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Do Governance Practices Strengthen the Pay–Performance Relationship of CIO?

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ABSTRACT

This study investigates the pay–performance relationship of Chief Investment Officers (CIOs) in Australian industry superannuation funds and the impact of governance practices on this relationship. The study finds that CIO pay is positively associated with fund performance and this relationship is stronger for large funds. Despite regulatory recommendations for enhanced governance practices, such as increased board independence and diversity, these practices do not significantly strengthen the pay-performance link. The findings suggest that one-size-fits-all governance reforms for different types of superannuation funds, may be ineffective, highlighting the need for tailored approaches to improve executive remuneration practices in superannuation funds.

JEL Classification: G23, G28, G34, M41, M48

1 | Introduction

The executive remuneration of Australian superannuation funds has attracted significant attention from regulators, who have raised concerns over governance practices and their influence on executive remuneration (APRA 2018; Eyers 2018). Prior scandals in the financial industry, stemming from inappropriate remuneration arrangements that reward executives despite poor performance and a lack of regulation over governance practices, led the Australian government to commission the Banking Royal Commission (Eyers and Yeates 2014; Patrick 2018). The Banking Royal Commission highlighted that the design of executive remuneration, particularly the performance-based component, does not encourage executives to achieve long-term financial outcomes and that governance practices such as board independence and board skills need improvement to provide greater oversight of executive remuneration. Moreover, the Banking Royal Commission recommended that APRA update prudential standards[1] to enhance executive remuneration arrangements and improve the effectiveness of board responsibilities and oversight (Eyers 2019) commensurate with a sector managing $3.9 trillion in retirement savings.[2]

Regulatory criticisms have particularly been directed towards industry superannuation funds which have a unique governance structure, with boards comprising equal numbers of representatives from employers and members, with trade unions allowed to nominate member representatives (the Superannuation Industry (Supervision) Act 1993 (Cth)). Although this unique governance structure ensures a balance of interests, it raises concerns about whether such appointments lead to appropriate governance expertise and the ability to challenge and oversee the management of substantial amounts of member funds. In other words, while the board of industry superannuation funds consists of well-intentioned directors, they are not the 'A team' and considered to be 'weak board' members (Boyd 2024). For example, the Construction and Building Unions Superannuation (Cbus), an Australian industry superannuation fund, has recently re-ignited the debate around the equal representation model

adopted in industry funds. In particular, in 2024, Cbus appointed three new board members nominated by the trade union Construction, Forestry and Maritime Employees Union (CFMEU), following corruption scandals and the removal of existing CFMEU board member representatives. However, the new appointments raised serious concerns regarding the suitability of these directors, as one of the newly appointed directors was previously on the board of the worst performing industry superannuation fund in Australia while another appointee is a lawyer with no prior experience on boards. In contrast, proponents of the equal representation model argue that for the last 30 years, industry superannuation funds have delivered superior returns to members and that there is no evidence that imposing more robust assessments of directors at the same level as directors of ASX-listed companies improves governance, executive remuneration and fund performance (Schubert 2024).

Before the Banking Royal Commission, the Australian Government commissioned several earlier reviews. The Super System Review (2010), also known as the Cooper Review, recommended that one-third of superannuation fund directors be independent to improve efficiency in board decisions. The review also advocated for boards to have the collective skill set to govern the fund, appropriate succession planning with regular turnover on the board, and a gender diversity consisting of at least 40% of directors on the board being women. The Financial System Inquiry (2014), also known as the Murray Inquiry, went further than the Cooper Review to require a majority of independent directors as well as an independent chair. In response to these reviews, two bills (the *Superannuation Legislation Amendment* (*Trustee Governance*) *Bill 2015* and the *Superannuation Laws Amendment* (*Strengthening Trustee Arrangements*) *Bill 2017*) were introduced to the Senate to mandate the proportion of independent directors on the board of Australian superannuation funds. However, this legislation was highly debated and did not pass the Senate (Coorey and Mather 2015; Benson 2017; Mather 2017). Importantly, the proposed change to mandating the proportion of independent directors would put an end to the equal representation model in industry superannuation funds.

Despite the concerns raised in these government reviews and in practice, there is little evidence on the pay–performance relationship of Australian industry superannuation fund executives and the influence of governance practices on this relationship. Importantly, the recommendations to change superannuation fund governance practices have been made without supporting research evidence (Yang et al. 2023). To ensure that the CIO pay reflects fund performance, effective corporate governance practices are essential (Bertrand and Mullainathan 2000; Bebchuk and Fried 2004). Unlike publicly listed firms, industry superannuation funds have homogeneous business models, operational features and governance mechanisms.[3] The objective of these funds is to manage and invest assets contributed by members and to maximise investment returns (Murray et al. 2014, 95). The board of directors plays a critical role as industry superannuation funds rely on internal governance mechanisms, such as board monitoring rather than external governance mechanisms (monitoring from blockholders, debtholders and takeover threats), to mitigate agency costs.[4] This article thus provides evidence on whether the recommended changes to board composition, including board independence, diversity, experience and expertise, impact the Chief Investment Officer (CIO) pay–performance relationship. In summary, the objectives of this article are to: (i) provide descriptive evidence on CIOs' compensation levels and structure; (ii) investigate the pay–performance relationship for CIOs; and (iii) examine whether superannuation fund governance practices influence the CIO pay–performance relationship.

The article focuses on the remuneration of CIOs as they are the highest paid executives in Australian industry superannuation funds (Hawkins 2022).[5] CIOs are directly responsible for all aspects of superannuation fund investment activities, creating a clear link between their effort, pay and fund performance. Specifically, CIOs develop and implement investment policies, investment strategies and manage how assets are allocated. Furthermore, they oversee investment professionals who manage and monitor investment decisions of assets on behalf of members. Based on the assessment of their performance in meeting targets and goals related to their key responsibilities and duties, CIO's remuneration is reviewed by the board and determined annually. CIOs are rewarded based on the outcome of their performance in fulfilling their responsibilities and duties which is closely tied to fund performance.[6] Hence, the investment responsibilities and decisions of the CIO thus have a direct effect on fund performance. In contrast, superannuation fund Chief Executive Officers (CEOs) are responsible for the overall strategy and operations of the business and not only investment arrangements. Hence, it is inherently difficult to isolate the effects of a CEO's effort on superannuation fund performance. Therefore, within the unique environment of superannuation funds, the investment performance of the CIO is directly tied to their efforts and pay, making this setting ideal for examining the pay–performance link.

The analyses in this study are conducted on Australian industry superannuation funds and exclude Australian retail superannuation funds as the governance practices in these two types of funds are different (Yang et al. 2023). For example, the board structures of industry superannuation funds employ an equal representation of employer representatives and member representatives on the board, which is required by legislation (the *SIS Act 1993*). We do not focus on retail superannuation funds because the board of retail superannuation funds comprises board members of the parent entity with a majority of independent directors. Moreover, while industry superannuation fund CIOs are compensated to perform their responsibilities and duties to satisfy members of superannuation funds, CIOs of retail superannuation funds are compensated to perform their responsibilities and duties to satisfy both members of superannuation funds and shareholders of the parent entity. This suggests that CIO compensation of retail superannuation funds includes responsibilities and duties other than superannuation funds within the entity.

In addition to the challenges of separating their pay from responsibilities arising from the superannuation funds rather than the entity, the pay–performance relationship of retail funds is complex and not comparable to industry funds as a CIO oversees multiple funds with varying pay and fund performance under the same trusteeship.[7] Furthermore, given the absence of

a secondary market, the main form of compensation for industry superannuation fund CIOs includes fixed salary and annual bonus compensation rather than equity-based compensation.[8] This contrasts with retail superannuation funds, which are owned by listed financial institutions, whereby CIOs receive equity compensation. Therefore, the homogeneous attributes of industry superannuation funds suggest that the cross-sectional variations in governance characteristics and compensation structure are minimal.

Using a sample of 200 CIOs from 2014 to 2020,[9] the findings indicate that CIO pay is positively associated with superannuation fund performance, after controlling for CIO characteristics, fund governance practices and economic characteristics. Although fund governance variables are insignificant, some variables, including CIO tenure and fund size, are associated with higher CIO pay. Furthermore, the results show no evidence that the governance practices recommended in the government reviews, such as greater board independence and gender diversity, strengthen the CIO pay–performance relationship, except that directors with prior superannuation fund experience improve the CIO pay–performance link. Thus, the findings do not support the changes to governance recommendations proposed by the Super System Review (2010) and the Financial System Inquiry (2014) at least in the context of CIO pay. The results are robust to using alternative measures of fund performance, such as raw return on assets, excess return based on investment income, and APRA rate of return, and alternative measures of governance practices.

In additional testing, we investigate the pay–performance relationship for CEOs and find insignificant results. As CEOs are compensated based on the overall management of the fund rather than investment performance alone, it is unsurprising that CEO pay is not linked to fund performance. The results also show that on average, CEOs receive a higher salary than CIOs but a lower performance-based cash bonus. The study also examines whether superannuation fund size explains variations in CIO pay,[10] and we find that fund size is positively associated with CIO pay, consistent with larger funds having more resources to compensate executives. Moreover, larger funds may demand and recruit more skilled CIOs to manage complex superannuation funds (Core et al. 1999; Gabaix and Landier 2008). The findings also indicate that the pay–performance relationship is strengthened when larger funds perform well.

The findings in this study make several contributions. First, the results contribute to the literature on the role of CIOs and their pay–performance relationship by exploiting the unique setting of Australian industry superannuation funds. These funds have homogeneous attributes such as business models, operational features and governance mechanisms where the board of directors and executive remuneration are the main governance mechanisms. Thus, the relation between CIO pay and fund performance is expected to be stronger than the pay–performance link for CEOs in publicly listed firms given the investment responsibilities of CIOs are directly linked to fund performance. The findings in this article show that CIO pay is positively associated with fund performance. However, this relationship is driven by CIO fixed salary where incentive-based compensation (cash bonus) is insignificant. The findings highlight the need for an improvement in executive compensation arrangements that appropriately align both short- and long-term performance objectives for CIOs.

Second, the findings contribute to the regulatory debate and academic literature on Australian superannuation fund governance by assessing the influence of the proposed governance practices recommended in the Super System Review (2010) and the Financial System Inquiry (2014) on CIO pay. As the study documents that these governance practices do not strengthen the CIO pay–performance relationship, the findings suggest that the recommended governance practices may not be the best approach for industry superannuation funds. These insignificant results add to the findings in Yang et al. (2023) that industry superannuation funds returns are unrelated to board independence. However, the conclusion to leave industry fund governance arrangements unchanged should be interpreted with care, as the governance structure that has worked for industry superannuation funds (i.e., the equal representation model) in the past may be sub-optimal in the future as the size of member funds invested continues to increase.

The remainder of this article is structured as follows. Section 2 outlines the regulatory setting of Australian superannuation funds. Section 3 reviews the literature and develops hypotheses on the pay–performance relationship and the influence of governance on the pay–performance relationship. Section 4 presents the research design and discusses the sample selection. Section 5 presents and discusses descriptive statistics and the main results and is followed in Section 6 by a discussion of additional tests. Section 7 concludes.

2 | Regulatory Setting

Since 2014, Australian superannuation funds are mandatorily required to disclose director and executive remuneration under s29QB of the *SIS Act 1993*. Despite this requirement, the disclosure of the details of the remuneration frameworks and policies and directors' responsibilities over remuneration practices has been lacking. Consequently, the Australian federal government commissioned the Banking Royal Commission in 2019 following concerns of a lack of stringent regulations and legislation in the Australian finance sector. These concerns followed scandals of Australian banks and superannuation funds charging unwanted fees and fees for no service to members (Collett 2018). In accordance with the recommendations in the final report of the Royal Banking Commission (Recommendation 5.1), APRA released a consultation on the draft of the new *Prudential Standard CPS 511 Remuneration* on 23 July 2019. In the final version of the prudential standard published in August 2023, APRA-regulated entities including Australian superannuation funds must disclose the remuneration frameworks, design, governance and outcomes where the remuneration frameworks are reviewed annually.

In addition to remuneration transparency, several reviews highlight the importance of governance practices and their role in remuneration policies and frameworks. The Super System Review (2010) raised concerns about the governance practices in Australian superannuation funds and made several

recommendations to enhance governance practices to keep up with international standards. These recommendations included improving the board of directors' competency and skills, increasing board independence, board size, director tenure, succession planning and gender diversity. The Financial System Inquiry (2014) supports the increase in board independence and recommends a better alignment of remuneration structures between the interests of financial firms and consumers in the financial industry. The Productivity Commission Inquiry (2018) highlights that governance practices lag contemporary best practice and recommends the board has appropriate skills and competencies in addition to the increase of board independence.

In its final report, the Banking Royal Commission (2019) highlights the failure of effective monitoring and management of the board of directors and recommends the board of directors' design and implement effective remuneration systems and regularly assess them to mitigate the risk of misconduct (Collett 2018; Ziffer 2018). In the *Prudential Standard CPS 511 Remuneration* published in August 2023, the board of directors is responsible for the remuneration frameworks and policies and is required to establish a Board Remuneration Committee[11] to oversee and monitor the remuneration design and framework. Although the regulator has introduced prudential standards to enhance governance practices and remuneration practices, there is limited empirical evidence examining the effect of governance practices on executive remuneration in Australian superannuation funds.

3 | Literature Review and Theory Development

3.1 | CIO Compensation and Fund Performance

There is an extensive body of literature examining the association between CEO compensation and firm performance in publicly listed firms. An early study by Jensen and Murphy (1990) finds a positive pay–performance relationship; however, the economic significance is small. Specifically, they find that on average, CEOs' wealth (including pay, options and stockholdings) increases by $3.25 for every $1000 increase in shareholder wealth. Furthermore, Hall and Liebman (1998) use four performance measures to examine the association between CEO pay and firm performance.[12] They find a larger pay–performance relationship which is driven by a significant increase in equity-based compensation.

The evidence on the pay–performance relationship for CEOs in Australian listed firms is inconsistent. For example, some studies provide insignificant evidence on the association between CEO compensation and performance (Merhebi et al. 2006; Heaney et al. 2010), while others document mixed evidence (Coulton and Taylor 2002; Chalmers et al. 2006). In particular, Coulton and Taylor (2002) find that the percentage of stock options as part of a compensation package is negatively associated with return on assets (ROA) and positively associated with share price performance in the previous year. Merhebi et al. (2006) find that the change in shareholder wealth (i.e., stock returns) is positively associated with CEO pay. However, they find an insignificant association between CEO pay and stock price performance, ROA and return on equity (ROE). This inconclusive evidence may be due to the heterogeneous attributes of publicly listed firms, such as different business models, operational structures, labour market and economic characteristics and governance structures.[13] These differences lead to cross-sectional variations in performance benchmarks, compensation structure and optimal governance structures amongst publicly listed firms (Brickley and Zimmerman 2010; Edmans et al. 2017).

In the mutual fund industry, the evidence on the association between investment manager compensation and fund performance is limited (Ibert et al. 2018; Ma et al. 2019).[14] For example, Ibert et al. (2018) examine the determinants of Swedish mutual fund managers' compensation and the pay–performance relationship. Although the variation in manager pay is small relative to the variation in fund revenue, they find a positive association between manager pay and revenue (a 1% increase in revenues increases managers' pay by 0.15%). Furthermore, they find that manager pay is positively associated with fund manager experience, age, the possession of a finance education and the presence of larger investment teams. Ma et al. (2019) examine the determinants of portfolio managers' compensation structure in US mutual funds. Their descriptive evidence shows that 79% of funds offer a bonus component of compensation which is linked with the fund's investment performance. They find that portfolio manager compensation is not associated with future fund performance, suggesting that portfolio manager compensation contracts are set optimally in equilibrium to deal with agency conflicts.

More recently, Lu et al. (2023) investigate the association between US public pension plan CIOs and investment performance and document that higher CIO compensation is associated with better investment performance. Although they find that CIO compensation is positively associated with CIOs receiving incentive compensation, this incentive compensation does not lead to higher fund performance. Furthermore, they document that better-educated CIOs are offered higher compensation and that these funds are more likely to retain their CIO. Similarly, Binfar and Harris (2024) find a positive association between CIO pay and future endowment returns. Amongst this research on mutual funds and pension plans, the impact of governance characteristics remains unexamined.

Although the evidence for Australian publicly listed firms is mixed, potentially due to heterogeneous firm attributes, Australian industry superannuation funds provide an ideal setting to investigate the CIO pay–performance relationship for several reasons. Firstly, unlike publicly listed firms, industry superannuation funds have homogeneous business models where the objective of the funds is to maximise retirement benefits for members by managing and investing assets contributed by members to deliver income for members in retirement (Murray et al. 2014; the *Superannuation* (*Objective*) *Bill 2023*). Furthermore, CIOs play an important role in managing the investment activities of superannuation funds, and they are compensated to mainly perform investment management responsibilities. Specifically, CIOs are entrusted with decision-making authority in investment management, where their effort, expertise and knowledge directly influence the investment decision-making process. The outcomes of these decisions should be highly associated with fund performance, which is measurable. Given that CIOs' investment responsibilities and

decisions directly affect fund outcomes, their compensation is expected to be aligned with fund performance, as documented in publicly listed firms, mutual funds and pension funds. Accordingly, we hypothesise that:

H1. *CIO pay is positively associated with fund performance.*

3.2 | CIO Compensation, Board Structure and Governance

Agency problems arise from the separation of ownership and control as self-interested managers maximise their personal benefits (Jensen and Meckling 1976; Shleifer and Vishny 1997). To control the behaviour of managers, the board of directors is appointed to advise and monitor managers on behalf of shareholders and ensure appropriate managerial incentives are used in compensation contracts to align the interests of managers with shareholders' value (Jensen and Meckling 1976; Jensen and Murphy 1990). As Australian superannuation funds lack many of the external governance mechanisms present in publicly listed firms (i.e., publicly traded securities, blockholders, debtholders and take-over threats), it is highly critical that internal governance mechanisms, which rely mainly on the board of directors, operate effectively and managerial incentives are designed appropriately to reduce agency costs.

There is extensive literature that examines the impact of board characteristics and governance practices on the pay–performance of executives (Core et al. 1999; Bebchuk and Fried 2003; Frydman and Jenter 2010). Prior studies provide evidence that good governance practices result in effective monitoring, which aligns the interest of managers and shareholders as well as strengthens the pay–performance relationship (Hallock 1997; Core et al. 1999; Hartzell and Starks 2003; Fahlenbrach 2009; Hwang and Kim 2009; Armstrong et al. 2012; Schultz et al. 2013). Prior evidence suggests that weak governance practices, including larger boards, less board independence, longer CEO tenure and greater CEO influence over the remuneration committee, lead to ineffective monitoring of executives' pay. Moreover, firms with weak corporate governance have a higher level of agency problems, allowing CEOs to extract excessive pay (Core et al. 1999; Bebchuk and Fried 2003).

As the main governance mechanism for Australian superannuation funds is the board of directors, an appropriately structured board is crucial in monitoring executives and strengthening the pay–performance relationship. The Super System Review (2010) and the Financial System Inquiry (2014) provided recommendations to improve governance practices of Australian superannuation funds. According to their recommendations, good governance practices consist of smaller boards, greater board independence, increased gender diversity, more directors with financial expertise and shorter director tenure. It is expected that superannuation funds with these governance practices have a greater capacity and ability to effectively monitor and manage CIOs and their pay–performance relationship. Specifically, while larger boards may suffer from coordination and free-rider problems, potentially diluting the board's ability to hold CIOs accountable for performance (Jensen 1993), smaller boards are often more cohesive and efficient in their decision-making, enabling them to closely monitor CIO performance and ensure that pay is tied to measurable outcomes (Yermack 1996). Meanwhile, independent board members ensure objective oversight of executive performance and are more likely to align CIO compensation with performance, fostering stronger pay–performance sensitivity (Core et al. 1999).

Prior evidence highlights that gender diverse boards enhance decision-making by incorporating varied perspectives, which fosters better strategic oversight (Carter et al. 2003). Adams and Ferreira (2009) further suggest that board diversity strengthens monitoring, ensuring compensation reflects actual performance contributions. Moreover, boards with members possessing relevant financial expertise are better equipped to effectively evaluate CIOs' contributions to organisational performance. According to Coles et al. (2008), directors with relevant expertise enhance monitoring, ensuring pay–performance alignment is robust. Finally, a board with fewer directors of long tenure are likely to possess sufficient organisational knowledge to evaluate CIO performance effectively while maintaining the independence needed to hold executives accountable. This balance ensures that CIO pay reflects their contribution to investment performance, strategic initiatives and fund member outcomes. Excessively short or long tenure, by contrast, may reduce the board's capacity to align pay with performance—either due to a lack of institutional knowledge or the risks of entrenchment.

Overall, effective board monitoring facilitates the design of an appropriate CIO compensation contract that aligns the actions of CIOs with members' interests. Therefore, we predict that:

H2. *Superannuation funds with good governance practices are associated with a stronger CIO pay–performance relationship.*

4 | Research Design

4.1 | Sample Selection

The analyses in this study are conducted on a sample of Australian industry superannuation funds. The sample consists of CIOs' compensation and characteristics, and all governance variables are hand collected from annual reports, industry superannuation fund websites and relevant documents disclosed under s29QB of the *SIS Act 1993* for the period 2014–2020. Financial data is obtained from APRA (2021) *Annual Fund-level Superannuation Statistics back series*. The initial sample is 263 fund-years. 63 observations are removed from the sample due to missing governance information.[15] The final sample consists of 200 CIO observations from 32 industry superannuation funds.[16] Based on 2020 data, the total asset size of sample funds is $719.0 billion, which covers 96.2% of industry superannuation funds (total asset size of all industry superannuation funds is $747.5 billion) and 25.0% of the total superannuation fund industry (the total asset size of all superannuation funds are $2880.8 billion).

4.2 | Regression Models

The following regression model is estimated to test H1 and is specified for each fund *i* in year *t*.

$$
\begin{aligned}
&CIO\ \ Compensation_{i,t} = \alpha + \beta_1 EXCESS\_ROA_{i,t} + \beta_2 BSIZE_{i,t} \\
&+ \beta_3 IND\_DIR_{i,t} + \beta_4 IND\_CHAIR_{i,t} \\
&+ \beta_5 FINANCIAL\_DIR_{i,t} + \beta_6 FEMALE\_DIR_{i,t} \\
&+ \beta_7 EXPERIENCE\_DIR_{i,t} + \beta_8 TENURE\_DIR_{i,t} \\
&+ \beta_{9-11} CIO\_Characteristics + \beta_{12-16} Fund\_Characteristics \\
&+ \beta_{17-21} Assset\_Allocations + Year\ \ Fixed\ \ Effects + \varepsilon_{i,t}
\end{aligned} \tag{1}
$$

To examine the impact of governance practices on the pay–performance link (H2), the following regression model is estimated and specified for each fund *i* in year *t*.

$$
\begin{aligned}
&CIO\,Compensation_{i,t} = \alpha + \beta_1 EXCESS\_ROA_{i,t} + \beta_2 BSIZE_{i,t} \\
&+ \beta_3 EXCESS\_ROA \times BSIZE_{i,t} + \beta_4 IND\_DIR_{i,t} \\
&+ \beta_5 EXCESS\_ROA \times IND\_DIR_{i,t} + \beta_6 IND\_CHAIR_{i,t} \\
&+ \beta_7 EXCESS\_ROA \times IND\_CHAIR_{i,t} \\
&+ \beta_8 FINANCIAL\_DIR_{i,t} + \beta_9 EXCESS\_ROA \\
&\times FINANCIAL\_DIR_{i,t} + \beta_{10} FEMALE\_DIR_{i,t} \\
&+ \beta_{11} EXCESS\_ROA \times FEMALE\_DIR_{i,t} \\
&+ \beta_{12} EXPERIENCE\_DIR_{i,t} + \beta_{13} EXCESS\_ROA \\
&\times EXPERIENCE\_DIR_{i,t} + \beta_{14} TENURE\_DIR_{i,t} \\
&+ \beta_{15} EXCESS\_ROA \times TENURE\_DIR_{i,t} \\
&+ \beta_{16-18} CIO\_Characteristics + \beta_{19-23} Fund\_Characteristics \\
&+ \beta_{24-28} Assset\_Allocations + Year\ Fixed\ Effects + \varepsilon_{i,t}
\end{aligned} \tag{2}
$$

The dependent variable in regression Models (1) and (2) is the compensation paid to the CIO during the year, measured alternatively as *Ln_Totalcomp_CIO, Ln_Cashbonus_CIO*, and *Ln_Salary_CIO*. *Ln_Totalcomp_CIO* is the natural logarithm of total compensation as reported in the fund's remuneration report (the sum of salary, bonus, long-term incentives and other compensation). *Ln_Cashbonus_CIO* is the natural logarithm of the CIO's cash bonus. Given the absence of a secondary market, the incentive compensation of CIOs is comprised purely of cash bonuses rather than equity-based compensation. *Ln_Salary_CIO* is the natural logarithm of the CIO's fixed salary.

4.2.1 | Fund Performance

The independent variable of interest to test H1 is *EXCESS_ROA*. *EXCESS_ROA* is measured as the difference between a superannuation fund's return on assets (*ROA*) and the median *ROA* for each year. As there is no secondary market, an accounting-based performance measure is used to measure superannuation fund performance. A positive coefficient is expected on *EXCESS_ROA*. In additional analyses (untabulated results), we also use unadjusted measures of ROA and results remain consistent with the main findings presented in the article.

4.2.2 | Governance Quality

The governance quality of superannuation funds is measured using several governance variables: *BSIZE, IND_DIR, IND_CHAIR, FINANCIAL_DIR, FEMALE_DIR, EXPERIENCE_DIR* and *TENURE_DIR*. These governance variables have been recommended by the Super System Review (2010) and the Financial System Inquiry (2014) as good governance mechanisms impacting pay. *BSIZE* is measured as the total number of directors on the board of the superannuation fund. Prior studies find a positive association between larger boards and higher executive compensation (Hallock 1997; Fahlenbrach 2009), suggesting that directors on larger boards provide less effective monitoring (Schultz et al. 2013). When the board is large, it is easier for executives to capture the board as larger boards are more distracted (Core et al. 1999). *IND_DIR* is measured as the percentage of independent directors on the board of the superannuation fund. *IND_CHAIR* is an indicator variable equal to one if a chair is an independent director, zero otherwise. *FINANCIAL_DIR* is measured as the percentage of directors with financial qualifications on the board. *FEMALE_DIR* is measured as the percentage of female directors on the board. *EXPERIENCE_DIR* is measured as the percentage of directors with prior superannuation fund experience on the board. *TENURE_DIR* is the average tenure of the directors on the board. It is hypothesised that better governance is associated with effective monitoring and results in the design of compensation contracts that align the interests of members and managers. Each governance variable is interacted with *EXCESS_ROA* to investigate the effect of governance quality on the pay–performance relationship. All variables are defined in Table A1 of Appendix A.

4.3 | Control Variables

Following prior literature, control variables are included in Models (1) and (2) to control for CIO characteristics and the economic characteristics of superannuation funds (Merhebi et al. 2006; Fahlenbrach 2009; Armstrong et al. 2012; Liu 2014; Liu and Ooi 2019). Three variables are included to control for CIO characteristics. First, the gender of CIOs (*FEMALE_CIO*) is included to control for differences in pay between males and females (Bertrand and Hallock 2001). Second, to control for CIO's qualifications an indicator variable highlighting the finance and investment qualifications (*FINANCIAL_CIO*) is included. As CIOs are responsible for managing and making investment decisions, superannuation funds have a greater demand for CIOs with finance and investment qualifications. Third, CIO's tenure (*TENURE_CIO*) is included to control for the length of years she/he has served in a fund. As the CIO's tenure increases, they become more familiar with the fund's operations and potentially have more managerial power to capture the board to receive higher pay.

The following variables are included to control for superannuation fund characteristics. The natural logarithm of total assets (*Ln_TA*) is included to control for fund size as larger funds are more complex and have greater resources to compensate skilled executives.[17] The natural logarithm of the number of investment options (*Ln_INV_OPTIONS*) is included as a control. A higher number of investment options indicates more investment responsibilities for CIOs as they need to manage multiple investment options with various investment risks. The preservation age (*PRS_AGE*) is included as a control for the level of investment risks because investment strategies

and asset allocations tend to change as members age. When members reach their retirement phase, their portfolios become more conservative to manage their investment risks and liquidity issues (Cummings and Ellis 2015). *PRS_AGE* is measured as the percentage of members who are aged 50 or over.[18] The percentage of assets managed in default funds (*DEFAULT_FUNDS*) is included to control for investments in default investment options with various risk and return profiles offered by the super fund where members contribute to. The benefits ratio (*BENEFITS_RATIO*) is included to measure the ratio of the total outflows of members' benefits over the total inflows of members' benefits. The percentage of assets allocated in cash (*CASH*), fixed income (*FIXED_INC*), equity (*EQUITY*), property (*PROPERTY*) and infrastructure (*INFRASTRUCTURE*) are included to control for the investment risks and strategy associated with various asset classes. The changes in investment strategies and asset allocations influence the dynamics of CIOs' investment responsibilities.

The dependent variables and all continuous variables are winsorised at the top and bottom 5% to reduce problems related to outliers. This article uses an unbalanced panel dataset for the period 2014–2020 of industry superannuation funds. Ordinary Least Squares (OLS) regression analysis is used to estimate Models (1) and (2) for the dependent variables *Ln_Totalcomp_CIO, Ln_Cashbonus_CIO* and *Ln_Salary_CIO*. Year-fixed effects are included in the regression models, and all the regression models cluster standard errors by funds.[19]

5 | Results

5.1 | Descriptive Statistics

Table 1 Panel A provides descriptive statistics for the variables included in regression Models (1) and (2). The mean (median) total compensation of CIOs is $443,294 ($360,175).[20] The average cash bonus is $78,612 and 36.5% of CIOs receive a cash bonus. Compared with CEO compensation, the mean fixed salary of CIOs ($322,376) is lower than that of CEOs ($421,523); however, CIOs receive a higher cash bonus than CEOs ($39,880). The mean (median) total compensation of CEOs of industry superannuation funds is $522,247 ($480,609) which is higher than the average total compensation of CIOs.[21]

Over the period 2014–2020, industry superannuation funds generated an average (median) *ROA* of 6.062% (7.043%). However, the mean *EXCESS_ROA* is 0.100%. Amongst the governance variables, the average board size is 9.7, and 13.3% and 30.2% of directors on the board are independent directors (*IND_DIR*) and female directors (*FEMALE_DIR*), respectively. Despite the lower percentage of independent directors on the board, about 49.5% of the sample has an independent chairperson (*IND_CHAIR*). On average, 47.6% of directors have a financial qualification (*FINANCIAL_DIR*) and 28.7% of directors have prior superannuation fund experience (*EXPERIENCE_DIR*).

In comparison to CEO characteristics, the CIO's average tenure (*TENURE_CIO*) is 5.7 years, whilst the average tenure of CEOs is 7.8 years. Industry superannuation funds have fewer female CIOs (the average *FEMALE_CIO* is 0.175); however, they have more CIOs (the average *FINANCIAL_CIO* is 0.660) than CEOs (the average *FINANCIAL_CEO* is 0.631) with a financial qualification.

The average asset size (*TA*) is $16,468.3 million. Industry superannuation funds have a lower percentage of preservation age members (29.6%) and the number of investment options (18.860) than retail superannuation funds, whilst a higher percentage of default funds (64.5%) (Yang et al. 2023). On average, funds have more members' benefit inflows than outflows as *BENEFITS_RATIO* is less than 1 (the average *BENEFITS_RATIO* is 0.740). The majority of fund assets are invested in equity (51.2%), followed by fixed income (16.8%) and cash (12.2%).

Panel B of Table 1 displays the differences in the means of variables for CIO compensation between funds with positive and negative excess ROA. The univariate analysis reveals that CIO's compensation variables are statistically different between positive and negative excess ROA. Specifically, CIOs in better-performing superannuation funds receive higher total compensation, cash bonus and fixed salary. This result supports H1 that CIOs pay is linked with the fund performance.

5.2 | Fund Disclosures of Remuneration Practices

Before discussing the main results, we provide examples of superannuation fund disclosures in Table A2 of Appendix B which highlight the link between CIO pay and fund performance and also indicate the role of fund governance practices in monitoring CIO pay. These disclosures indicate that the CIO's pay is reviewed annually based on their individual performance and skills in performing their main responsibility, which aligns directly with fund performance. In addition, many funds highlight the importance of setting an appropriate level of pay to ensure that the fund recruits and retains staff with the relevant skills and experience, and to reward staff in a manner that is competitive across the fund and the relevant market. Moreover, these disclosures indicate that the board holds ultimate responsibility for reviewing the remuneration policies and practices, as well as approving executive compensation. To support the oversight of the remuneration practices, many funds establish remuneration committees to oversee executive pay (see Section 6.5 for discussion of additional tests controlling for the presence of a remuneration committee). Some superannuation funds disclose that the CEO is involved in reviewing CIO remuneration. This process typically occurs in consultation with or is ratified by a board-level committee such as the remuneration or governance committee. Overall, these disclosures highlight that CIO pay is tied to fund performance and is also subject to board oversight. Thus, the skills, experience and expertise of board members may be connected to the CIO pay–performance link as suggested by H2.

5.3 | Main Results—CIO Pay–Performance Relationship (H1)

Table 2 presents regression results that estimate the association between CIO compensation, performance (*EXCESS_ROA*) and governance quality (*BSIZE, IND_DIR, IND_CHAIR,*

TABLE 1 | Descriptive statistics.

Panel A: Descriptive statistics for industry superannuation funds								
	Observations	**Mean**	**Std. Dev.**	**10th**	**25th**	**50th**	**75th**	**90th**
Dependent variables								
Totalcomp_CIO	200	443,294	315,766	176,934	231,257	360,175	537,547	913,408
Ln_Totalcomp_CIO	200	12.808	0.602	12.084	12.351	12.794	13.195	13.725
Cashbonus_CIO	200	78,612	181,172	0.000	0.000	0.000	42,950	323,715
Ln_Cashbonus_CIO	200	4.215	5.630	0.000	0.000	0.000	10.668	12.688
Salary_CIO	197	322,376	145,556	155,298	203,440	301,500	410,000	565,677
Ln_Salary_CIO	197	12.579	0.468	11.953	12.223	12.617	12.924	13.246
Fund performance								
ROA	200	6.062	3.529	0.072	4.038	7.043	8.877	9.793
EXCESS_ROA	200	0.100	1.052	−1.246	−0.611	0.043	0.798	1.372
Governance quality								
BSIZE	200	9.710	2.061	7.000	9.000	9.000	11.000	12.000
IND_DIR	200	0.133	0.113	0.000	0.059	0.111	0.200	0.333
IND_CHAIR	200	0.495	0.501	0.000	0.000	0.000	1.000	1.000
FINANCIAL_DIR	200	0.476	0.221	0.200	0.317	0.444	0.667	0.833
FEMALE_DIR	200	0.302	0.153	0.100	0.194	0.333	0.417	0.500
EXPERIENCE_DIR	200	0.287	0.304	0.000	0.000	0.222	0.455	0.778
TENURE_DIR	200	6.346	2.420	3.551	4.500	6.056	7.569	9.183
CIO characteristics								
FEMALE_CIO	200	0.175	0.381	0.000	0.000	0.000	0.000	1.000
FINANCIAL_CIO	200	0.660	0.475	0.000	0.000	1.000	1.000	1.000
TENURE_CIO	200	5.705	4.039	1.000	2.000	5.000	9.000	12.000
Fund characteristics								
TA (*$ million*)	200	16,468.3	20,538.0	1727.1	3906.8	7350.0	16,117.3	51,490.4
Ln_TA	200	15.923	1.196	14.362	15.178	15.810	16.595	17.756
INV_OPTIONS	200	18.860	9.839	8.000	11.000	18.000	25.500	30.500
Ln_INV_OPTIONS	200	2.841	0.589	2.197	2.485	2.944	3.277	3.453
PRS_AGE	200	0.296	0.101	0.141	0.236	0.288	0.360	0.427
DEFAULT_FUNDS	200	0.645	0.196	0.268	0.562	0.677	0.803	0.861
BENEFITS_RATIO	200	0.740	0.270	0.468	0.563	0.713	0.854	1.104
Asset allocations								
CASH	200	0.122	0.043	0.070	0.090	0.120	0.150	0.180
FIXED_INC	200	0.168	0.044	0.120	0.140	0.160	0.190	0.225
EQUITY	200	0.512	0.044	0.450	0.480	0.510	0.550	0.570
PROPERTY	200	0.100	0.023	0.070	0.080	0.095	0.110	0.130
INFRASTRUCTURE	200	0.070	0.033	0.030	0.050	0.060	0.100	0.110
CEO compensation								

(Continues)

TABLE 1 | (Continued)

Panel A: Descriptive statistics for industry superannuation funds

	Observations	Mean	Std. Dev.	10th	25th	50th	75th	90th
Totalcomp_CEO	222	522,247	203,155	297,402	370,058	480,609	626,103	831,142
Ln_Totalcomp_CEO	222	13.093	0.385	12.603	12.821	13.083	13.347	13.631
Cashbonus_CEO	222	39,880	70,381	0.000	0.000	0.000	50,000	172,286
Ln_Cashbonus_CEO	222	4.119	5.471	0.000	0.000	0.000	10.82	12.057
Salary_CEO	217	421,523	141,918	246,669	318,679	411,819	504,831	589,231
Ln_Salary_CEO	217	12.896	0.338	12.416	12.672	12.928	13.132	13.287
CEO characteristics								
FEMALE_CEO	222	0.198	0.400	0.000	0.000	0.000	0.000	1.000
FINANCIAL_CEO	222	0.631	0.484	0.000	0.000	1.000	1.000	1.000
TENURE_CEO	222	7.779	5.332	1.000	3.000	7.000	12.000	16.000

Panel B: Univariate results for CIO's compensation

	Positive *EXCESS_ROA* Observations	Positive *EXCESS_ROA* Mean	Negative *EXCESS_ROA* Observations	Negative *EXCESS_ROA* Mean	Std. Dev.	Stat diff.
Totalcomp_CIO	103	523,351	97	358,285	43,225	165,066***
Ln_Totalcomp_CIO	103	12.961	97	12.646	0.082	0.314***
Cashbonus_CIO	103	118,282	97	36,488	25,032	81,794***
Ln_Cashbonus_CIO	103	5.018	97	3.362	0.790	1.656**
Salary_CIO	100	365,329	97	278,093	19,836	87,236***
Ln_Salary_CIO	100	12.705	97	12.448	0.064	0.256***

Note: This table presents descriptive statistics for all variables included in the regression models. The last column in panel B presents the statistical difference between the mean values for positive and negative *EXCESS_ROA*. *** and ** statistical significance at 1% and 5%, respectively. All variables are defined in Table A1 of Appendix A.

FINANCIAL_DIR, FEMALE_DIR, EXPERIENCE_DIR and *TENURE_DIR*). In column (1), the coefficient on *EXCESS_ROA* is positively associated with *Ln_Totalcomp_CIO*, supporting H1. The finding is consistent with prior evidence (Chalmers et al. 2006; Merhebi et al. 2006; Schultz et al. 2013) for listed firms, and this pay–performance relationship remains positive and significant when the regression includes controls for fund economic characteristics in column (2) and governance variables in column (3). These findings indicate that a one-unit increase in *EXCESS_ROA* results in an 8.22% (exp(0.079) = 1.0822) increase in CIO total compensation. The coefficients on *EXCESS_ROA* are significant and positively associated with *Ln_Salary_CIO* in columns (7), (8) and (9).[22] However, the coefficients on *EXCESS_ROA* are insignificant for *Ln_Cashbonus_CIO*.[23] The coefficients on all governance quality variables are generally insignificant in column (3). However, the coefficients on *BSIZE* and *FINANCIAL_DIR* are significant and negatively associated with *Ln_Cashbonus_CIO*, and the coefficient on *TENURE_DIR* is significant and negatively associated with *Ln_Salary_CIO*. Overall, the results indicate that governance practices are not associated with CIO compensation.

Turning to the control variables, the coefficients on *TENURE_CIO* and *Ln_TA* are significant and positively associated with *Ln_Totalcomp_CIO* and *Ln_Salary_CIO*, indicating that longer-tenured CIOs and CIOs in larger funds receive higher total compensation and salary. The positive and significant association between fund size and compensation supports the findings of other studies (Core et al. 1999; Gabaix and Landier 2008; Fahlenbrach 2009; Armstrong et al. 2012). This result suggests that larger funds require more skilled managers and, as a result, they are compensated more for managing large complex funds.

TABLE 2 | The CIO pay–performance relationship.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_Salary_CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	0.161**	0.081**	0.079**	0.800	0.059	0.125	0.115**	0.059**	0.056**
	(2.349)	(2.549)	(2.484)	(1.387)	(0.147)	(0.329)	(2.380)	(2.201)	(2.215)
BSIZE			−0.015			−0.613**			0.009
			(−0.716)			(−2.108)			(0.568)
IND_DIR			0.038			1.339			−0.364
			(0.078)			(0.221)			(−0.931)
IND_CHAIR			0.032			0.474			0.079
			(0.237)			(0.386)			(0.847)
FINANCIAL_DIR			−0.217			−4.813*			0.029
			(−0.967)			(−2.002)			(0.151)
FEMALE_DIR			−0.122			−4.397			−0.162
			(−0.348)			(−1.133)			(−0.655)
EXPERIENCE_DIR			−0.111			−1.330			−0.141
			(−0.856)			(−0.927)			(−1.432)
TENURE_DIR			−0.021			0.025			−0.025*
			(−1.285)			(0.157)			(−1.727)
FEMALE_CIO		−0.072	−0.042		−0.049	−0.076		−0.044	0.017
		(−0.779)	(−0.431)		(−0.032)	(−0.051)		(−0.525)	(0.216)
FINANCIAL_CIO		0.053	0.065		1.911*	2.525**		0.019	0.005
		(0.563)	(0.677)		(1.817)	(2.487)		(0.235)	(0.067)
TENURE_CIO		0.029**	0.028**		0.217	0.165		0.020**	0.020**
		(2.619)	(2.541)		(1.291)	(1.039)		(2.275)	(2.317)

(Continues)

TABLE 2 | (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_Salary_CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
Ln_TA		0.364***	0.368***		1.508**	1.815***		0.271***	0.266***
		(5.125)	(5.692)		(2.524)	(3.151)		(5.340)	(5.626)
Ln_INV_OPTIONS		−0.149	−0.090		0.816	2.522**		−0.135*	−0.114
		(−1.566)	(−0.997)		(0.730)	(2.164)		(−1.780)	(−1.515)
PRS_AGE		0.782	1.052		−19.378***	−7.473		1.194**	0.963*
		(1.075)	(1.351)		(−2.934)	(−0.967)		(2.205)	(1.855)
DEFAULT_FUNDS		−0.399	−0.226		−7.671**	−3.776		−0.025	−0.075
		(−1.207)	(−0.636)		(−2.710)	(−1.237)		(−0.112)	(−0.327)
BENEFITS_RATIO		0.054	0.024		−1.634	−3.195*		0.048	0.079
		(0.246)	(0.119)		(−0.770)	(−1.892)		(0.318)	(0.494)
CASH		−0.989	−1.043		11.854	17.456		−0.591	−0.894
		(−0.538)	(−0.517)		(0.547)	(0.802)		(−0.426)	(−0.649)
FIXED_INC		0.140	0.348		9.280	13.624		0.461	0.461
		(0.101)	(0.235)		(0.547)	(0.838)		(0.444)	(0.412)
EQUITY		−0.312	0.007		−9.793	−0.677		0.817	0.957
		(−0.252)	(0.006)		(−0.555)	(−0.050)		(0.775)	(0.954)
PROPERTY		2.934	3.691**		36.939	51.095**		2.043	2.024
		(1.577)	(2.056)		(1.499)	(2.249)		(1.375)	(1.328)
INFRASTRUCTURE		−2.187	−2.216		0.074	2.181		−1.433	−1.424
		(−0.976)	(−1.071)		(0.003)	(0.098)		(−0.846)	(−0.987)
Constant	12.792***	7.347***	7.101***	4.135***	−14.388	−27.366	12.567***	7.623***	7.837***
	(140.094)	(5.359)	(4.773)	(5.249)	(−0.799)	(−1.680)	(183.559)	(7.695)	(7.036)

(Continues)

TABLE 2 | (Continued)

Variables	(1) Ln_Totalcomp_CIO	(2) Ln_Totalcomp_CIO	(3) Ln_Totalcomp_CIO	(4) Ln_Cashbonus_CIO	(5) Ln_Cashbonus_CIO	(6) Ln_Cashbonus_CIO	(7) Ln_Salary_CIO	(8) Ln_Salary_CIO	(9) Ln_Salary_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
Observations	200	200	200	200	200	200	197	197	197
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.0992	0.673	0.679	0.0237	0.372	0.437	0.118	0.627	0.638

Note: The table presents the results of estimating an OLS regression examining the Australian industry superannuation fund CIO pay–performance relationship and the effect of governance practices on its relationship. The *t* statistics are presented in parentheses. ***, ** and * statistical significance at 1%, 5% and 10%, respectively. All variables are defined in Table A1 of Appendix A.

5.4 | The Effect of Governance Practices on the CIO Pay–Performance Relationship (H2)

To test H2 and investigate the influence of governance practices on the pay–performance relationship, interaction terms between *EXCESS_ROA* and individual governance variables are examined separately. In Table 3, the coefficients of the interaction term between *EXCESS_ROA* and individual governance quality variables are insignificant in all regression models except the interaction between *EXCESS_ROA* and *EXPERIENCE_DIR*. The coefficient on the interaction term *EXCESS_ROA* × *EXPERIENCE_DIR* is significant and positively associated with CIO total compensation (in Panel A), cash bonus (in Panel B) and salary (in Panel C). The results are consistent with directors that have prior superannuation fund experience enhancing the CIO pay–performance relationship through better monitoring and aligning the remuneration policy of senior executives by utilising their industry-specific experience. Overall, the findings show limited evidence that good governance practices provide effective monitoring activities in managing CIOs' pay and the pay–performance relationship. Therefore, H2 is not supported. These findings call into question the recommendations from government reviews that advocate for industry superannuation funds to change existing governance practices at least in the context of CIO pay.

6 | Additional Tests

6.1 | Alternative Measures of Performance

To ensure that the reported findings are not sensitive to the measurement of fund performance, alternative performance measures are examined in additional analyses, including return on assets, excess return based on investment income, APRA rate of return and excess return based on APRA rate of return. The APRA rate of return is measured as net earnings after tax divided by cash flow adjusted net assets. In untabulated results, the findings using these alternative measures of performance remain similar to the main findings and indicate that fund performance is positively associated with CIO compensation. Furthermore, the interaction of the governance variables with these alternative measures of performance returns similar findings to the main results. Alternatively, we also transform each governance variable into an indicator variable that equals one if the value is greater than the sample median and zero otherwise. The findings in untabulated results show that using these alternative governance measures in interaction terms with performance continues to show insignificant findings.

6.2 | CEO Pay–Performance Relationship

In addition to the CIO pay–performance relationship, the CEO pay–performance relationship is investigated as they have ultimate responsibility for the overall management of the fund. As shown in Panel A of Table 1, while CEOs average total compensation and salary are higher than CIOs, some CIOs received higher compensation than CEOs.[24] CIOs received a higher cash bonus than CEOs, indicating that CEOs are compensated less based on the fund performance compared to CIOs. It is thus

TABLE 3 | The effect of governance practices on the CIO pay–performance relationship.

Panel A: Total CIO compensation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	−0.058	0.073	0.057	0.148**	0.076	−0.000	0.122	−0.099
	(−0.364)	(1.498)	(1.113)	(2.146)	(1.297)	(−0.009)	(1.642)	(−0.424)
BSIZE	−0.025							−0.026
	(−1.306)							(−1.253)
EXCESS_ROA × *BSIZE*	0.015							0.017
	(0.884)							(0.878)
IND_DIR		0.198						0.007
		(0.512)						(0.016)
EXCESS_ROA × *IND_DIR*		0.071						−0.172
		(0.281)						(−0.513)
IND_CHAIR			0.033					0.020
			(0.319)					(0.171)
EXCESS_ROA × *IND_CHAIR*			0.044					0.080
			(0.658)					(1.096)
FINANCIAL_DIR				−0.236				−0.160
				(−1.105)				(−0.829)
EXCESS_ROA × *FINANCIAL_DIR*				−0.159				−0.230*
				(−1.204)				(−1.820)
FEMALE_DIR					−0.041			−0.018
					(−0.119)			(−0.055)
EXCESS_ROA × *FEMALE_DIR*					0.019			0.053
					(0.119)			(0.261)

(Continues)

TABLE 3 | (Continued)

Panel A: Total CIO compensation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO	Ln_Totalcomp_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXPERIENCE_DIR						−0.129		−0.147
						(−1.119)		(−1.517)
EXCESS_ROA × *EXPERIENCE_DIR*						0.351***		0.333**
						(3.180)		(2.724)
TENURE_DIR							−0.024	−0.025*
							(−1.266)	(−1.741)
EXCESS_ROA × *TENURE_DIR*							−0.007	0.001
							(−0.634)	(0.055)
Observations	200	200	200	200	200	200	200	200
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.675	0.671	0.672	0.680	0.669	0.698	0.678	0.704

Panel B: CIO cash bonus

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	−2.476	0.346	0.577	−0.652	0.531	−0.990**	0.107	−2.382
	(−1.429)	(0.600)	(0.993)	(−0.732)	(0.761)	(−2.152)	(0.125)	(−0.989)
BSIZE	−0.862***							−0.779**
	(−3.067)							(−2.670)

(Continues)

TABLE 3 | (Continued)

Panel B: CIO cash bonus

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA × *BSIZE*	0.277							0.183
	(1.499)							(1.393)
IND_DIR		2.977						0.795
		(0.507)						(0.133)
EXCESS_ROA × *IND_DIR*		−2.139						−0.327
		(−0.665)						(−0.072)
IND_CHAIR			0.562					0.539
			(0.511)					(0.520)
EXCESS_ROA × *IND_CHAIR*			−0.960					−0.745
			(−1.326)					(−0.666)
FINANCIAL_DIR				−5.806**				−3.367
				(−2.357)				(−1.431)
EXCESS_ROA × *FINANCIAL_DIR*				1.444				0.957
				(0.883)				(0.563)
FEMALE_DIR					−5.661			−3.789
					(−1.308)			(−1.047)
EXCESS_ROA × *FEMALE_DIR*					−1.270			−1.817
					(−0.696)			(−0.760)
EXPERIENCE_DIR						−1.029		−1.486
						(−0.776)		(−1.324)
EXCESS_ROA × *EXPERIENCE_DIR*						4.486***		4.323***
						(3.939)		(3.816)

(Continues)

TABLE 3 | (Continued)

Panel B: CIO cash bonus

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO	Ln_Cashbonus_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
TENURE_DIR							−0.010	−0.033
							(−0.060)	(−0.226)
EXCESS_ROA × *TENURE_DIR*							−0.008	0.060
							(−0.066)	(0.398)
Observations	200	200	200	200	200	200	200	200
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.423	0.369	0.373	0.409	0.382	0.416	0.365	0.475

Panel C: CIO salary

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	−0.060	0.032	0.025	0.102*	0.035	0.023	0.113	−0.149
	(−0.391)	(0.757)	(0.550)	(1.711)	(0.834)	(0.703)	(1.676)	(−0.786)
BSIZE	0.007							0.004
	(0.464)							(0.275)
EXCESS_ROA × *BSIZE*	0.012							0.019
	(0.726)							(1.110)
IND_DIR		−0.109						−0.433
		(−0.358)						(−1.215)

(Continues)

TABLE 3 | (Continued)

Panel C: CIO salary

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO	Ln_Salary_CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA × *IND_DIR*		0.206						−0.064
		(1.006)						(−0.216)
IND_CHAIR			0.033					0.070
			(0.446)					(0.807)
EXCESS_ROA × *IND_CHAIR*			0.062					0.081
			(1.103)					(1.304)
FINANCIAL_DIR				0.027				0.031
				(0.142)				(0.175)
EXCESS_ROA × *FINANCIAL_DIR*				−0.098				−0.133
				(−0.761)				(−1.091)
FEMALE_DIR					0.048			−0.106
					(0.181)			(−0.438)
EXCESS_ROA × *FEMALE_DIR*					0.077			0.088
					(0.712)			(0.575)
EXPERIENCE_DIR						−0.161		−0.167*
						(−1.637)		(−1.915)
EXCESS_ROA × *EXPERIENCE_DIR*						0.155*		0.130
						(2.015)		(1.546)
TENURE_DIR							−0.022	−0.029**
							(−1.587)	(−2.102)
EXCESS_ROA × *TENURE_DIR*							−0.010	−0.003
							(−1.039)	(−0.223)

(Continues)

TABLE 3 | (Continued)

Panel C: CIO salary																
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO		Ln_Salary_CIO	
	Coeff.		Coeff.		Coeff.		Coeff.		Coeff.		Coeff.		Coeff.		Coeff.	
Variables	(*t*-stats)		(*t*-stats)		(*t*-stats)		(*t*-stats)		(*t*-stats)		(*t*-stats)		(*t*-stats)		(*t*-stats)	
Observations	197		197		197		197		197		197		197		197	
Controls	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Adj. R^2	0.627		0.626		0.629		0.625		0.623		0.639		0.637		0.649	

Note: The table presents the results of estimating an OLS regression examining the governance effectiveness on Australian industry superannuation fund CIO pay–performance relationship. The *t* statistics are presented in parentheses. ***, ** and * statistical significance at 1%, 5% and 10%, respectively. All variables are defined in Table A1 of Appendix A.

conjectured that the CEO pay–performance relationship is weaker than the CIO pay–performance relationship.

The results in Table 4 show an insignificant association between *EXCESS_ROA* and CEO pay. This finding is expected, given that CEOs are compensated based on the overall management of the fund, rather than the net investment performance only. The findings are also consistent with prior studies (Merhebi et al. 2006; Heaney et al. 2010). Similar to the main findings, the coefficients of *TENURE_CEO* and *Ln_TA* have a significant and positive association with CEO pay. Furthermore, while many governance variables are insignificant, director tenure (*TENURE_DIR*) is associated with lower total compensation, and an independent chairperson (*IND_CHAIR*) is associated with a higher cash bonus.

6.3 | Small Versus Large Superannuation Funds

To investigate whether the CIO pay–performance relationship is related to fund size, an interaction term between performance (*EXCESS_ROA*) and large funds (*Large_TA*) is included in the regression model. Prior studies indicate that larger superannuation funds achieve better investment returns by benefiting from lower administration costs and diversification benefits with increased access and capacity to invest in private markets such as property and infrastructure (Cummings 2016; Lawrence and Warren 2023). While the executives in large funds have greater responsibilities managing sizeable assets, large funds also have a greater pool of resources to compensate executives. Large funds (*Large_TA*) are measured using an indicator variable equal to 1 if the total asset of a superannuation fund is above the median total asset size. In untabulated results, the mean of CIO pay (total compensation, cash bonus and salary) and governance practice variables (*BSIZE, IND_DIR, FINANCIAL_DIR, FEMALE_DIR* and *TENURE_DIR*) are statistically different between small and large funds. The findings indicate that large superannuation funds have better governance practices and pay higher CIO pay.

Whilst the results on *EXCESS_ROA* in Table 5 are insignificant, the interaction term *EXCESS_ROA* × *Large_TA* is positive and significant.[25] These results indicate that the positive CIO pay–performance relationship is driven by larger superannuation funds. When large funds perform well, CIOs receive more pay, but this association does not exist for smaller funds. Interestingly, this CIO pay–performance relationship for large funds also exists for both cash bonus and salary. This finding is related to the CIO compensation structure in large funds being designed to compensate CIOs based on their performance. We find that a larger percentage of CIOs in large funds (49%) receive a cash bonus compared to CIOs in smaller funds (24.5%).

6.4 | The Effect of CIO Pay on Future Fund Performance

We acknowledge the endogenous nature of CIO compensation due to the complex arrangement of compensation, the board of directors and the CIO labour market (Frydman and Jenter 2010). In particular, the reverse causality is concerning where CIO pay

TABLE 4 | The CEO pay–performance relationship.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CEO	Ln_ Totalcomp_ CEO	Ln_ Totalcomp_ CEO	Ln_ Cashbonus_ CEO	Ln_ Cashbonus_ CEO	Ln_ Cashbonus_ CEO	Ln_Salary_CEO	Ln_ Salary_ CEO	Ln_ Salary_ CEO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	0.065	0.017	0.020	0.312	−0.140	−0.052	0.048	0.010	0.012
	(1.591)	(1.119)	(1.443)	(0.689)	(−0.387)	(−0.175)	(1.364)	(0.840)	(1.062)
BSIZE			−0.021			−0.561			−0.005
			(−1.115)			(−1.646)			(−0.498)
IND_DIR			−0.128			4.379			−0.240
			(−0.594)			(0.902)			(−1.213)
IND_CHAIR			0.006			3.215***			−0.019
			(0.110)			(3.163)			(−0.398)
FINANCIAL_DIR			−0.062			−5.541**			0.089
			(−0.506)			(−2.475)			(0.977)
FEMALE_DIR			0.003			−5.235*			0.029
			(0.022)			(−1.733)			(0.230)
EXPERIENCE_DIR			0.083			−1.703			0.119**
			(1.402)			(−1.457)			(2.397)
TENURE_DIR			−0.015*			−0.062			−0.009
			(−1.973)			(−0.508)			(−1.266)
FEMALE_CEO		−0.031	−0.019		−1.815	−0.840		0.009	0.003
		(−0.455)	(−0.265)		(−1.508)	(−0.747)		(0.160)	(0.059)
FINANCIAL_CEO		0.084	0.101*		−1.577	−0.991		0.131**	0.139***
		(1.371)	(1.897)		(−1.414)	(−1.134)		(2.446)	(2.805)
TENURE_CEO		0.012**	0.014**		−0.081	0.073		0.015***	0.013***
		(2.371)	(2.564)		(−0.744)	(0.874)		(3.729)	(2.995)

(Continues)

TABLE 4 | (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CEO	Ln_ Totalcomp_ CEO	Ln_ Totalcomp_ CEO	Ln_ Cashbonus_ CEO	Ln_ Cashbonus_ CEO	Ln_ Cashbonus_ CEO	Ln_Salary_CEO	Ln_ Salary_ CEO	Ln_ Salary_ CEO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
Ln_TA		0.254***	0.261***		1.249**	1.372**		0.202***	0.201***
		(8.865)	(7.184)		(2.326)	(2.659)		(12.023)	(9.809)
Ln_INV_OPTIONS		0.045	0.054		1.848	4.499***		0.000	−0.028
		(0.759)	(1.105)		(1.685)	(5.732)		(0.003)	(−0.646)
PRS_AGE		−0.232	0.135		−31.661***	−16.074**		0.038	0.100
		(−0.662)	(0.262)		(−3.643)	(−2.057)		(0.137)	(0.337)
DEFAULT_FUNDS		−0.189	−0.033		−9.395**	−5.051		0.002	0.029
		(−0.941)	(−0.153)		(−2.492)	(−1.638)		(0.009)	(0.171)
BENEFITS_RATIO		0.067	0.042		1.610	1.110		−0.017	−0.031
		(0.529)	(0.390)		(0.810)	(0.648)		(−0.199)	(−0.424)
CASH		0.408	0.230		2.523	−0.620		0.457	0.302
		(0.878)	(0.502)		(0.218)	(−0.056)		(1.124)	(0.703)
FIXED_INC		0.254	0.172		−2.328	1.729		0.329	0.142
		(0.468)	(0.346)		(−0.179)	(0.153)		(0.992)	(0.474)
EQUITY		0.156	0.159		−25.029**	−22.060***		0.704**	0.614*
		(0.364)	(0.358)		(−2.444)	(−3.304)		(2.256)	(1.904)
PROPERTY		1.026	1.382*		−3.359	17.049		0.023	−0.042
		(1.345)	(1.737)		(−0.167)	(1.114)		(0.036)	(−0.071)
INFRASTRUCTURE		−1.546	−1.944*		1.063	−8.319		−1.040	−1.201
		(−1.327)	(−1.951)		(0.042)	(−0.478)		(−1.440)	(−1.628)
Constant	13.088***	8.784***	8.772***	4.097***	8.436	−4.775	12.893***	9.102***	9.363***
	(215.204)	(14.425)	(10.672)	(4.945)	(0.671)	(−0.475)	(249.249)	(24.538)	(21.615)

(Continues)

TABLE 4 | (Continued)

Variables	(1) Ln_Totalcomp_CEO	(2) Ln_Totalcomp_CEO	(3) Ln_Totalcomp_CEO	(4) Ln_Cashbonus_CEO	(5) Ln_Cashbonus_CEO	(6) Ln_Cashbonus_CEO	(7) Ln_Salary_CEO	(8) Ln_Salary_CEO	(9) Ln_Salary_CEO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
Observations	222	222	222	222	222	222	217	217	217
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.0428	0.726	0.737	−0.0123	0.348	0.499	0.0953	0.755	0.767

Note: The table presents the results of estimating an OLS regression examining the Australian industry superannuation fund CEO pay–performance relationship and the effect of governance practices on its relationship. The *t* statistics are presented in parentheses. ***, ** and * statistical significance at 1%, 5% and 10%, respectively. All variables are defined in Table A1 of Appendix A.

influences future fund performance. For example, if CIOs know they have achieved their pay related to performance and non-performance targets during the year, they may reduce their effort in managing their investment responsibilities for the year and try to maximise their incentives in the following year. Furthermore, Lu et al. (2023) examined CIOs of US public pension plans and showed evidence that higher CIO compensation levels lead to better future performance through better hiring and improved retention of CIOs. However, the expectation of an association between CIO pay and future fund performance for superannuation funds is somewhat unjustified for several reasons. First, CIO remuneration is reviewed annually based on their performance against their goals and targets for the year. Second, the majority of superannuation funds' investments are in liquid assets (i.e., cash, fixed income and equity) where the market returns are timely and transparent, leaving little room for shifting their earnings to maximise their bonus in the following year.

In untabulated results, we find that there is no association between current CIO pay and future fund performance ($EXCESS\_ROA_{(t+1)}$). The coefficients on total compensation, cash bonus and salary are insignificant. All coefficients of governance variables are also insignificant. The results show no evidence that higher CIO pay leads to better fund performance and support the main result that CIO pay is associated with current fund performance. In addition, we also examined whether prior fund performance ($EXCESS\_ROA_{(t-1)}$) is associated with CIO pay. The untabulated results also show an insignificant association between prior fund performance and CIO pay. These results indicate that current pay is associated with current performance, and current CIO pay does not lead to higher future fund performance, nor does past fund performance lead to higher CIO pay.

6.5 | Other Tests

We have conducted additional tests to consider other factors influencing the CIO's pay–performance relationship, including remuneration committees and using alternative measures of fund governance.[26] It is possible that the presence of a remuneration committee impacts CIO compensation. We hand-collect these data from annual reports. We find that 88% of industry superannuation funds have a remuneration committee. We augment our regression model (1) to include a remuneration committee variable (an indicator variable equal to one if the superannuation fund has a remuneration committee, zero otherwise). Results (untabulated) reveal that the coefficient on a remuneration committee variable is negative and significant, suggesting that the presence of a remuneration committee is associated with lower total compensation and fixed salary of CIOs. Our main results on total compensation, cash bonus and salary remain similar.

Regarding the alternative measurement of governance practices, we make use of a governance index[27] instead of the individual governance variables. Regression results (untabulated) using the governance index instead of the individual measures of corporate governance continue to show similar results of a pay-for-performance relationship for CIOs. Furthermore, we do not find an association between the governance index and CIO pay, nor do we find an association between the interaction of

TABLE 5 | The CIO pay–performance relationship for small and large superannuation funds.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
EXCESS_ROA	−0.003	0.028	0.011	−0.422	−0.599	−0.663	−0.007	0.019	−0.003
	(−0.075)	(0.593)	(0.255)	(−0.997)	(−1.351)	(−1.530)	(−0.167)	(0.480)	(−0.098)
Large_TA	0.677***	0.620***	0.616***	3.080**	1.697	2.149**	0.489***	0.460***	0.444***
	(5.242)	(5.013)	(5.689)	(2.281)	(1.359)	(2.118)	(4.971)	(4.810)	(5.517)
EXCESS_ROA × *Large_TA*	0.210**	0.106*	0.117**	1.844**	1.347**	1.509**	0.155**	0.079	0.102**
	(2.638)	(1.875)	(2.112)	(2.368)	(2.097)	(2.236)	(2.613)	(1.552)	(2.291)
BSIZE			0.025			−0.414			0.038*
			(1.031)			(−1.433)			(1.957)
IND_DIR			−0.333			−1.598			−0.646
			(−0.657)			(−0.263)			(−1.669)
IND_CHAIR			0.071			0.950			0.107
			(0.608)			(0.788)			(1.287)
FINANCIAL_DIR			−0.442*			−5.649**			−0.139
			(−1.848)			(−2.174)			(−0.730)
FEMALE_DIR			−0.526			−6.616*			−0.472*
			(−1.441)			(−1.760)			(−1.801)
EXPERIENCE_DIR			0.058			−0.334			−0.017
			(0.388)			(−0.218)			(−0.162)
TENURE_DIR			−0.033**			−0.061			−0.035**
			(−2.114)			(−0.374)			(−2.618)
FEMALE_CIO		0.010	0.025		−0.077	−0.036		0.017	0.063
		(0.088)	(0.246)		(−0.048)	(−0.022)		(0.189)	(0.864)
FINANCIAL_CIO		0.243***	0.238***		2.689**	3.358***		0.162**	0.131**
		(2.794)	(2.839)		(2.505)	(3.142)		(2.276)	(2.206)
TENURE_CIO		0.041***	0.036***		0.258	0.195		0.029***	0.026***
		(3.137)	(3.040)		(1.544)	(1.246)		(2.924)	(2.852)
Ln_INV_OPTIONS		−0.052	0.037		1.677	3.637***		−0.061	−0.013
		(−0.505)	(0.348)		(1.674)	(3.333)		(−0.720)	(−0.151)
PRS_AGE		0.406	0.220		−19.191**	−9.591		0.920	0.394
		(0.517)	(0.302)		(−2.729)	(−1.178)		(1.531)	(0.792)
DEFAULT_FUNDS		−0.822**	−0.650*		−8.637***	−5.186*		−0.337	−0.358
		(−2.291)	(−1.954)		(−2.844)	(−1.716)		(−1.281)	(−1.679)
BENEFITS_RATIO		−0.060	0.018		−2.263	−3.304*		−0.037	0.083
		(−0.274)	(0.100)		(−0.925)	(−1.900)		(−0.239)	(0.541)

(Continues)

TABLE 5 | (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Totalcomp_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Cashbonus_ CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO	Ln_ Salary_ CIO
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Variables	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)	(*t*-stats)
CASH		−3.121	−3.984*		6.068	4.286		−2.183	−3.029**
		(−1.211)	(−1.843)		(0.257)	(0.204)		(−1.193)	(−2.101)
FIXED_INC		−0.971	−1.283		5.857	5.811		−0.386	−0.785
		(−0.489)	(−0.725)		(0.330)	(0.360)		(−0.282)	(−0.624)
EQUITY		−0.872	−0.858		−10.458	−3.891		0.383	0.307
		(−0.532)	(−0.655)		(−0.557)	(−0.294)		(0.310)	(0.302)
PROPERTY		1.289	1.990		37.084	49.661**		0.821	0.860
		(0.537)	(0.895)		(1.491)	(2.127)		(0.447)	(0.479)
INFRASTRUCTURE		−1.335	−1.736		3.732	3.840		−0.784	−1.098
		(−0.465)	(−0.802)		(0.131)	(0.176)		(−0.368)	(−0.735)
Constant	12.449***	13.651***	13.748***	2.507***	7.863	2.212	12.315***	12.319***	12.623***
	(171.011)	(6.501)	(8.106)	(3.114)	(0.455)	(0.158)	(170.596)	(8.042)	(9.713)
Observations	200	200	200	200	200	200	197	197	197
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.467	0.621	0.658	0.129	0.352	0.419	0.434	0.577	0.620

Note: The table presents the results of estimating an OLS regression examining the Australian industry superannuation fund CIO pay–performance relationship and the effect of the fund size on its relationship. The *t* statistics are presented in parentheses. ***, ** and * statistical significance at 1%, 5% and 10%, respectively. All variables are defined in Table A1 of Appendix A.

EXCESS_ROA and the governance index and CIO pay. This is consistent with the main findings that we do not find evidence that better corporate governance practices improve the pay-for-performance relationship of CIOs.[28]

7 | Conclusion

This article examines the association between CIO pay and the performance of Australian industry superannuation funds, and whether better governance practices strengthen the pay–performance relationship for CIOs. This study uses the unique setting of Australian industry superannuation funds where the board of directors is the main governance mechanism. This article argues that as CIOs play a critical role in managing the assets of superannuation funds, the CIOs' efforts in managing and allocating investments are directly linked to fund performance. This article provides evidence based on a sample of 200 CIOs of Australian industry superannuation funds for the period 2014–2020. First, this article documents evidence that CIO pay is positively associated with fund performance, particularly for large funds. The finding suggests that fund performance, which is the outcome of CIO's responsibilities and efforts, is reflected in their pay. Second, the findings in this article show that better governance practices do not influence the pay–performance relationship of CIOs. This suggests that good governance practices do not necessarily provide better monitoring activities. However, the results suggest that directors with prior superannuation fund experience on the board strengthen the association between fund performance and CIO pay. The results are largely robust in additional tests, which use alternate measures of performance and governance practices.

The results from this article have implications for regulators, policymakers, practitioners and researchers, and contribute to the literature on the pay–performance relationship and governance practices in Australian industry superannuation funds (Chalmers et al. 2006; Benson et al. 2011; Schultz et al. 2013; Liu 2014; Liu and Ooi 2016; Lu et al. 2023). The findings raise doubts on whether the governance practices recommended by the Super System Review (2010) and the Financial System Inquiry (2014) provide effective monitoring and enhance the pay–performance relationship of the highest-paid executives in Australian superannuation funds. The results presented in this article provide no evidence that good governance practices strengthen the pay–performance relationship of CIOs. The findings suggest that as each superannuation fund is different (i.e., the demographics of members, asset allocations, investment risks and investment strategies), there is not one approach to governance practices that produces the best outcome for members of industry superannuation funds.

The findings in this article are subject to several limitations, in particular the small sample size and short sample period. The

sample size is small due to the relatively low number of industry superannuation funds (33 industry superannuation funds in 2020). It is noteworthy, however, that the asset size of these industry superannuation funds accounts for a significant proportion of the total superannuation fund industry. Moreover, as governance disclosures, including remuneration and the profile of directors and executives, have only been available since 1 July 2014 (under s29QB of the *SIS Act 1993*), the sample period starts from 2014 onwards. Furthermore, CIOs of retail superannuation funds are not included in the sample because they are not only responsible for managing superannuation funds, but they may also have other roles in the parent company. Consequently, the compensation of retail superannuation fund CIOs includes their compensation from other roles. Therefore, the results in this article may not be generalisable to retail superannuation funds—this can be examined in future research. Finally, it is possible that members who are dissatisfied with the internal governance of their industry superannuation fund may exercise their right to switch to another fund as an alternative form of governance. However, comprehensive data on member switching behaviour is currently unavailable. Future research could explore the extent to which dissatisfaction with governance and fund performance influences fund-switching decisions.

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Data Availability Statement

The data that support the findings of this study are openly available on the Australian Prudential Regulation Authority website (https://www.apra.gov.au/statistics-and-reporting) and on each superannuation fund's website.

Endnotes

[1] The Royal Commission recommends that APRA revise prudential standards and guidance for APRA-regulated institutions to design their remuneration system that encourage sound management of non-financial risk and reduce the risk of misconduct where they are regularly assessed by the board (Recommendation 5.3). Moreover, APRA-regulated institutions are to be encouraged to build a culture that mitigates the risk of misconduct and improves entity governance (Recommendation 5.7). To enhance the transparency and market discipline in the superannuation fund industry, APRA has recently introduced *Prudential Standard CPS 511 Remuneration* which requires superannuation funds to publish information on their remuneration design and frameworks.

[2] As of June 2024, the total Australian superannuation assets is about $3.9 trillion Australian dollars.

[3] Superannuation funds lack many of the governance mechanisms to mitigate the agency problems compared to publicly listed firms. For example, superannuation funds do not have large block holding investors acting as an external monitoring mechanism, debtholders as they are prohibited from borrowing under the SIS Act 1993, and a secondary market where members can sell their contributions. Although members can switch funds, their influence over managerial decisions is limited due to low engagement, with the Productivity Commission Inquiry (2018) highlighting low financial literacy of members, the complexity of the superannuation fund system, and a low rate of members switching funds annually (ranging between 2% and 10%) which is mostly due to members changing job or their employer changing fund providers. Therefore, agency costs are higher in superannuation funds and the main governance mechanism for superannuation funds falls to the board of directors (Liu 2014; Yang et al. 2023).

[4] Despite board independence playing an important role in mitigating agency costs, not only is there a lack of board independence in Australian superannuation funds but there is no regulation to have a minimum proportion of independent directors on the board. Therefore, the proportion of independent directors on the board varies across funds (Liu 2014).

[5] For example, in 2021, Mark Delaney, CIO of AustralianSuper, and John Pearce, CIO of UniSuper received total remuneration of over $1.5 million, whilst the CEO of AustralianSuper, Ian Silk received just over $1.1 million and CEO of UniSuper, Keven O'Sullivan received $1 million.

[6] As disclosed in the remuneration policy of several superannuation funds, the CIO's performance is assessed and evaluated annually against their goals and responsibility, in which the outcome of their main responsibility aligns with the fund performance. Their remuneration is reviewed annually and determined based on their performance, skills, and experience, as well as reference to the external and internal benchmarks. While some superannuation funds disclose that the CEO is involved in reviewing CIO remuneration, this process typically occurs in consultation with or is ratified by a board-level committee such as remuneration or governance committee. The board holds ultimate responsibility of remuneration practices as these evaluations are then submitted to the board for final approval. Examples of remuneration disclosures of several superannuation funds are included in Table A2 of Appendix B to highlight the role of governance practices on the link between CIO pay and performance.

[7] Several trustees of retail superannuation funds manage multiple superannuation funds. For example, in 2024, Equity Trustees Superannuation Limited is the trustee of several superannuation funds including AMG Super, National Mutual Retirement Fund, Smart Future Trust, and Super Retirement Fund. Avanteos Investments Limited is a trustee of several super funds, including Avanteos Superannuation Trust, Colonial First State FirstChoice Superannuation Trust, and Commonwealth Essential Super. The investments of these funds are managed by the same executive under the trusteeship, however their pay and performance vary across the funds.

[8] In their review, APRA (2018) indicates that investment managers' compensation of superannuation funds consists of a large proportion of performance-based pay, which focuses on short-term rather than long-term incentives.

[9] The sample period starts in 2014 as Australian superannuation funds were required to disclose information on director and executive compensation since 1 July 2014 under s29QB of the *SIS Act 1993*. Prior to this date, superannuation funds disclosed executive remuneration voluntarily.

[10] On average, CIO salary represents 72.72% of total pay, emphasising that base salary forms a significant portion of overall compensation. The mean salary of CIOs is $322,376. At the lower end, CIOs in the 10th percentile earn $155,298, while those in the 90th percentile receive significantly more, at $565,677. Regarding cash bonuses, there is notable variability as well. The average cash bonus is $78,612, with

a standard deviation of $181,172, highlighting the unequal distribution of bonus payments. This suggests that while some CIOs receive substantial bonuses ($323,715 in the 90th percentile), many receive little or none, as reflected in the 10th and 25th percentiles.

[11] Under the *Prudential Standard CPS 511 Remuneration*, a Board Remuneration Committee is required to have at least 3 members and all members must be non-executive directors (CPS 511.26).

[12] The first two measures use the dollar change in CEO wealth and a percentage change in performance; the third performance measure uses 'the percentage increase in CEO compensation for a 1% increase in firm value' (elasticity); the fourth performance measures 'the dollar change in CEO wealth per $1000 change in firm market value' (similar to the measure used in Jensen and Murphy (1990)).

[13] Various measures of firm performance and compensation components used in prior studies exacerbate the inconclusive evidence of the pay-performance relationship. In terms of firm performance, Lambert and Larcker (1987) argue that market performance is better than accounting performance when measuring CEO performance as future results are the consequences of current CEO activities. In contrast, Boschen et al. (2003) argue that accounting performance is as important as market performance because accounting performance can provide a signal about the CEO's effort and is not affected by the noise in stock price performance. Moreover, prior studies use various components of compensation. Some studies focus on cash-based compensation (Izan et al. 1998), while other studies focus on equity-based compensation (Coulton and Taylor 2002) and total compensation (Chalmers et al. 2006; Schultz et al. 2013).

[14] The mutual fund industry provides some resemblance to Australian superannuation funds. In particular, a large sum of assets invested is managed by managers who make investment decisions that affect the performance of the assets under management.

[15] Some industry superannuation funds do not have CIOs and there is a lack of governance disclosure including CIO compensation. Some funds are no longer operating as they have merged with other superannuation funds.

[16] CIOs include those managers who are the head of investments and are ultimately responsible for investment activities. There are industry superannuation funds with more than one CIO as there are departing and newly appointed CIOs in the same year. CIO tenure is included in the regression to control for their duration of working years in the fund. Untabulated results excluding years with multiple CIOs show similar results to the main findings.

[17] The evidence is consistent with a positive association between CEO compensation and firm size (Mangel and Singh 1993; Hallock 1997; Core et al. 1999; Cyert et al. 2002; Fahlenbrach 2009; Armstrong et al. 2012).

[18] Due to data inconsistency, the age of 50 is used instead of the age of 55.

[19] We also rerun the analyses without winsorising and the main findings remain similar.

[20] The highest paid CIO in the sample is John Pearce ($1,728,817 in 2019) from Unisuper and Mark Delaney ($1,705,837 in 2020) from AustralianSuper. On average, CIOs receive lower compensation in comparison to Australian CFO compensation in listed firms documented by Duong and Evans (2015). Duong and Evans (2015) report that the mean (median) salary, bonus and total cash compensation are $473,877 ($371,255), $281,164 ($100,000) and $896,489 ($540,410), respectively.

[21] Schultz et al. (2013) document that the mean (median) Australian listed firm CEO total compensation is $739,310 ($349,420), salary is $445,010 ($289,770), cash bonus is $127,960 ($0), and for long-term at-risk is $156,090 ($0) for the sample period 2000–2010. Bugeja et al. (2012) document Australian CEO compensation following mergers and acquisitions for the period 2000–2007. They show that the mean (median) salary and bonus for pre-merger, merger completion and post-merger are $965,333 ($560,250), $1,137,258 ($663,771) and $1,383,016 ($747,000), respectively.

[22] Based on the CIOs with full year pay, the untabulated results show that the percentage of change in salary of CIOs each year ranges from 2.3% to 6.6% as CIOs salary is reviewed annually. Furthermore, the correlation between *EXCESS_ROA* and *SALARY_CIO* is positive and significant (the coefficient of Pearson correlation is 0.2925).

[23] The insignificant results of cash bonus may be attributed to differences in how superannuation funds reward cash bonus to CIOs, as well as the fact that some superannuation funds do not offer cash bonuses at all. The following differences in performance measures used to determine cash bonuses help explain the insignificant results: the duration used to measure fund performance, ranging from one year to multiple years; the variation in unit of analysis from corporate fund performance to individual performance; the use of varying performance benchmarks relative to other superannuation funds; and other considerations such as fees charged to members and member retention.

[24] Interestingly, John Pearce from Unisuper and Mark Delaney from AustralianSuper were paid more than the CEO in the same fund in 2020. In 2020, Kevin O'Sullivan, CEO from Unisuper received total compensation of $973,066 and Ian Silk, CEO from AustralianSuper, received $1,111,234. Both CIOs received a higher cash bonus (performance incentives) compared to their CEOs whereas AustralianSuper CEO did not receive any cash bonus in 2020. This suggests that the remuneration structure of CIOs is designed to be compensated based on the investment performance, and not for CEOs as they are responsible for overall management of the fund.

[25] The results remain the same using a different value of the total asset threshold such as $10 billion instead of the median value.

[26] We thank an anonymous reviewer for raising the concerns of the impact of remuneration committee on the CIOs pay-performance link and the alternative measurement of governance practices.

[27] The governance index is composed of the sum of six individual components. The following variables are aggregated and coded as 1 if: the percentage of independent directors on the board of a fund is above the sample median for each year; the chairperson on the board of a fund is independent; the percentage of female directors on the board of a fund is above the sample median for each year; the percentage of directors with financial qualification on the board of a fund is above the sample median for each year; the percentage of directors with prior superannuation fund experience on the board of a fund is above the sample median for each year; the average tenure of directors on the board of a fund is below the sample median for each year.

[28] We have also used alternative measures of governance index by changing the governance index score related to independent director and director with financial qualification variable. Given the discussion on the push for superannuation fund boards to have at least a third of independent directors and directors with financial qualification, we have adjusted the governance index score by adding a score of 1 if the fund has more than a third of independent directors on the board and adding a score of 1 if the fund has at least one director with financial qualification, instead of using the median threshold. The untabulated results using these alternative measures of governance index reveal that the findings remain the same, that is, the governance index is not associated with CIOs pay.

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Appendix A

TABLE A1 | Variable definitions.

Variable	Definition
Totalcomp_CIO	CIO's total compensation
Ln_Totalcomp_CIO	Measured as the natural logarithm of the CIO's total compensation plus 1
Cashbonus_CIO	CIO's cash bonus
Ln_Cashbonus_CIO	Measured as the natural logarithm of the CIO's cash bonus plus 1
Salary_CIO	CIO's salary
Ln_Salary_CIO	Measured as the natural logarithm of the CIO's fixed salary plus 1
ROA	Measured as net earnings after tax divided by total assets
EXCESS_ROA	Measured as the difference between a superannuation fund's *ROA* and the median *ROA* in each year
BSIZE	Measured as the total number of directors on the board
IND_DIR	Measured as the percentage of independent directors on the board
IND_CHAIR	An indicator variable set equal to 1 if a superannuation fund has an independent chairperson on the board, 0 otherwise
FINANCIAL_DIR	Measured as the percentage of directors with financial qualification on the board
FEMALE_DIR	Measured as the percentage of female directors on the board
EXPERIENCE_DIR	Measured as the percentage of directors with prior superannuation fund industry experience on the board
TENURE_DIR	Measured as the average tenure of director on the board (in years)
FEMALE_CIO	An indicator variable set equal to 1 if the CIO is female, 0 otherwise
FINANCIAL_CIO	An indicator variable set equal to 1 if the CIO has financial qualification, 0 otherwise
TENURE_CIO	Measured as the total number of years CIO has been employed in a fund
TA	Measured as the total assets at the end of the period
Ln_TA	Measured as the natural logarithm of *TA*
INV_OPTIONS	Measured as the total number of investment options
Ln_INV_OPTIONS	Measured as the natural logarithm of *INV_OPTIONS*
PRS_AGE	Measured as the percentage of members who are aged 50 or over
DEFAULT_FUNDS	Measured as the percentage of fund invested in the default funds (e.g., MySuper fund)
BENEFITS_RATIO	Measured as a ratio of outflow of members' benefits over inflow of funds contributed by members
CASH	Measured as the percentage of assets allocated to cash
FIXED_INC	Measured as the percentage of assets allocated to fixed income
EQUITY	Measured as the percentage of assets allocated to equity
PROPERTY	Measured as the percentage of assets allocated to property
INFRASTRUCTURE	Measured as the percentage of assets allocated to infrastructure
Totalcomp_CEO	CEO's total compensation
Ln_Totalcomp_CEO	Measured as the natural logarithm of the CEO's total compensation plus 1
Cashbonus_CEO	CEO's cash bonus
Ln_Cashbonus_CEO	Measured as the natural logarithm of the CEO's cash bonus plus 1
Salary_CEO	CEO's salary
Ln_Salary_CEO	Measured as the natural logarithm of the CEO's fixed salary plus 1
FEMALE_CEO	An indicator variable set equal to 1 if the CEO is female, 0 otherwise
FINANCIAL_CEO	An indicator variable set equal to 1 if the CEO has financial qualification, 0 otherwise
TENURE_CEO	Measured as the total number of years CEO has been employed in a fund

(Continues)

TABLE A1 | (Continued)

Appendix B

TABLE A2 | Remuneration disclosure of superannuation funds.

Superannuation fund name	Excerpt from the remuneration disclosure and the annual report
Australian Catholic Superannuation and Retirement Fund (on page 35 of the 2020 Annual Report)	*Our executives, along with all other Fund staff, are remunerated by way of a fixed salary package which takes into account the specific responsibilities and duties of their roles and is reviewed on an annual basis*
AustralianSuper (on pages 66 to 68 of the 2020 Annual Report)	*The People and Culture Committee is primarily responsible for making recommendations to the Board on: fees to be paid to Directors, Alternate Directors and Non-Director Committee Members (Directors); major changes to conditions of employment for colleagues (including Enterprise Agreement negotiations); the remuneration framework for management and colleagues; determining the remuneration for the Chief Executive and other Responsible Persons* *Fixed annual remuneration for executives is determined with reference to levels necessary to recruit and retain staff with the relevant skills and experience and to remuneration levels across the Fund and the relevant market*
Construction and Building Unions Superannuation Fund (Cbus Super) (on page 57 of the 2018 Annual Integrated Report, and page 2 of the 2020 Remuneration Policy Summary)	*The CEO conducts a review of individual performance and considers the remuneration market changes to determine appropriate pay levels for each Group Executive Team member* *Outcomes of performance reviews, remuneration market inputs and CEO recommendations are considered by the People, Culture and Remuneration Committee (formerly the Remuneration Committee) and subject to ultimate approval by the Board* *The appropriate executive's fixed pay is determined based on several factors: external benchmarking to compare remuneration level within the markets in which the Fund operates including a peer group of other profit for member funds; individual performance, skills, and experience*
HESTA (on page 3 of the 2020 Relevant Disclosures)	*HESTA's CEO's performance is assessed annually by the Board (through the Board's Executive Committee). HESTA Executives are also assessed annually by the CEO, with input from the Board Chair and Deputy Chairs*
HOSTPLUS Superannuation Fund (on their website page 'Our Remuneration Policy' (Available at: https://hostplus.com.au/about-us/company-overview/remuneration-policy [Accessed 28 November 2020]))	*Base or fixed salary reviews for Group Executives occur annually, generally in May/June, with increases payable from 1 July in that year* *The Chief Executive Officer conducts the performance assessment for each member of the Group Executive Team, having regard to the operational and financial responsibilities of the Group Executive and the contribution by the Group Executive to the management and leadership of the business* *Hostplus offers variable remuneration in the form of STIs to the CEO and to members of the Group Executive Team. At its discretion, the Board may implement a variable remuneration scheme for non-Executive staff based on individual performance, but linked to overall performance of the Fund*
Intrust Super Fund (on page 1 of the 2020 Remuneration Disclosure)	*All contracts for services for Directors, Chief Executive Officer and Executive Managers are reviewed by the Nominations and Remuneration Committee, with a recommendation being made to the Board on the appropriateness of any remuneration pursuant to a contract of services*
Maritime Super (on page 3 of the 2020 Remuneration Policy)	*Remuneration arrangements for executive management are reviewed by the Remuneration Committee annually. Based on external advice, the Committee will make a recommendation to the Board regarding executive management remuneration for Board approval* *Base salary is set by reference to external benchmark data based on comparable roles in the industry. Salary positioning for each executive is assessed against the market median of the industry benchmark applicable, having regard to their duties, responsibilities, experience and performance against agreed annual performance objectives*
Prime Super (on pages 34 to 36 of the 2020 Annual Report)	*The Fund's remuneration practices are set out in a Remuneration Policy maintained by the Board* *The Chief Executive Officer undertakes an annual review of the performance of the other Executive Officers, including the assessment of any annual performance bonus to be awarded*

(Continues)

TABLE A2 | (Continued)

Superannuation fund name	Excerpt from the remuneration disclosure and the annual report
Sunsuper Superannuation Fund (on pages 4 to 6 of the Disclosure of Remuneration)	*The Board has implemented a process for the periodic review and evaluation of its performance and the performance of its committees, individual Directors and Executive Officers* *Executive Officer remuneration, including the Chief Executive Officer's, is reviewed at least annually. Remuneration levels are benchmarked against independent external sources* *Key Performance Goals are reviewed annually and targets are set, effective 1 July each year, for each Executive Officer. Goals are relevant and specific to each individual Executive Officer's position; and aligned to areas of organisational performance as defined in the Corporate Performance Goals* *The short-term incentive plan for the Chief Investment Officer is based upon investment out-performance compared to benchmarks. The Performance Goal targets are aligned to the investment objectives and are relevant to the needs of Sunsuper members. The Performance Goal targets are reviewed annually, ratified by the Investment Committee and approved by the Board*
Unisuper (on pages 2 to 6 in the 2020 Remuneration Report)	*The Remuneration Committee is responsible for making recommendations to the full Board regarding matters such as: UniSuper's remuneration and rewards program including formulation of the USM Remuneration Policy; The fees to be paid to Directors and non-Director committee members; Remuneration of the CEO and the Executive Leadership Team* *Fixed remuneration is reviewed annually; however, annual fixed remuneration increases are not guaranteed (and are assessed on a case by case basis)* *At the discretion of the USM Board, Executives may be eligible to receive an annual incentive (sometimes referred to as performance-based remuneration) in recognition of higher levels of performance*

Note: The remuneration disclosures are sourced from various documents, including annual reports and relevant remuneration disclosures (including remuneration disclosure required by Section 29QB of the SIS Act). The most recent information available for the sample year has been used. Some excerpts are shortened to highlight the link between performance and pay, and the role of boards on remuneration practices.