0.19***	-0.19***
			(-6.15)	(-6.24)
REINS	0.86***	0.84***	0.17	0.18
	(11.61)	(10.05)	(1.35)	(1.43)
Managerial Ability x *REINS*		0.04		-0.11
		(0.36)		(-1.11)
Entrenchment x *REINS*			0.61***	0.64***
			(6.40)	(6.50)
BSIZE	-0.00	-0.00	0.00	0.00
	(-0.75)	(-0.77)	(0.03)	(0.27)
MARGIN	0.10	0.11	-0.02	-0.00
	(0.76)	(0.83)	(-0.12)	(-0.03)
SOL	-0.10	-0.10	-0.13*	-0.13*
	(-1.38)	(-1.45)	(-1.90)	(-1.88)
SIZE	0.01*	0.01*	0.02***	0.02***
	(1.69)	(1.76)	(2.65)	(2.59)
LIST	0.10***	0.10***	0.04*	0.04
	(4.53)	(4.56)	(1.72)	(1.52)
LIQUIDITY	-0.27**	-0.28**	-0.21*	-0.21*
	(-2.10)	(-2.14)	(-1.77)	(-1.75)
PREDIV	0.44***	0.44***	0.43***	0.43***
	(27.05)	(26.95)	(27.75)	(27.59)
AGE	0.00	0.00	0.00	0.00
	(0.61)	(0.51)	(0.69)	(0.89)
CONC	-0.09***	-0.08***	-0.05	-0.05
	(-2.88)	(-2.84)	(-1.62)	(-1.53)
NED	-0.07	-0.07	-0.12	-0.12
	(-0.85)	(-0.85)	(-1.52)	(-1.51)
Constant	-0.83	-0.84	-0.60	-0.62
	(-0.04)	(-0.03)	(-0.03)	(-0.03)
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Observations	967	967	967	967
Prob > F	0	0	0	0

Note: This table presents the results of using a pooled Tobit regression left censored at zero for the determinants of dividend payouts for UK stock insurers between 1999 and 2013. The dependent variable in the Tobit regressions is the dividend payout level scaled by earnings. All regressions include year fixed and firm fixed effects. *DIVEARN*: Dividend paid ÷ Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes) ÷ gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital + reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash + short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board. Reported in parentheses are t-statistics. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Table 6 Determinants of Dividends – Cragg Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	1st Stage	2nd Stage	1st Stage	2nd Stage	1st Stage	2nd Stage
	DIVDUM	*DIV/EARN*	*DIVDUM*	*DIV/EARN*	*DIVDUM*	*DIV/EARN*
Managerial Ability	0.23	0.04			0.22	0.06
	(0.53)	(0.53)			(0.44)	(1.04)
Entrenchment			0.11	-0.21***	-0.01	-0.22***
			(0.23)	(-3.85)	(-0.01)	(-4.04)
REINS	-0.76	0.97***	-0.61	0.10	-1.02	0.17
	(-0.63)	(4.15)	(-0.33)	(0.36)	(-0.54)	(0.52)
Managerial Ability × *REINS*	-0.89	-0.12			-0.88	-0.22
	(-0.65)	(-0.57)			(-0.55)	(-1.13)
Entrenchment × *REINS*			-0.15	0.68***	0.21	0.71***
			(-0.10)	(4.11)	(0.11)	(4.24)
BSIZE	-0.13**	0.00	-0.13**	0.01	-0.13**	0.01
	(-2.01)	(0.41)	(-2.11)	(0.84)	(-1.98)	(1.00)
MARGIN	1.21	-0.13	1.03	-0.23	1.28	-0.24
	(1.19)	(-0.50)	(1.00)	(-1.05)	(1.21)	(-0.95)
SOL	-1.38	-0.05	-1.34	-0.09	-1.40	-0.10
	(-1.40)	(-0.30)	(-1.35)	(-0.60)	(-1.42)	(-0.67)
SIZE	0.32***	0.00	0.31**	0.01	0.33***	0.01
	(2.63)	(0.26)	(2.49)	(0.81)	(2.66)	(0.78)
LIST	0.53	0.10	0.56	0.03	0.51	0.02
	(1.33)	(1.61)	(1.41)	(0.45)	(1.17)	(0.34)
LIQUIDITY	-1.19	-0.26	-0.99	-0.21	-1.08	-0.23
	(-0.65)	(-0.64)	(-0.51)	(-0.59)	(-0.58)	(-0.65)
PREDIV	4.42***	0.04*	4.39***	0.03*	4.42***	0.03*
	(10.59)	(1.91)	(10.66)	(1.89)	(10.67)	(1.72)
AGE	0.00	0.00	0.00	0.00	0.00	0.00
	(1.28)	(0.20)	(1.17)	(0.14)	(1.19)	(0.31)
CONC	-0.58	-0.06	-0.46	-0.03	-0.50	-0.01
	(-1.37)	(-0.60)	(-0.98)	(-0.24)	(-1.08)	(-0.11)
NED	0.84	-0.15	0.73	-0.20	0.68	-0.20
	(0.82)	(-0.82)	(0.69)	(-1.09)	(0.62)	(-1.12)
Constant	-1.48	0.05	-1.44	0.31	-1.38	0.27
	(-1.20)	(0.27)	(-1.07)	(1.55)	(-1.00)	(1.47)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 6 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Observations	967	967	967	967	967	967
Prob $>\chi^2$	0		0		0	

Note: This table presents pooled Cragg regression results for the determinants of dividend payouts for UK stock insurers between 1999 and 2013. The dependent variable in the first-stage of the Cragg regression is whether or not a firm pays cash dividends in the year; the dependent variable in the second-stage is the dividend payout level scaled by earnings. All regressions include year dummies as control variables. Reported in parentheses are t-statistics computed using standard errors clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests. *DIVDUM*: Dummy variable equal to 1 if a cash dividend is paid, 0 otherwise. *DIVEARN*: Dividend paid÷Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board

together, the tenor of our baseline results does not change as a result of these robustness tests.

4.4 Earnings prediction tests

In this section, we test the predictions that the signalling effects of dividends with respect to future earnings only exist for insurers with high ability CEOs, whereas dividends have no signalling effects on future earnings for low ability CEOs, or entrenched CEOs. We estimate the following regression:

$$ROA_{i,t+1} = a_0 + a_1 DP_{i,t} + a_2 REINS_{i,t} + a_3 ROA_{i,t} + a_4 DP_{i,t} \times ROA_{i,t} + a_5 REINS_{i,t} \times ROA_{i,t} + {}_{i,t} \quad (2)$$

where $ROA_{i,t+1}$ is one-year-ahead deflated earnings and $ROA_{i,t}$ is deflated earnings. $DP_{i,t}$ is an indicator variable set to 1if a firm pays dividends in the year (*DIVDUM*). Alternatively, it is equal to 1 if a firm pays high dividends (i.e., above the median for dividend-paying insurers) and 0 otherwise (*HIGHPAY*). In this regression, a_4 measures the persistence of earnings. Under the hypothesis that CEOs with higher managerial ability are more likely to generate sustainable earnings and therefore, could signal their type by paying dividends with the information content about future earnings, we expect the coefficient estimate on earnings to be positive and significant for firms that pay (higher) dividends in the subsample of insurers with talented CEOs. However, we do not expect to see the signalling effects of dividends in the subsample of insurers with less able CEOs. Neither do we expect to see the signalling effects of dividends for future earnings being conditioned on the CEO entrenchment score.

We report the results in Table 11. Consistent with our predictions, the estimated coefficients for *DIVDUM* x *ROA* and *HIGHPAY* x *ROA* are positive and statistically significant (at $p \leq 0.05$) for the subsample of insurers with talented CEOs, but not for other subsample groups. These results provide clear evidence that when CEOs with higher managerial ability

Table 7 Determinants of Dividends – GMM-SYS

	(1)	(2)	(3)
	DIV/EARN	*DIV/EARN*	*DIV/EARN*
Managerial Ability	0.01		0.02
	(0.41)		(0.46)
Entrenchment		-0.09**	-0.07
		(-2.04)	(-1.62)
REINS	0.31	0.27	0.43**
	(1.64)	(1.40)	(2.44)
Managerial Ability x REINS	-0.08		-0.07
	(-0.76)		(-0.58)
Entrenchment x REINS		0.34***	0.28**
		(2.84)	(2.36)
BSIZE	0.01*	0.00	0.01
	(1.72)	(0.83)	(1.35)
MARGIN	0.21*	0.08	0.09
	(1.85)	(1.01)	(0.99)
SOL	-0.00	0.02	-0.04
	(-0.04)	(0.30)	(-0.59)
SIZE	0.00	0.00	-0.00
	(0.21)	(0.00)	(-0.37)
LIST	0.10**	0.09*	0.11**
	(2.43)	(1.92)	(2.39)
LIQUIDITY	-0.17	-0.26	-0.21
	(-1.09)	(-1.64)	(-1.41)
PREDIV	0.26***	0.24***	0.25***
	(16.35)	(14.21)	(16.00)
AGE	-0.00	-0.00	-0.00
	(-1.53)	(-0.75)	(-0.40)
CONC	-0.06	0.01	0.00
	(-1.59)	(0.17)	(0.01)
NED	-0.07	-0.12*	-0.18***
	(-1.36)	(-1.80)	(-3.05)
Constant	-0.07	-0.03	-0.01
	(-0.63)	(-0.32)	(-0.12)
Year Fixed Effects	Yes	Yes	Yes
AR(1) p value	0	0	0
AR(2) p value	0.77	0.84	0.85
Difference-in-Hansen Test p value	0.8	0.54	0.39

Table 7 (continued)

	(1)	(2)	(3)
Observations	967	967	967
Lag Range Used	1–2	1–2	1–2

Note: This table reports the two-step GMM-SYS estimator with the robust adjustment for small samples. The t-statistics are reported in parentheses, while ***, **,* indicate statistical significance at the 1%, 5% and10% levels respectively in two-tail tests. The lags of variables including *DIV/EARN*, *CEO Index*, *REINS*, *CEO Index* × *REINS*, are used as their instruments to control for potential endogeneity. The values reported for the Difference-in-Hansen test are the p-values (two-tail) for the null hypothesis of the validity of the instruments. AR(1) and AR(2) report the p-values (two-tail) for first-order and second-order auto-correlated disturbances in the first-difference equations. *DIVEARN*: Dividend paid ÷ Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes) ÷ gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital + reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash + short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board

pay dividends or high dividends, such CEOs are confident in their ability to sustain future earnings, and therefore the dividends serve as a signal for future earnings rather than a catering mechanism for the demand of investors to avoid external shareholder monitoring.

5 Conclusion

In this paper, we examine the effects of risk management, and the managerial ability versus entrenchment sources of CEO power on (cash-based) dividends in the UK's property-casualty insurance industry. We find that entrenched CEOs reduce dividends to protect liquidity and maintain statutory minimum levels of solvency, and so avoid the disruption and reputational costs/risks of regulatory intervention. However, after testing for the mediating-effect of reinsurance, we find that entrenched CEOs in insurance firms are more likely to pay dividends than CEOs with high decision-making discretion. This finding highlights the commercial and regulatory importance of risk management (e.g., (re)insurance) in curtailing excessive risk-taking and risk-shifting by entrenched CEOs through dividend policy. However, we neither find CEO managerial ability nor its interaction with reinsurance to be related to dividends, suggesting the complicated incentives of more able CEOs to pay more/less dividends cancel out in cross-sectional tests. Nonetheless, in our earnings prediction tests, we find that the dividend signalling effects for future earnings only exist in the subsample of insurers with more able CEOs. Therefore, when more able CEOs choose to pay (high) dividends, they do so to signal their type as they are confident about their ability to generate sustainable earnings in the future.

We acknowledge that our study has limitations, such as the relatively small sample of UK insurers used (1,024 data points). Nonetheless, we mitigate such limitations by using a dynamic (unbalanced) panel data design (1999 to 2013) and conducting robustness tests to check the consistency and reliability of our findings. We consider that our research contributes to the literature by demonstrating that risk management aligns the interests of entrenched CEOs with those of investors, and other key stakeholders. That is, the interde-

Table 8 Determinants of Dividends – 2SLS Regressions

	(1)	(2)	(3)
	1st Stage		2nd Stage
VARIABLES	*Entrenchment*	*Entrenchment x REINS*	*DIVEARN*
Entrenchment			-0.21***
			(-3.15)
REINS			0.03
			(0.16)
Entrenchment x REINS			0.70***
			(3.61)
BSIZE	0.06**	0.02**	0.00
	(2.37)	(2.07)	(1.32)
MARGIN	1.14	0.68***	-0.08
	(1.54)	(2.79)	(-1.04)
SOL	-0.33	0.14	-0.07*
	(-0.83)	(1.03)	(-1.65)
SIZE	0.12***	0.03**	0.01
	(2.94)	(2.40)	(1.24)
LIST	-0.71***	-0.18***	0.05**
	(-4.45)	(-3.43)	(2.03)
LIQUIDITY	-0.62	-0.07	-0.09
	(-0.87)	(-0.31)	(-1.30)
PREDIV	0.07	0.04	0.24***
	(0.85)	(1.48)	(34.39)
AGE	0.00***	0.00**	0.00
	(3.61)	(2.17)	(0.39)
CONC	-2.02***	-0.65***	0.00
	(-12.35)	(-12.07)	(0.03)
NED	3.52***	1.14***	-0.15
	(7.48)	(7.28)	(-1.48)
CEO Turnover	-0.35***		
	(-3.53)		
CEO Turnover x REINS		-0.36***	
		(-3.40)	
Constant	-1.30**	-0.58***	0.10
	(-2.54)	(-3.42)	(1.18)
Year Fixed Effects	Yes	Yes	Yes
Observations	967	967	967
R-squared	0.31	0.29	0.76

Note: This table presents the 2SLS results for the determinants of dividend payouts for UK stock insurers between 1999 and 2013. CEO Turnover is used as an instrument for CEO entrenchment. *CEO Turnover* is a dummy variable equal to 1 if a new CEO is appointed in the year, 0 otherwise. *DIVEARN*: Dividend paid÷Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board. Reported in parentheses are t-statistics adjusted for small sample. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Table 9 Determinants of Dividends – 3SLS Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	*DIV/EARN*	*Entrenchment*	*Entrenchment x REINS*	*MARGIN*	*SOL*	*REINS*
Entrenchment	-0.44***			-0.23***	-0.04	0.00
	(-5.17)			(-4.53)	(-0.61)	(0.09)
REINS	0.18			-0.20	0.26	
	(0.82)			(-1.30)	(1.40)	
Entrenchment x REINS	1.33***			0.80***	0.16	
	(5.09)			(4.30)	(0.61)	
BSIZE	0.02***	0.08***	0.02*	0.01***	0.00	
	(3.71)	(2.99)	(1.84)	(3.20)	(0.21)	
MARGIN	-1.47***	0.81	1.05			-6.55
	(-3.51)	(0.35)	(1.45)			(-1.52)
SOL	-1.89***	-4.39***	0.01			1.95**
	(-2.70)	(-3.28)	(0.01)			(2.04)
SIZE	0.02***	0.12***	0.04***	0.01***	-0.01	0.02
	(2.87)	(2.83)	(2.67)	(2.59)	(-1.63)	(1.58)
LIST	0.02	-0.68***	-0.17***	0.03	-0.05	
	(0.76)	(-4.25)	(-3.26)	(1.07)	(-1.33)	
LIQUIDITY	-0.51*	-1.56*	-0.43*			0.58
	(-1.91)	(-1.88)	(-1.66)			(1.22)
PREDIV	0.19***			0.23***	-0.18**	
	(6.23)			(4.10)	(-2.50)	
AGE	-0.00	0.00	0.00*	0.00	-0.00	0.00
	(-1.15)	(1.60)	(1.85)	(1.00)	(-1.08)	(1.20)
CONC	-0.00	-1.92***	-0.66***	0.03	0.06	0.07
	(-0.05)	(-10.75)	(-11.59)	(0.74)	(1.04)	(0.61)
NED	-0.08	3.03***	1.07***	-0.05	-0.10	0.95
	(-0.87)	(5.14)	(5.71)	(-0.67)	(-0.93)	(1.33)
CEO Turnover		-0.24***				
		(-2.69)				
CEO Turnover x REINS			-0.22**			
			(-2.40)			
Managerial Ability				0.04	-0.01	0.09
				(1.01)	(-0.27)	(1.47)
Managerial Ability x REINS				-0.11	0.04	
				(-0.91)	-0.36	
Loss Ratio						-1.21*
						(-1.65)
PMIX						0.08
						(1.17)
DIV/EARNINGS				-0.94***	0.74***	-0.10
				(-4.43)	(2.61)	(-1.14)
Constant	1.28***	1.81	-0.42	0.05	0.66***	-0.51
	(2.66)	(1.61)	(-1.17)	(0.79)	(7.48)	(-1.05)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 9 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Observations	967	967	967	967	967	967
R-squared	-0.02	0.23	0.28	-2.32	-0.84	-23.19

Note: This table presents the 3SLS results for UK stock insurers between 1999 and 2013. *DIVEARN*: Dividend paid÷Net operating profit after tax. *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board. *CEO Turnover* is a dummy variable equal to 1 if a new CEO is appointed in the year, 0 otherwise. *Loss Ratio* is measured as total incurred (paid+reserved) claims/total earned premiums. *PMIX* is the Herfindahl index that is closer to 1 the more concentrated the product-mix. Reported in parentheses are t-statistics adjusted for small sample. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests

pendency of reinsurance (and indeed, commercial insurance) and dividend policy can be value enhancing even when entrenched CEOs impose overt or hidden agency costs and high business risks on the firms that they manage. Observationally, entrenched CEOs appear to be common in technically complex and heavily regulated financial firms.

Our results could also shed light on why indemnity (commercial) insurance hedges are financially significant and all-pervasive in wider corporate contexts. Yet, surprisingly the strategic use of commercial (re)insurance is under-researched in the wider accounting and finance literature. Our research could thus encourage scholars to address this situation. Finally, our research has potential commercial and policy appeal. For example, our research could inform future policy initiatives regarding advised or prescribed minimum levels of (re)insurance to be held by firms with entrenched CEOs that regularly pay dividends. The results of our study could also be extended to emergent economies (e.g., China), which are currently developing their systems of financial regulation, including dividend rules, for insurers, banks, and other corporate entities.

Table 10 Determinants of Dividends during 2007/9 Global Financial Crisis – Cragg Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DIVDUM	*DIV/EARN*	*DIVDUM*	*DIV/EARN*	*DIVDUM*	*DIV/EARN*	*DIVDUM*	*DIV/EARN*
Entrenchment	0.39	-0.19***	0.24	-0.20***	0.38	-0.19***	0.29	-0.19***
	(0.93)	(-3.50)	(0.58)	(-3.50)	(0.97)	(-3.57)	(0.70)	(-3.52)
REINS	0.09	0.17	0.00	0.16	-0.01	0.16	0.24	0.16
	(0.06)	(0.57)	(0.00)	(0.53)	(-0.01)	(0.57)	(0.14)	(0.56)
Entrenchment x REINS	-1.12	0.62***	-0.67	0.64***	-1.02	0.62***	-0.81	0.63***
	(-0.84)	(3.70)	(-0.50)	(3.69)	(-0.80)	(3.74)	(-0.61)	(3.69)
Entrenchment x Y0710	-1.00	-0.03*						
	(-1.31)	(-1.70)						
REINS x Y0710	-1.61***	-0.13***						
	(-2.82)	(-5.50)						
Entrenchment x REINS x Y0710	3.23	0.12**						
	(1.31)	(2.20)						
Entrenchment x Y0810			-0.30	-0.02				
			(-0.67)	(-1.20)				
REINS x Y0810			-0.57	-0.12***				
			(-0.74)	(-4.90)				
Entrenchment x REINS x Y0810			1.18	0.09				
			(0.77)	(1.59)				
Entrenchment x Y2007					-2.04	-0.05**		
					(-1.39)	(-2.16)		
REINS x Y2007					-2.98***	-0.09***		
					(-2.64)	(-3.01)		
Entrenchment x REINS x Y2007					5.88	0.17**		
					(1.23)	(2.45)		
Entrenchment x Y2008							-0.74	-0.02
							(-1.47)	(-1.43)
REINS x Y2008							-3.03**	-0.07**

Table 10 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							(-1.99)	(-2.27)
Entrenchment x REINS x Y2008							2.32*	0.08**
							(1.77)	(1.98)
BSIZE	-0.08**	0	-0.11**	0	-0.11***	-0.01	-0.10**	-0.01
	(-2.05)	(-0.71)	(-2.53)	(-0.78)	(-2.87)	(-1.14)	(-2.58)	(-1.13)
MARGIN	0.97	-0.13	1.18	-0.14	1.37	-0.09	1.1	-0.09
	-0.85	(-0.54)	-1.06	(-0.56)	-1.26	(-0.35)	-0.98	(-0.37)
SOL	-1.01	-0.1	-0.82	-0.09	-0.81	-0.09	-0.99	-0.09
	(-1.05)	(-0.62)	(-0.86)	(-0.57)	(-0.87)	(-0.54)	(-1.01)	(-0.51)
SIZE	0.27***	0.02	0.28***	0.02	0.28***	0.02	0.28***	0.02
	-2.58	-1.32	-2.76	-1.31	-2.66	-1.36	-2.75	-1.35
LIST	0.33	0.02	0.35	0.03	0.38	0.03	0.32	0.03
	-0.92	-0.34	-1	-0.38	-1.1	-0.39	-0.9	-0.41
LIQUIDITY	-1.51	-0.17	-1.33	-0.16	-1.23	-0.15	-1.46	-0.14
	(-0.89)	(-0.46)	(-0.78)	(-0.43)	(-0.71)	(-0.42)	(-0.85)	(-0.40)
PREDIV	3.60***	0.03	3.52***	0.02	3.68***	0.03	3.59***	0.03
	-14.47	-1.52	-14.29	-1.32	-13.19	-1.52	-14.11	-1.45
AGE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.10)	(0.04)	(0.94)	(0.05)	(0.98)	(0.00)	(1.09)	(0.01)
CONC	-0.58	-0.03	-0.57	-0.03	-0.52	-0.04	-0.63	-0.04
	(-1.38)	(-0.30)	(-1.36)	(-0.26)	(-1.27)	(-0.33)	(-1.41)	(-0.32)
NED	0.90	-0.27	0.80	-0.27	0.78	-0.30	0.92	-0.30
	(0.96)	(-1.40)	(0.85)	(-1.46)	(0.81)	(-1.60)	(0.98)	(-1.59)
Constant	-1.64	0.39**	-1.57	0.40**	-1.72	0.41**	-1.61	0.40**
	(-1.47)	(2.14)	(-1.39)	(2.16)	(-1.46)	(2.22)	(-1.42)	(2.20)

Table 10 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Observations	967		967		967		967	
Prob > chi2	0		0		0		0	

Note: This table presents the Cragg's Tobit regression results for the determinants of dividend payouts for stock insurers in the UK during the financial crisis. The dependent variable in the first stage of the Cragg's Tobit regression is whether or not a firm pays cash common dividends in the year; the dependent variable in the second stage is the payout level scaled by earnings. *Y0710* (*Y0810*) equals 1 for the financial years 2007–2010 (2008–2010) and 0 otherwise. *Y2007* (*Y2008*) equals 1 for the financial year 2007 (2008) and 0 otherwise. *DIVDUM*: Dummy variable equal to 1 if a cash dividend is paid, 0 otherwise. *DIVEARN*: Dividend paid÷Net operating profit after tax. *Entrenchment*: An index measuring CEO entrenchment. *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *BSIZE*: Board size - the total number of board members. *MARGIN*: Net profit margin - measured as earnings (after interest & taxes)÷gross premiums written. *SOL*: Solvency position (Leverage) - measured as 1-surplus (capital+reserves)/total assets. *SIZE*: The natural logarithm of total assets. *LIST*: Dummy variable equal to 1 if an insurer is publicly listed, 0 otherwise. *LIQUIDITY*: (Cash+short term deposits)/total assets. *PREDIV*: Dummy variable equal to 1 if an insurer paid dividends in the previous year, 0 otherwise. *AGE*: The number of years since a firm's establishment. *CONC*: % shares in issue held by the top 3 shareholders. *NED*: % non-executive directors on the board. Reported in parentheses are t-statistics clustered at the firm level. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Table 11 Earnings Persistence Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Managerial Ability		*Entrenchment*		*Managerial Ability*		*Entrenchment*	
	High	Low	High	Low	High	Low	High	Low
DIVDUM	-0.01**	0.00	-0.01	-0.00				
	(-2.58)	(0.47)	(-0.86)	(-0.74)				
HIGHPAY					-0.01*	0.00	-0.01	-0.00
					(-1.85)	(0.23)	(-0.87)	(-0.40)
REINS	0.05	0.06	0.05	0.16**	0.06	0.06	0.05	0.16**
	(1.20)	(0.88)	(1.15)	(2.40)	(1.37)	(0.89)	(1.20)	(2.45)
ROA	0.88***	0.94***	0.86***	1.42***	0.91***	0.94***	0.87***	1.44***
	(9.19)	(6.30)	(9.03)	(7.06)	(9.56)	(6.30)	(9.11)	(7.10)
DIVDUM × *ROA*	0.11**	-0.00	0.04	0.07				
	(2.44)	(-0.04)	(0.87)	(1.35)				
HIGHPAY × *ROA*					0.09**	0.01	0.05	0.05
					(2.02)	(0.20)	(1.10)	(0.96)
REINS × *ROA*	-0.34	-0.46	-0.30	-1.89***	-0.39	-0.48	-0.32	-1.91***
	(-1.25)	(-1.01)	(-1.03)	(-3.09)	(-1.41)	(-1.04)	(-1.11)	(-3.12)
Constant	0.01	0.00	0.01	-0.03	0.01	0.00	0.01	-0.04
	(1.00)	(0.09)	(0.71)	(-1.52)	(0.62)	(0.09)	(0.65)	(-1.59)
Observations	495	457	530	422	495	457	530	422
R-squared	0.74	0.67	0.68	0.74	0.74	0.67	0.68	0.74

Note: This table presents the OLS regression results of future earnings (one year ahead *ROA*) on current earnings (*ROA*), and its interaction with reinsurance and *DIVDUM* (a dummy equal to 1 if a firm pays dividends in the current year, 0 otherwise) or *HIGHPAY* (a dummy equal to 1 if a firm's dividend payout ratio is above the median for firms that pay dividends in the current year, 0 otherwise). *REINS*: Reinsurance ceded divided by gross written premiums (including inward reinsurance premium receipts). *Managerial Ability*: An index measuring CEO ability. *Entrenchment*: An index measuring CEO entrenchment. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Acknowledgements We appreciate the helpful suggestions of the editor, two referees, Alice Bonaime, Caleb Rawson, Fabio Braggion, Amedeo De Cesari, Paolo Fulghieri, Igor Goncharov, Vasso Ioannidou, Roni Michaely, Frank Moers, Ron Masulis, Konstantinos Stathopoulos, Andy Stark, Norman Strong, Martin Walker and Joe (Hong) Zou. The paper also benefited from the comments of conference and seminar participants at the American Accounting Association Annual Meeting (San Francisco), University of Manchester, University of Bristol, the Business Schools of Umeå and Uppsala Universities, and the Stockholm School of Economics.

Declarations

No funding was received to assist with the preparation of this manuscript. The authors have no relevant financial or non-financial interests to disclose.

References

Abdul Kader H, Adams M, Mouratidis K (2010) Testing for trade-offs in the reinsurance decision of U.K. life insurance firms. J Account Auditing Finance 25(3):491–522

Acharya VV, Le HT, Shin HS (2017) Bank capital and dividend externalities. Rev Financial Stud 30(1):988–1018

Adams R, Ferreira D (2007) A theory of friendly boards. J Finance 62(1):217–250

Adams MB, Jiang W (2016) Do outside directors influence the financial performance of risk-trading firms? Evidence from the United Kingdom (UK) insurance industry. J Bank Finance 64:36–51

Adams MB, Jiang W (2017) Do Chief Executives' traits affect the financial performance of risk-trading firms? Evidence from the UK insurance industry. Br J Manag 28(3):481–501

Adams MB, Jiang W (2020) Do financial experts on the board matter? An empirical test from the United Kingdom's non-life insurance industry. J Account Auditing Finance 35(1):168–195

Adams RB, Almeida H, Ferreira D (2005) Powerful CEOs and their impact on corporate performance. Rev Financial Stud 18(4):217–250

Adhikari BK, Agrawal A (2018) Peer influence on dividend policies. J Corp Finance 48:615–637

Agarwal R, Gort M (2002) Firm product life cycles and firm survival. Am Econ Rev 92(2):184–190

Akhigbe A, Whyte AM (2012) Does the use of stock incentives influence the payout policy of financial institutions. Q Rev Econ Finance 52(1):63–71

Akhigbe A, Borde SF, Madura J (1993) Dividend policy and signalling by insurance companies. J Risk Insurance 60(3):413–428

Al-Shaer H, Albitar K, Liu J (2023) CEO power and CSR-linked compensation for corporate environmental responsibility: UK evidence. Rev Quant Financ Acc 60:1025–1063

Arellano M, Bond S (1991) Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Rev Econ Stud 58(2):277–297

Arellano M, Bover O (1995) Another look at the instrumental variable estimation of error-components models. J Econ 68(1):29–51

Baker M, Wurgler J (2004) A catering theory of dividends. J Finance 59(3):1125–1165

Baldenius T, Melumad N, Meng X (2014) Board composition and CEO power. J Financ Econ 112(1):53–68

Berg T, Gider J (2017) What explains the difference in leverage between banks and nonbanks? J Financial Quant Anal 52(6):2677–2702

Berry-Stölzle TR, Nini GP, Wende S (2014) External financing in the life insurance industry: evidence from the financial crisis. J Risk Insurance 81(4):529–562

Bonaimé AA, Hankins KW, Harford J (2014) Financial flexibility, risk management, and payout choice. Rev Financial Stud 27(4):1074–1101

Brookman J, Thistle P (2009) CEO tenure, the risk of termination and firm value. J Corp Finance 15(3):331–344

Cadbury A (1992) Report of the Committee on the Financial Aspects of Corporate Governance. Gee Publishing, London

Caliskan D, Doukas JA (2015) CEO risk preferences and dividend policy decisions. J Corp Finance 35:18–42

Casamatta C, Guembel A (2010) Managerial legacies, entrenchment and strategic inertia. J Finance 65(6):2403–2436

Caskey J, Hanlon M (2013) Dividend policy at firms accused of accounting fraud. Contemp Acc Res 30(2):818–850

Cassar G, Gerakos J (2017) Do risk management practices work? Evidence from hedge funds. Rev Acc Stud 22(3):1084–1121

Chava S, Kumar P, Warga A (2010) Managerial agency and bond covenants. Rev Financial Stud 23(3):1120–1148

Chen B, Chen H, Chen H, Lin F (2022) Corporate growth and strategic payout policy. Rev Quant Financ Acc 59:641–669

Chu HL, Liu NY, Chiu SC (2023) CEO power and CSR: the moderating role of CEO characteristics. China Acc Finance Rev 25(1):101–121

Cole CR, McCullough KA (2006) A reexamination of the corporate demand for reinsurance. J Risk Insurance 73(1):169–192

Cornelli F, Kominek Z, Liungvist A (2014) Monitoring managers: does it matter? J Finance 68:431–481

de Andres P, Vallelado E (2008) Corporate governance in banking: the role of the board of directors. J Bank Finance 32(12):2570–2580

Dewing IP, Russell PO (2004) Regulation of UK corporate governance: Lessons from accounting, audit and financial services. Corp Governance: Int Rev 12(1):107–115

Dikolli SS, Mayhew WJ (2014) CEO turnover and the performance-turnover relation. Rev Acc Stud 19(1):281–327
Dionne G, Ouederni K (2011) Corporate risk management and dividend signaling theory. Finance Res Lett 8(4):188–195
Doherty NA, Tinic SM (1981) Reinsurance under conditions of capital market equilibrium: a note. J Finance 36(4):949–953
Easterbrook FH (1984) Two agency-cost explanations of dividends. Am Econ Rev 74(4):650–659
Farinha J (2003) Dividend policy, corporate governance, and the managerial entrenchment hypothesis: an empirical analysis. J Bus Finance Acc 30(9–10):1173–1209
Florackis C, Ozkan A (2009) The impact of managerial entrenchment on agency costs: an empirical investigation using UK panel data. Eur Financ Manag 15(4):497–528
Froot KA, O'Connell PGJ (2008) On the pricing of intermediated risks: theory and application to catastrophe reinsurance. J Bank Finance 32(1):69–85
Gaver JJ, Paterson JS (1999) Managing insurance company financial statements to meet regulatory and tax reporting goals. Contemp Acc Res 16(2):207–241
Golden J, Zheng K (2022) Cost management and corporate payout decisions. Rev Quant Financ Acc 58:911–938
Han S, Lai GC, Ho C-L (2018) Corporate transparency and reserve management: evidence from US property-liability insurance companies. J Bank Finance 96:379–392
Hankins KW (2011) How do financial firms manage risk? Unravelling the interaction of financial and operational hedging. Manage Sci 57(12):2197–2212
Hardwick P, Adams M, Zou H (2011) Board characteristics and profit efficiency in the United Kingdom life insurance industry. J Bus Finance Acc 38(7–8):987–1015
Homburg C, Muller C, Nasev J (2018) How important are dividend signals in assessing earnings persistence? Contemp Acc Res 35(4):2082–2105
Hsu W-Y, Huang YR, Lai G (2015) Corporate governance and cash holdings: evidence from the U.S. property-liability insurance industry. J Risk Insurance 82(3):715–748
Hu A, Kumar P (2004) Managerial entrenchment and payout policy. J Financial Quant Anal 39(4):759–790
International Accounting Standards Board (IASB) (2014) IFRS 9: financial instruments. IASB, London
Jensen MC (1986) Agency costs of free cash flow, corporate finance, and takeovers. Am Economic Review: Papers Proc 76(2):323–329
Jensen MC, Meckling WH (1976) Theory of the firm: managerial behavior, agency costs and ownership structure. J Financ Econ 3(3):305–360
Jiraporn P, Leelalai V, Tong S (2016) The effect of managerial ability on dividend policy: how do talented managers view dividend payouts. Appl Econ Letter 23(12):857–862
Kalay A (1982) The ex-dividend day behavior of stock prices: a re-examination of the clientele effect. J Finance 37(4):1059–1070
Kennedy P (2003) A guide to Econometrics. MIT Press, Boston, MA
Koo DS, Ramalingegowda S, Yu Y (2017) The effect of financial reporting quality on corporate dividend policy. Rev Acc Stud 22(2):753–790
Laksmana I (2008) Corporate board governance and voluntary disclosure of executive compensation practices. Contemp Acc Rev 25(4):1147–1182
Liao S, Nguyen NH, Truong C (2023) Does CEO extraversion pay off when in need? Evidence from the global financial crisis. *British Accounting Review*, in press
Lin J, Lee C (2021) Does managerial reluctance of dividend cuts signal future earnings? Rev Quant Financ Acc 56:453–478
Long MS, Malitz IB, Sefcik SE (1994) An empirical examination of dividend policy following debt issues. J Financial Quant Anal 29(1):131–144
Mayers D, Smith CW (1981) Contractual provisions, organizational structure and conflict control in insurance markets. J Bus 54(3):407–434
Mayers D, Smith CW (1990) On the corporate demand for insurance: evidence from the reinsurance market. J Bus 63(1):19–40
Michaely R, Roberts MR (2012) Corporate dividend policies: Lessons from private firms. Rev Financial Stud 25(3):711–746
Miller MH, Modigliani F (1961) Dividend policy, growth, and the valuation of shares. J Bus 34(4):411–433
Miller MH, Rock K (1985) Dividend policy under asymmetric information. J Finance 40(4):1031–1051
Minnick K, Rosenthal L (2014) Stealth compensation: do CEOs increase their pay by influencing dividend policy? J Corp Finance 25:435–454
Morse A, Nanda V, Seru A (2011) Are incentive contracts rigged by powerful CEOs? J Finance 66(5):1779–1821
Nguyen DD, Hagendorff J, Eshraghi A (2016) Can bank boards prevent misconduct? Rev Financ 20(1):1–36

Onali E (2014) Moral hazard, dividends, and risk in banks. J Bus Finance Acc 41(1–2):128–155
Onali E, Galiakhmetova R, Molyneux P, Torluccio G (2016) CEO power, government monitoring, and bank dividends. J Financ Intermediation 27(1):89–117
Pathan S, Skully M (2010) Endogenously structured boards of directors in banks. J Bank Finance 34(7):1590–1606
Rantapuska E (2008) Ex-dividend day trading: who, how, and why? Evidence from the finnish market. J Financ Econ 88(2):355–374
Reddemann S, Basse T, Graf vonder, Schlenberg J-M (2010) On the impact of the financial crisis on the dividend policy of the european insurance industry. Geneva Pap Risk Insur Issues Pract 35(1):53–62
Shao L, Kwok CCY, Guedhami O (2013) Dividend policy: balancing shareholders' and creditors' interests. J Financ Res 36(1):43–66
Sheikh S (2022) CEO power and the likelihood of paying dividends: Effect of profitability and cash flow volatility. J Corp Finance 73:102186
Skinner DJ, Soltes E (2011) What do dividends tell us about earnings quality? Rev Acc Stud 16(1):1–28
Stulz RM (1988) Managerial control of voting rights: financing policies and the market for corporate control. J Financ Econ 20(1):25–54
Tanyi P, Smith D, Cheng X (2021) Does firm payout policy affect shareholders' dissatisfaction with directors? Rev Quant Financ Acc 57:279–320
UK Financial Services and Markets Act (FSMA) (2000) HMSO, London
Upreti V, Adams MB (2015) The strategic role of reinsurance in the United Kingdom's (UK) non-life insurance market. J Bank Finance 61:206–219
Veprauskaite E, Adams M (2013) Do powerful chief executives influence the financial performance of UK firms? Br Acc Rev 45(3):229–241
Veprauskaite E, Adams M (2018) Leverage and reinsurance effects on loss reserves in the United Kingdom's property-casualty insurance industry. Acc Bus Res 48(4):373–399
Wooldridge J (2002) Econometric Analysis of Cross Section and Panel Data. MIT Press, Boston, MA
Zawadowski A (2013) Entangled financial systems. Rev Financial Stud 26(5):1291–1323
Zou H, Yang C, Wang M, Zhu M (2009) Dividend decisions in the property and liability insurance industry: mutual versus stock companies. Rev Quant Financ Acc 33(2):113–139
Zou H, Wen M-M, Yang CC, Wang M (2012) Underwriting and investment risks in the property-liability insurance industry: evidence prior to the 9–11 event. Rev Quant Financ Acc 38(1):25–46