THE IMPACT OF SHAREHOLDER ACTIVISM ON CEO REMUNERATION STRUCTURES

***Robyn Cameron, Griffith University**
Jodie Nelson, Griffith University
Parveen Reza, Corporate Travel Management Limited
*****Corresponding Author: Robyn Cameron: Email: r.cameron@griffith.edu.au
Department of Accounting Finance and Economics, Griffith University, Gold Coast Campus, QLD 4222, Australia.

ABSTRACT

Given the long-running controversy surrounding CEO remuneration and the role remuneration played in the GFC, we examine two research questions (1) how did CEO remuneration structures change after the GFC, and (2) how did external corporate governance mechanisms influence the changes in CEO remuneration after the GFC? Using the CEO remuneration structures for the top 150 Australian listed companies from 2007 to 2009 this study makes several important contributions. First, it provides a comprehensive analysis of CEO remuneration structures in Australia during the GFC. Second, it is the first (known) study to examine the influence of shareholder activism, including both retail and institutional investors, on changes in CEO remuneration structures during the GFC. Our findings indicate that whilst the percentage of short-term remuneration did not significantly change after the GFC, there appears that a reduction in the proportion of bonuses after the GFC was accompanied by an increase in salaries. The Australian Shareholders' Association (ASA) and institutional shareholders are associated with a change in remuneration structures, but only where total remuneration levels are higher.

Key Words: CEO remuneration, Corporate governance, Shareholder activism, Global financial crisis

INTRODUCTION

Chief Executive Officer (CEO) remuneration has been a controversial issue over the past 30 years due to concerns over excessive levels of remuneration and inappropriate remuneration structures creating misaligned incentives, thereby leading to short-term, opportunistic behaviour by CEOs at the expense of long-term shareholder wealth creation. The Global Financial Crisis (GFC) brought much attention and scrutiny to CEO remuneration with claims that this misalignment of incentives contributed to the GFC (Fels, 2010; Nesbitt, 2009). While much media criticism at the time focused on the level of remuneration, the composition of CEO compensation received scant attention. The poor composition of CEO pay is likely to be a more serious problem for incentive alignment than the level of remuneration (Jensen and Murphy,1990). Remuneration packages that include shares and share options encourage short-termism at the expense of the firm's long term-objectives (Sikka *et al.*, 2018a).

CEO remuneration structures have become complicated, incorporating a variety of components to better align the interests of the CEO with shareholders. Specific components of the CEO's remuneration package have gained significant attention, namely short-term (or short-term focused) remuneration. Cash bonuses have been strongly criticised for not effectively linking pay with performance and ultimately encouraging short-term behaviour. For example, in 2009 only three of the top 100 ASX-listed companies that made a loss withheld bonuses to senior executives, indicating that bonuses paid under these circumstances are part of defacto base pay (Durkin, 2010). Sikka *et al.* (2018b: 24) propose that bonuses should only be paid in cases of "extraordinary performance" and only then if it relates to the firm's long-term objectives. While equity-based pay now features more in remuneration packages to align the interests of executives with shareholders, if these incentives are poorly designed they can produce incentives for executives to behave in a short-term manner. Top ASX-listed companies are increasingly criticized for designing supposed 'long-term' equity-based incentive plans that in actuality, are short-term focused (ASA, 2007; ASA, 2008).

This increased criticism and scrutiny of CEO remuneration and corporate performance over the duration of the GFC provides a strong motivation for boards to improve remuneration structures and realign CEO behaviour with firms' long-term objectives. Even though CEO remuneration has been the subject of much criticism and debate there is limited literature investigating CEO remuneration structures, including the changes in these structures, as well as the influence of governance mechanisms, such as shareholder activism, on the changes in these structures during a financial shock, such as the GFC.

Given the long-running controversy surrounding CEO remuneration and the role remuneration played in the GFC, we address two research questions: (1) how did CEO remuneration structures change after the GFC, and (2) how did external corporate governance mechanisms influence the changes in CEO remuneration after the GFC? Our measure of remuneration structure is the percentage of short-term remuneration to total remuneration (excluding post-employment benefits). Short-term remuneration includes salaries, non-cash benefits, cash, and share bonuses as per AASB124 '*Related Party Disclosures*'. Superannuation and termination benefits have been excluded due to the uncertainty over their short-term/long-term classifications. Termination benefits are also sizeable by nature and their inclusion can significantly inflate and bias remuneration amounts. Examining the percentage of short-term pay allows us to examine whether firms moved towards more long-term based remuneration structures during the GFC.

In answer to the first research question, our study shows a reduction in the percentage of short-term CEO remuneration from 2007 and 2009. The analysis of remuneration structures reveals that many firms ceased or reduced their short-term bonus schemes. However, this reduction was accompanied by an increase in salaries, perhaps as a means of compensating CEOs without attracting negative attention or moving to more certain forms of remuneration. Many firms that did increase their percentage of short-term remuneration ceased their long-term incentives, possibly due to poor market conditions making performance hurdles unachievable, thereby reducing the ability of

CEOs to benefit from these equity-based incentives. While some firms ceased their long-term incentives, several firms increased the proportion of Long Term Incentive Plans (LTIPs) issued to CEOs, perhaps in an effort to encourage them to create long-term shareholder wealth and better align the CEO's interests with those of the shareholders. Overall, it appears that CEO remuneration structures changed over the GFC for certain groups of firms rather than all firms.

In answer to our second research question, our findings indicate shareholder activism in the form of public criticism by the Australian Shareholder's Association (ASA) is not associated with a change in the structure of CEO remuneration over the GFC. However, when the total level of CEO remuneration is high, firms criticised by the ASA (for misaligned long-term incentive plans) increased the proportion of short-term remuneration and salaries paid to CEOs. In contrast, firms with high institutional shareholdings incorporated a higher percentage of short-term remuneration in their CEO's remuneration packages, but when institutional shareholdings and total remuneration levels are high, firms reduced the proportion of short-term remuneration and salaries paid to CEOs.

This study makes several important contributions to extant literature. First, it provides a comprehensive analysis of CEO remuneration structures in Australia during the GFC. Overall, while firms appear to reduce their short-term remuneration, in particular bonuses, these reductions appear to be compensated by increases in salaries suggesting firms shifted some of the bonuses to less risky, and less scrutinised rewards given the market volatility as a result of the GFC. Interestingly, firms with the highest proportions of short-term remuneration continued to increase the percentage composition of short-term remuneration in the CEO remuneration package. The increases in the proportion of short-term pay evident for these firms may be attributable to the reduction in value of long-term incentives that became worthless due to declining stock prices that were lower than the strike prices attached to equity-based incentives.

Second, it is the first study to examine the influence of shareholder activism, including both retail and institutional investors, on changes in CEO remuneration structures during the GFC. Prior literature has not previously considered the role of the retail shareholder activist organisation, the ASA. Results show that while shareholder activism did not influence changes in remuneration structures over the GFC, it does influence CEO remuneration packages when total CEO remuneration is higher. Furthermore, the results highlight an important distinction in approach across the shareholder activist groups. The ASA appears to focus on the individual components of remuneration packages, in comparison to institutional shareholders who focus on evaluating the complete package.

The remainder of this paper is organised as follows. Section 2 presents an overview of remuneration structures and reviews the literature and theory pertinent to changes in CEO remuneration structures and the role of shareholder activism and develops the hypotheses. The sample, data and the research design are outlined in Section 3. Section 4 reports the descriptive statistics on CEO remuneration structures and changes in these structures during the GFC and the results of the univariate and multivariate tests. Section 5 summarises and discusses the implications of the study.

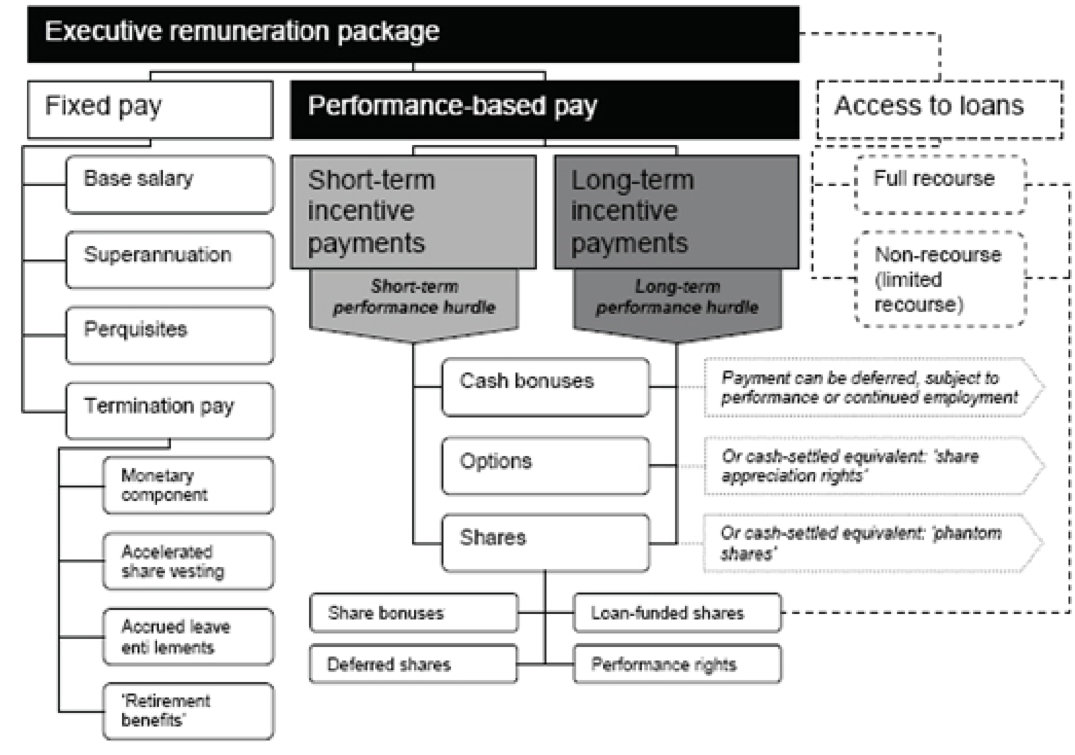
THEORETICAL BACKGROUND AND HYPOTHESES

CEO Remuneration Structures

A marked increase in the level of average remuneration prior to the GFC was noted in the U.S. with average remuneration for U.S. CEO's increasing by more than 150 times (Minnick, Unal and Yang, 2008; Frydman and Jenter, 2010). In Australia the increase in remuneration has also been recorded with median total remuneration increasing by approximately 96 percent for CEOs between 2001 and 2007 (Hill, 2009). Jensen and Murphy (1990) argue that there are significant issues with CEO pay; however, the levels of pay are not the most serious issue, it is the composition of CEO pay that is the core problem. Similarly, Sikka *et al.* (2018a) contend the inclusion of shares and share options in remuneration packages encourages short-termism at the detriment of the firm's long term-objectives.

CEO remuneration structures have become very complicated, incorporating a wide variety of elements to better align the interests of the CEO with the firm's shareholders. A typical CEO remuneration package is presented in Figure 1.1. and shows the variety of both fixed and performance based CEO remuneration with performance based remuneration split into short-term and long-term incentive based payments.

Figure 1.1
CEO Remuneration Structures



Specific elements of the CEO's remuneration package gained significant attention, namely short-term remuneration.[1] Elements that drew strong criticisms included cash bonuses for not effectively linking pay with performance and ultimately encouraging short-term behaviour; incorporating excessive proportions of short-term remuneration and not providing enough long-term remuneration to encourage CEO's to consider the long-term future of the company to improve shareholder value.

Firms worldwide experienced hardship during the GFC, with many economists classifying it as the worst financial crisis since the Great Depression of the 1930s (Elstone, 2008). Thousands of employees around the world were made redundant. In Australia, 124,500 employees were made redundant over the GFC period (Swan, 2010). Despite the significant job losses experienced throughout Australia, the media's attention was brought to the continuous increase in, and structure of, CEO remuneration. In particular, the lack of pay-for-performance link received much attention.

Changes in CEO Remuneration Structures and the GFC

One of the claimed lessons learnt from the GFC is that remuneration structures did not provide appropriately designed long-term incentives to discourage CEOs from participating in short-term high risk activities without considering, or being exposed to, the long-term implications (Bebchuk, 2009; Buiter, 2009). As such, during the GFC significant attention from the media, regulatory bodies, and shareholder activists focused on firms with inappropriate remuneration structures increasing both public concern and awareness over these practices. Bender (2003) argues that legitimacy is very important to firms with regards to CEO remuneration because the remuneration of the firm may affect society's perception of the firm and the stakeholders who provide it with resources. Hence, firms would be expected to adopt widely accepted remuneration policies in order to gain legitimacy and portray a specific image to stakeholders.

During the GFC significant attention was brought on firms with excessive CEO remuneration, in particular high proportions of short-term pay. Shareholders were more vigilant in expressing their anger towards inappropriate remuneration structures that placed greater emphasis on short-term remuneration, raising concerns that CEOs interests were not aligned with future shareholder value. The public concern resulted in government intervention, with the Federal government referring the matter to the Productivity Commission to examine the regulatory framework governing CEO remuneration and to make recommendations to improve the current system (Productivity Commission, 2009).

Given the increased negative attention particularly on the short-term excesses in remuneration, corporate boards are expected to react by realigning CEO remuneration structures by increasing the long-term remuneration components at the expense of short-term components. Such an approach would signal to stakeholders firms'

[1] This study defines short-term remuneration as including salaries, non-cash benefits, cash and share bonuses.

commitment to improving shareholder value by providing the CEO with a greater balance of long-term remuneration.

The GFC has revealed several problems with excessive risk-taking and the misalignment of the CEO's interests with shareholders' interests. Many commentators and researchers attribute the excessive risk-taking and the misalignment to inappropriately designed remuneration structures (Fels, 2010; Core and Guay, 2010). However, much of the literature examining CEO remuneration structures is based in the United States (US) and the United Kingdom (UK) (Jensen and Murphy, 1990; Frydman and Jenter, 2010) as these jurisdictions are well known for their generous CEO remuneration schemes (Hill, 2009). In Australia, few studies have examined remuneration structures around the GFC. In one study, remuneration consulting firm Guerdon Associates (2008) examine changes in CEO remuneration structures between 2007 and 2008. They find that only 30 percent of CEOs received lower total remuneration compared to the 70 percent who received an increase in total remuneration. The proportion of short-term remuneration decreased by three percent compared to an increase of two percent in the composition of long-term remuneration. Within these changes in structure, fixed salaries increased by one percent. Although this study provides initial indications of changes in remuneration structures over the GFC, it may not fully capture the changes because the sample period does not extend beyond the GFC.

Of greater prominence is the Australian Productivity Commission (APC) (2009) report commissioned by the Australian Federal Government. The Commission considered trends in executive remuneration in Australia and overseas (mainly the US and the UK), including the level and structure of remuneration. The report's findings show that CEO remuneration reached its peak in the 2006 and 2007 financial years and then dropped by 16 percent per year across the ASX 100 between 2007 and 2009. Specifically, long-term remuneration reduced by 25 percent and an even greater decrease was recorded for short-term pay. The Productivity Commission (2009) attributes the decline to many firms reducing or freezing some components of their CEO pay for 2009 and 2010. Although the Productivity Commission has quantified a decrease in the level of remuneration, it does not examine the specific changes in remuneration structures over the duration of the GFC.

An Australian study by Anstey *et al.* (2010) empirically examines the structure of remuneration and its relationship with firm performance of 52 firms in the finance industry between 2005 and 2008. In particular, they examine the remuneration of CEOs and the top five executives of the firm. Anstey *et al.* finds that incentive-based pay, including bonuses and long-term incentives, contributed significantly toward the composition of CEO pay with fixed remuneration contributing an average of 27.57 percent towards total CEO remuneration. In another Australian study, Rankin (2010) investigates the level and structure of remuneration from 2006 to 2009, after the enactment of the *CLERP 9 Act (2004)* requiring significant changes to remuneration disclosure requirements. The remuneration of the executive team as well as the CEO is examined, and the results indicate pay structure differences in 2009. Executive salaries and bonuses are higher in 2009 and long-term incentives are lower than in the earlier period. The differences in pay between years are attributed to the economic downturn occurring in 2008 and 2009 although this is not specifically tested.

The above studies indicate that the structure of CEO remuneration has changed over the time of the GFC, however, the results are mixed, not all studies capture the end of the GFC period and in some cases, are specific to particular industries. Accordingly, the following hypothesis stated in null form is proposed:

H1: The proportion of short-term to total CEO remuneration changed after the GFC (2007 to 2009).

Corporate governance: The role of shareholder activism

As a result of the GFC, governance factors became more prominent when examining CEO remuneration. Shareholder activism is increasingly being held out as an effective source of external corporate governance, incorporating retail and institutional shareholders. It is described as a form of monitoring and intervention that attempts to introduce change without changing control of the firm (Gillan and Starks, 1998; Smith, 1996). Shareholder activism is on the rise with many institutional and retail shareholder groups increasingly criticising inappropriate remuneration packages (Sheehan, 2010) and it has been shown to influence company procedures, including CEO remuneration structures (Fahlenbrach, 2008). However, the two types of shareholder activists (retail and institutional) have traditionally operated in different ways, which may induce different corporate responses when firms are pressured to improve CEO remuneration practices.

Retail shareholder activism

Retail shareholder activist groups, such as the ASA, play an important monitoring role in protecting and enhancing the interests of shareholders, challenging those companies that do not act in the best interests of the shareholders (ASA, 2006). Established in 1960, it is claimed that the lobbying by the ASA has helped increase company accountability as well as contribute towards a level playing field for shareholders (Askew, 2008). The ASA primarily focuses its monitoring programs on large companies Executive remuneration is one of the key areas monitored by the ASA and the resulting criticism of remuneration plans is not infrequent. Examples of comments made in the ASA's monitoring reports include:

AMP (AMP):"We criticised the long-term incentive plan, including the use of the single performance hurdle of total shareholder return to determine awards. We again suggested the introduction of a second hurdle and we will continue to press for a better alignment between long-term incentive (LTI) and the interests of shareholders."

COCA COLA AMATIL (CCL): "We voted against the remuneration report because of retesting of the total shareholder return (TSR) hurdle and the reduction of the "at risk" portion of the remuneration package through the conversion of a portion of shares from the long term incentive plan (LTISP) to a new no hurdle executive retention share plan (ERSP)."

> *Primary Healthcare (PRY): "Bonuses totaling $6.5 million were paid to the executives in 2008 on the basis of the successful takeover. These payments are excessive, particularly given that they are linked to a one off event. ASA would have preferred the bonus to be paid over a number of years as the increased earnings from the Symbion transaction flowed through to shareholders."*

In an agency framework, organisations such as the ASA play an important monitoring role in identifying companies whose remuneration structures (or parts thereof) are not in the best interests of the shareholders. Strickland *et al.* (1996) find that retail shareholder groups in the US are successful in convincing firms to change their behaviour and are associated with improvements in shareholder value. Similarly, we expect that managers of firms criticised by the ASA for poor or inappropriate remuneration practices have incentives to change their remuneration structures to better align with shareholders' interests to avoid negative public scrutiny.

Given the uncertainty faced by companies during the GFC coupled with the market volatility where firms are criticised for the design of their long-term incentives, they may move away from using these riskier forms of remuneration towards less risky forms of remuneration, such as salaries and bonuses rather than improve the design of the long-term incentive item. Several companies, when criticised for easing inappropriate performance hurdles in 2008, argued market volatility was the cause of the practice. For example, AGL Energy (AGK) stated: "We were critical of the board's decision to lower the sole long-term hurdle for initial equity awards to the CEO (at the same time the hurdle for maximum awards increased). The argument put forward for this change was "share market volatility". And Alumina (AWC): "We opposed these resolutions because of vesting arrangements and retesting for performance rights. The chairman defended these policies due to volatility of aluminium prices…." Hence, it is expected that where companies are publicly criticised by the ASA for having misaligned long-term incentive plans, they are likely to change their CEO remuneration structures. This prediction is also consistent with legitimacy theory because firms will prefer to avoid being shamed in front of their stakeholders. Therefore, the following null hypothesis is proposed:

> *H2: The proportion of short-term to total CEO remuneration changed after the GFC (2007 to 2009) for companies criticised by the ASA for deficiencies in their long-term remuneration practices.*

Institutional shareholder activism

Prior research argues that because all shareholders, both large and small, benefit from the actions of monitoring shareholders without incurring costs, only large shareholders have significant incentives to monitor management (Noe, 2002). Institutional investors have the ability to influence management's activities directly through ownership in the firm and indirectly by trading their shares in the firm (Gillan and Starks, 2003). Heavy selling by these investors can cause the share price to decline or can be interpreted as bad news thereby triggering sales by other investors, further contributing to a decline in share price (Parrino *et al.,* 2003; Baysinger *et al*., 1991). As such, the involvement of large shareholders in monitoring the firm has the potential to influence management's behaviour and limit agency problems (Noe, 2002). However, not all institutional investors have the same motivations. Some institutional investors, such as pension funds, are perceived to have a long-term horizon primarily because their members are investing for their retirement and would support long-term incentives to encourage long-term wealth creation. Other institutional investors, such as fund managers, are under pressure to show short-term returns as they are rewarded and reviewed based on quarterly, or at most, annual performance results (Aguilera *et al.,* 2007). Accordingly, they are likely to be more supportive of more short-term based incentives to encourage short-term returns.

By interacting and communicating with firms, institutional investors can determine if a firm's remuneration policy is appropriate (David *et al.,* 1998). Hepworth *et al.* (2010) contend that boards have been forced to restructure their remuneration packages due to shareholder pressure, consistent with legitimacy theory, which suggest firms are motivated by external pressure to alter their structures. In an agency framework, institutional shareholders play an important role in pressuring firms to alter their remuneration structures to ensure the alignment of CEO and shareholder objectives. Hartzell and Starks (2003) find that firms with greater institutional shareholdings have a higher pay-for-performance sensitivity and lower levels of executive remuneration. Similarly, Almazan *et al.* (2005) find lower levels of executive remuneration for firms with higher institutional ownership. As such, it is expected that changes in CEO remuneration structures are associated with the level of institutional ownership of the firm. Relative to the ASA, it is expected that institutional investors (who were themselves criticised for their short-term focus pre-GFC) would be more focused on ensuring a longer-term focus in remuneration practices. The preceding discussion leads to the following null hypothesis:

> *H3: The proportion of short-term to total CEO remuneration changed after the GFC (2007 to 2009) for companies with larger institutional ownership.*

In hypothesising about the impact of the GFC on remuneration structures we have assumed that corporate boards would quickly react to external pressures to increase long-term remuneration at the expense of more certain short-term forms of remuneration. However, the GFC created much uncertainty and volatility in capital markets that continues to the present time. This volatility could result in reluctance by firms to rapidly increase riskier forms of long-term, performance-linked remuneration until markets fully stabilise. Consequently, a short study period around the GFC (as used in this study) may not fully capture the changes in structure for all firms.

METHOD

Data and sample selection

The sample of companies is obtained from the Australian Securities Exchange (ASX) top 150 listed companies as at 30 June 2009, ranked by market capitalisation, for the years 2007 and 2009. The years 2007 and 2009 are selected because they indicate the beginning and the end of the financial crisis, respectively. Prior studies, such as Frydman and Jenter (2010) and Raviv and Landskroner (2009), support the selection of these years as a reliable indicator of the pre/post Global Financial Crisis period. To ensure sample homogeneity between the years for testing and comparative purposes, firms were excluded if they: were not listed for both 2007 and 2009 (1 firm); were listed as a trust (14 firms); did not provide a remuneration report (3 firms); their annual report was missing (3 firms); or they did not have a CEO (3 firms) giving a final sample of 126 companies. The Connect 4 Annual Report and Board Room databases are used to collect the CEO remuneration data and internal corporate governance data**.** Aspect Huntley's *FinAnalysis* database is used to obtain company financial information. Institutional shareholdings are collected from the OSIRIS database. Table 1 outlines the sample's industry composition classified using GICS industry sectors.

Table 1
Industry Composition of Sample Firms (n=126)

Industry (GICS Sector)	Frequency	Percentage of Sample
Industrials	20	15.87
Consumer Staples	7	5.56
Financials	26	20.63
IT	2	1.59
Utilities	3	2.38
Materials	28	22.22
Health Care	7	5.56
Telecommunications Services	3	2.38
Energy	15	11.90
Consumer Discretionary	15	11.90
Total	126	100%

The ASA's criticisms of firms' remuneration practices are collected from the ASA's monthly journal, *Equity* and were coded by topic and presented in Table 2.

Table 2
Coding of ASA Comments*

	2007			2008		
Topic	**Positive**	**Neutral**	**Negative**	**Positive**	**Neutral**	**Negative**
DISC	0	0	1	0	0	1
FEES	0	1	0	0	0	0
LT	**13**	**4**	**25**	**6**	**3**	**67**
REMN	4	1	1	5	6	0
RETN	0	0	1	0	0	0
ST	15	6	7	15	4	22
TREM	0	0	3	0	0	2
RREP	4	2	5	2	3	13
TERM	0	0	0	0	0	1
Total	36	14	43	28	16	106

*This table represents the number of comments made, not the number of firms.
DISC: disclosure of remuneration; FEES: director's fees; LT: long-term incentives; REMN: remuneration structure; RETN: retention payments; ST: short-term incentives; TREM: total remuneration; RREP: remuneration report; TERM: termination payments.

First, the comments relating to remuneration were identified; a research assistant then coded these comments more specifically. The coding was reviewed by another researcher to verify and ensure consensus in the interpretation of comments and the coding methodology. A comment was viewed as negative and coded as ‘1’where the ASA was openly criticising the remuneration item or voting against it. Comments where the ASA was voting in favour of the item or commending the practice were viewed as positive and coded as ‘0’. Comments where the ASA commented on the item but did not appear to criticise nor favour the practice were viewed as neutral and also coded as ‘0’. Table 2 presents the results of coding the ASA’s comments.

Research model

The dependent variable in this study is the change in CEO remuneration structures (*ΔSTRUCT*), which is defined as the proportion of short-term remuneration in a CEO’s remuneration structure. For example, if there is 20 percent short-term remuneration to total remuneration, the 80 percent difference is the percentage of long-term remuneration. Consistent with AASB124 ‘*Related Party Disclosures*’, short-term remuneration includes the dollar value of salaries, cash bonuses, share bonuses, and non-cash benefits. Long-term remuneration includes the dollar value of the fair value of options, rights, and performance share grants made in the current and previous financial years (Anstey *et al.*, 2010). The percentage of short-term remuneration is calculated by dividing total short-term remuneration by total remuneration, excluding post-employment benefits. Post-employment remuneration, such as superannuation and termination payments, is excluded because of the potential for bias when analysing the results due to the large nature of these amounts. The dependent variable, *ΔSTRUCT,* measures the change in the percentage of short-term (long-term) remuneration between 2007 and 2009. Changes in remuneration are calculated by subtracting the 2007 percentage of short-term remuneration from the 2009 percentage.

Hypothesis testing procedures

To investigate how CEO remuneration structures changed from 2007 to 2009 (research question one), we first examine summary statistics of the dependent variable, *ΔSTRUCT*. Many remuneration studies, especially those examining percentage compositions, most commonly use the median percentage to interpret their descriptive statistics (see for example, Sapp, 2008; Blackwell, Dudney and Farrell, 2007). Hence, the sample is then divided into quintiles based on the percentage of short-term remuneration to compare the median across quintiles. This approach is adopted to explain the descriptive analysis in this study. The non-parametric statistical hypothesis test (Wilcoxon Rank Sum Test) is used to compare the quintiles in 2007 and 2009, testing hypothesis 1. We then formally investigate hypotheses 2 and 3 using multivariate regression procedures to test the influence of external corporate governance on the changes in CEO remuneration structures to answer research question two. The model presented below is used to test the hypothesised associations with the changes in CEO remuneration structures.

$$\Delta STRUCT_{it} = \beta_1 + \beta_2 LTASACRIT_{it} + \beta_3 INTSH_{it} + \beta_4 LEVEL{*}LTASACRIT_{it} + \beta_5 LEVEL{*}INTSH_{it} + \beta_6 RCIND_{it} + \beta_7 RCEXP_{it} + \beta_8 BRDSIZE_{it} + \beta_9 BRDIND_{it} + \beta_{10} BRDEXP_{it} + \beta_{11} CEOCHG_{it} + \beta_{12} CEOCHR_{it} + \beta_{13} SIZE_{it} + \beta_{14} LEVERAGE_{it}$$

$$+ \beta_{15}\Delta PERFORM_{it} + \beta_{16}PERFORM_{it} + \beta_{17}LEVEL_{it} + \beta_{18}INDUSTRY_{it} + \varepsilon_{it} \quad (1)$$

Where:

Dependent variables:

ΔSTRUCT = change in the percentage of short-term remuneration from 2007 to 2009 measured as the percentage of short-term remuneration in 2009 minus the percentage of short-term remuneration in 2007.

Independent variables and controls:

LTASACRIT = 1 if firm criticised by the ASA for long-term remuneration practices in 2007 or 2008; 0 otherwise (criticisms made in 2007 and 2008 are included to allow time for firms to react to the criticism and change their practices);

INTSH = 1 for high institutional shareholdings, 0 otherwise (split at median = 43 percent in 2007; 48 percent in 2009);

*LEVEL*LTASACRIT* = *LEVEL* multiplied by *LTASACRIT;*

*LEVEL*INSTSH* = *LEVEL* multiplied by *INTSH*;

RCIND = 0 for no independent directors on remuneration committee, 1 for at least one independent director on remuneration committee, and 2 for 100 percent independent directors on remuneration committee;

RCEXP = 0 for no directors with business qualifications on remuneration committee, 1 for at least one director with business qualifications on remuneration committee, and 2 for 100 percent of directors with business qualifications on remuneration committee;

BRDSIZE = Number of directors on the board;

BRDIND = 0 for no independent directors on board, 1 for at least one independent director on board, and 2 for 100 percent independent directors on board;

BRDEXP = 0 for no directors with business qualifications on board, 1 for at least one director with business qualifications on board, and 2 for 100 percent of directors with business qualifications on board;

CEOCHG = 1 for a change in CEO from 2007 to 2009, 0 otherwise;

CEOCHR = 1 for combined CEO and chairperson, 2 for separate CEO and chairperson but chairperson is executive, 3 for separate CEO and chairperson with a non-executive chairperson;

SIZE = Log of market capitalisation;

LEVERAGE = Financial leverage measured by total assets divided by shareholder equity;

ΔPERFORM = Return on assets in 2009 minus return on assets in 2007;

PERFORM = Return on assets measured as net income divided by total assets;

LEVEL = Level of total CEO remuneration in 2007 deflated by total assets;

INDUSTRY = 1 for firms in Financials industry; 0 otherwise.

Model 1 (a pooled OLS regression model) is used to examine the influence of external corporate governance mechanisms on changes in CEO remuneration structures over the GFC. A significant *LTASACRIT* coefficient and a significant negative *INTSH* coefficient would provide support for H2 and H3, respectively. Given that CEOs can be awarded substantial amounts of remuneration, it is expected that where firms award higher amounts of remuneration to the CEO, shareholder activist groups will be more active in ensuring CEOs are remunerated appropriately. To control for materiality in the level of CEO remuneration and further test H2 and H3, two interaction variables are included in Model 1, *LEVEL**LTASACRIT* and *LEVEL*INTSH.* A significant *LEVEL**LTASACRIT* coefficient and a significant negative *LEVEL*INTSH* coefficient would also provide support for H2 and H3, respectively. Following previous remuneration studies, controls for firm size (Chalmers *et al.,* 2006; Sapp, 2008), leverage (Bryan *et al.,* 2006), performance (Rankin, 2010), remuneration committee independence (Anderson and Bizjak, 2003), remuneration committee expertise (Sapp, 2008), board size (Core *et al.,* 1999), board independence (Daily *et al.,* 1998), board expertise (Pearce and Zahra, 1991), and chairperson independence (Rankin, 2010) are included to control for other factors likely to explain changes in CEO remuneration structures from 2007 to 2009. Financials industry is also controlled (Murphy, 1999; Matolcsy and Wright, 2007). During the GFC, the Financials industry was heavily criticised for their excessive and inappropriate remuneration practices leading to short-term risk-taking behaviour. In sensitivity tests, dummy variables for other industries were tested, however, unreported results show these variables are not significant.

The variables *SIZE*, *LEVERAGE*, *PERFORM, LEVEL, INDUSTRY,* and *CEOCHR* are likely to be negatively associated with a change in CEO remuneration structures, while *CEOCHG* is expected to be positively associated with a change in remuneration structure. No prediction is made for the association between *RCIND, RCEXP*, *BRDSIZE, BRDIND,* and *BRDEXP* and a change in CEO remuneration structure.

RESULTS AND DISCUSSION

Descriptive statistics and univariate testing

Table 3 presents results of quintile analysis and univariate testing on remuneration structures in 2007 and 2009. Panel A of Table 3 shows that overall short-term (long-term) remuneration comprised the majority (minority) of total remuneration, with a median of 65.50 percent (34.50 percent) in 2007 and 62.50 percent (37.50 percent) in 2009. It is also evident that the percentage of short-term remuneration declined from 2007 to 2009 suggesting that firms may have been responding to external pressure to change their remuneration structures. When examining these remuneration structures in more depth, Panel B shows the short-term oriented components that dominate the package include salaries (approximately 31 percent) and bonuses (Panel C, approximately 20 percent). Interestingly, it appears that while the percentage of bonuses decreased from 2007 (20 percent) to 2009 (17 percent), salaries increased from 2007 (31 percent) to 2009 (34 percent). These results suggest that while companies appear on the surface to be acting in shareholder interests by reducing bonuses (one of the more publicly criticised forms of remuneration during the GFC), they are transferring some of that remuneration to the CEO’s fixed salary, which received less attention and is less risky. However, Fels (2010) argues that paying fixed salaries to a CEO in a period when the company is performing poorly is just as much a case of rewarding failure. The long-term remuneration item dominating CEO remuneration is LTIPs (17 percent in 2007 and 21 percent in 2009). The increase observed in long-term incentives over the GFC may be as a result of firms trying to align (or appearing to align) the interests of the CEO with shareholders in a time of economic uncertainty where shareholders, including shareholder activists, may be concerned about long-term wealth creation and the survival of the firm. Alternatively, these changes may also have occurred because of pressure from the ASA and institutional shareholders as predicted.

Given the extreme values observed in remuneration data, further analysis was undertaken after dividing the sample into quintiles based on their remuneration structures. Table 3 also presents the results of the univariate Wilcoxon Rank Sum tests on the change in CEO remuneration structures from 2007 to 2009 for each quintile and overall. In each panel, the remuneration quintiles are ranked from the lowest percentage of short-term remuneration (Q1) to the highest percentage of short-term remuneration (Q5).

Table 3
Results of quintile analysis and univariate testing on remuneration structures in 2007 and 2009

	2007 (n=126)		**2009 (n=126)**			
Quintile	**Mean**	**Median**	**Mean**	**Median**	**Change in median (2009-2007)**	**Wilcoxon Rank Sum Test z-stat**
Panel A: Short-term (long-term) remuneration (STRUCT)						
Q1	.286	.320	.305	.335	.015	.634
Q2	.502	.500	.517	.520	.020	1.501^
Q3	.634	.640	.628	.630	-.010	-.599
Q4	.788	.775	.777	.765	-.010	-.535
Q5	.988	1.00	.986	1.00	.000	.899
Overall	.643	.655	.625	.625	-.030	-.525
Panel B: Salary (SALARY)						
Q1	.119	.130	.125	.140	.010	.383
Q2	.235	.240	.239	.240	.000	.561
Q3	.322	.320	.323	.320	.000	.103
Q4	.453	.460	.432	.420	-.040	-1.940*
Q5	.745	.705	.724	.685	-.020	-.493
Overall	.375	.310	.405	.340	.030	1.537^
Panel C: Bonuses (BONUS)						
Q1	.024	.000	.012	.000	.000	1.633^
Q2	.135	.130	.118	.120	-.010	-2.858**
Q3	.204	.190	.220	.230	.040	1.631^
Q4	.304	.290	.312	.320	.030	.814
Q5	.491	.450	.484	.440	-.010	-.228
Overall	.233	.200	.184	.170	-.030	-2.186**
Panel D: LTIP (LTIP)						
Q1	.006	.000	.007	.000	.000	1.359^
Q2	.107	.110	.098	.090	-.020	-1.012^
Q3	.182	.170	.188	.190	.020	.934
Q4	.270	.270	.277	.275	.005	.942
Q5	.463	.470	.489	.460	-.010	-.360
Overall	.205	.170	.231	.210	.040	1.207
Panel E: Minority CEO remuneration elements[1]						
NONCSH	.016	.000	.016	.000	.000	.002

OTHER ST	.011	.000	.014	.000	.000	.262
SHBONUS	.008	.000	.006	.000	.000	-1.468*
OPTIONS	.086	.000	.046	.000	.000	-1.790*
RIGHTS	.056	.000	.068	.000	.000	2.146*
PERFSH	.010	.000	.030	.000	.000	2.085*

ˆ, *, and ** Significant at 0.1, 0.05 and 0.01 levels, respectively (one-tailed tests).
⊥ Most firms did not use these elements of remuneration, hence they grouped into the one percentile (Q5) rather than being across percentiles.
STRUCT is the proportion of short-term remuneration to total remuneration; *SAL* is the proportion of salaries to total remuneration; *BONUS* is the proportion of cash bonuses to total remuneration; *NONCSH* is the percentage of non-cash benefits to total remuneration; *OTHER ST* is the proportion of other short term remuneration to total remuneration; *SHBONUS* is the proportion of share bonuses to total remuneration; *LTIP* is the proportion of long-term incentive payments to total remuneration; *OPTIONS* is the proportion of options granted in the current financial year to total remuneration; *RIGHTS* is the proportion of rights granted in the current financial year to total remuneration; *PERFSH* is the proportion of performance shares granted in the current financial year to total remuneration.

Panel A reports the percentage of short-term remuneration across all quintiles and tests Hypothesis 1. The results show the percentage of short-term remuneration in the lower quintiles (Q1 and Q2) increased from 2007 to 2009. The results for the mid-range and upper quintile, Q3 and Q4, indicate a decrease in the percentage of short-term remuneration from 2007 to 2009. The firms in Q3 were not expected to reduce their percentage of short-term remuneration as they are not paying higher proportions of remuneration that may attract negative public attention. However, firms in Q4 (upper quintile) are paying a larger proportion of short-term remuneration and may reduce this amount upon scrutiny of their practices. Surprisingly, firms in the top quintile (Q5), which includes firms with very high proportions of short-term remuneration, did not change the proportion of short-term remuneration after the GFC. Although the descriptive results indicate changes in CEO remuneration structures, the change is not statistically significant. Unreported results of a pooled OLS regression using a year dummy variable also show a non-significant result for differences in remuneration structures between 2007 and 2009.

Panel B shows that the proportion of CEO salaries increased from 2007 to 2009 and is consistent with reports that salaries have significantly increased in order to provide more certainty to remuneration packages (Hepworth *et al*., 2010). As expected, the lower quintiles experienced a slight increase (Q1) or no change (Q2 and Q3) compared to the upper quintiles where a decrease in salaries is observed in both Q4 and Q5. The decrease in the proportion of CEO salaries from 2007 to 2009 is only significant for the upper quintile (Q4).

Panel C reports a significant reduction in the percentage of bonuses from 2007 to 2009 consistent with firms moving away from cash bonuses perhaps due to bonuses being the subject of much criticism and scrutiny over this time. In particular, the change in bonuses for Q2 is negative and significant. The lowest quintile, Q1, experienced no change in bonuses. The middle quintiles (Q3 and Q4) increased their proportion of bonuses paid to CEOs, while firms in the top quintile (Q5), decreased the proportion of CEO bonuses.

Panel D shows an increase in the proportion of LTIPs from 2007 to 2009 consistent with firms further aligning the interests of the CEO with shareholders encouraging CEOs to increase the long-term wealth of the firm. In a similar manner to changes in the proportion of bonuses, firms in Q1 did not change from 2007 to 2009 and the firms in Q2 and Q5 decreased the proportion of LTIPs, while the middle quintiles (Q3 and Q4) increased LTIPs. The changes in LTIPs from 2007 to 2009 are not significant overall, or for any quintile.

The results for the remaining CEO remuneration components are reported in Panel E. These components do not form a significant portion of CEO remuneration structures and are not discussed in depth. However, it is interesting to observe that the decrease in the proportion of share bonuses (short-term) and options (long-term) from 2007 to 2009 is significant, and the increase in the proportion of rights (long-term) and performance shares (long-term) is significant even though these components are minor parts of the CEO remuneration package. These results indicate that firms changed the type of performance-based remuneration used after the GFC. Taken together, the statistics presented in Table 3 provide only limited support for Hypothesis 1.

Multivariate test results

Table 4 reports the descriptive statistics of the variables used to test Model 1. The untabulated correlation results indicate several statistically significant coefficients; however, no high correlations exist among the variables. All OLS regressions have been performed using White's adjustment for heteroskedasticity.

Table 4
Descriptive statistics – change in CEO remuneration explanatory variables (n=126)

Continuous Variables:			
	Mean	**Median**	**Std. Dev**
ΔSTRUCT	-.014	-.010	.300
ΔSALARY	.023	.020	.250
ΔBONUS	-.045	-.036	.019
ΔLTIP	.028	.015	.219
*LEVEL*LTASACRIT*	.000	.000	.003
*LEVEL*INTSH*	.001	.000	.003
RCIND	1.38	1.00	.578
RCEXP	.905	1.00	.446
CHRIND	2.905	3.00	.367
BRDSIZE	8.032	8.00	2.055
BRDIND	2.016	2.00	.154
BRDEXP	2.020	2.00	.188
SIZE	9.486	9.370	.585
LEVERAGE	.514	.480	.250
ΔPERFORM	-.027	-.020	.143
PERFORM	.037	.040	.094
LEVEL	.002	.001	.004
Dichotomous Variables:	**Score**	**Frequency**	**Percentage of Sample**
LTASACRIT	1	52	41.27
INSTH	1	70	49.21
INDUSTRY	1	26	20.63

CEOCHG	1	10	7.94
ΔSTRUCT is the change in the proportion of short-term remuneration from 2007 to 2009; *ΔSALARY* is the change in proportion of salaries to total remuneration from 2007 to 2009; *ΔBONUS* is the change in proportion of bonuses to total remuneration from 2007 to 2009; *ΔLTIP* is the change in proportion of LTIP to total remuneration from 2007 to 2009; *LEVEL*LTASACRIT* is *LEVEL* multiplied by *LTASACRIT*; *LEVEL*INTSH* is *LEVEL* multiplied by *INTSH*; *RCIND* is 0 for no remuneration committee independence, 1 for some remuneration committee independence, and 2 for 100 percent remuneration committee independence; *RCEXP* is 0 for no remuneration committee expertise, 1 for some remuneration committee expertise, and 2 for 100 percent remuneration committee expertise; *CHRIND* is 1 for a combined CEO and chairperson, 2 for a separate CEO and executive chairperson, and 3 for a separate CEO and non-executive chairperson; *BRDSZE* is the total number of directors on the board; *BRDIND* is 0 for no board independence, 1 for some board independence, and 2 for 100 percent board independence; *BRDEXP* is 0 for no board expertise, 1 for some board expertise, and 2 for 100 percent board expertise; *SIZE* is the log of market capitalisation; *LEVERAGE* is total liabilities divided by total assets; *ΔPERFORM* is the change in return on assets measured as net income divided by total assets; *PERFORM* is change in return on assets, measured as net income divided by total assets, from 2007 to 2009; *LEVEL* is total CEO remuneration in 2007 (excluding post-employment benefits); *LTASACRIT* is 1 for criticisms of long-term remuneration by the ASA in 2007 or 2008; 0 otherwise; *INTSH* is 1 for high institutional shareholdings, 0 otherwise; *INDUSTRY* is coded as 1 for firms in the Financial sector; 0 otherwise; *CEOCHG* is coded as 1 for change in CEO in 2009; 0 otherwise.			

Table 5 reports the regression analysis of external governance and firm-specific factors expected to influence 1) the change in proportion of short-term CEO remuneration after the GFC, and 2) changes in the proportion of CEO salaries, bonuses, and LTIPs, which are the major components of CEO remuneration.

Table 5
Results of OLS regressions of the effect of corporate governance on the change in structure of CEO remuneration from 2007 to 2009 (n=126)

Explanatory variable	**Pred. Sign**	***ΔSTRUCT* Coefficient (t-stat)**	***ΔSALARY* Coefficient (t-stat)**	***ΔBONUS* Coefficient (t-stat)**	***ΔLTIP* Coefficient (t-stat)**
Intercept		-2.143	-0.903	-1.422	0.890
		(-4.180)**	(-1.740)^	(-3.860)	(1.750)
LTASACRIT	?	-0.039	0.019	0.017	-0.011
		(-0.830)	(0.430)	(0.500)	(-0.260)
INTSH	?	0.161	0.123	0.015	-0.088
		(2.960)**	(2.480)*	(0.380)	(-1.800)^
*LEVEL*LTASACRIT*	?	33.250	17.535	-5.507	-7.905
		(5.560)**	(2.770)**	(-1.140)	(-1.360)
*LEVEL*INTSH*	?	-20.420	-15.892	-1.985	6.696
		(-2.490)*	(-2.870)**	(-0.400)	(1.150)
RCIND	?	-0.089	-0.014	-0.046	0.021
		(-2.030)*	(-0.340)	(-1.490)	(0.560)
RCEXP	?	0.006	0.014	0.001	0.026
		(0.110)	(0.280)	(0.030)	(0.620)
CHRIND	+	-0.131	-0.172	0.049	0.144
		(-2.620)**	(-2.740)**	(2.000)*	(3.640)**
CEOCHG	-	0.320	0.184	0.124	-0.152
		(2.460)**	(2.760)**	(1.770)*	(-2.020)*
BRDSZE	?	-0.003	-0.001	-0.009	0.005
		(-0.210)	(-0.100)	(-0.870)	(0.350)

BRDIND	?	0.602	0.293	0.274	-0.145
		(9.790)*	(4.330)**	(7.220)**	(-2.520)*
BRDEXP	?	0.288	0.150	0.153	-0.181
		(3.480)**	(1.740)ˆ	(3.080)**	(-1.500)
SIZE	-	0.087	0.048	0.063	-0.075
		(1.550)ˆ	(0.980)	(1.710)ˆ	(-1.560)ˆ
LEVERAGE	-	-0.111	-0.039	-0.155	0.131
		(-1.030)	(-0.370)	(-1.920)*	(1.400)ˆ
∆PERFORM	-	0.026	-0.379	0.368	0.123
		(0.140)	(-2.180)*	(2.480)**	(0.800)
PERFORM	-	-0.217	0.075	-0.102	-0.047
		(-0.700)	(0.280)	(-0.450)	(-0.180)
LEVEL	+	5.160	6.001	-0.824	-0.127
		(3.700)**	(6.760)**	(-0.690)	(-0.140)
INDUSTRY	+	-0.088	0.008	-0.058	-0.007
		(-1.180)	(0.120)	(-1.090)	(-0.110)
p-value		0.000	0.001	0.045	0.083
Adj-R^2		0.234	0.196	0.091	0.073

ˆ, *, ** Significant at the 0.1, 0.05 and 0.01 levels, respectively (one-tailed test).
∆STRUCT is the change in the proportion of short-term remuneration from 2007 to 2009; *∆SALARY* is the change in proportion of salaries to total remuneration from 2007 to 2009; *∆BONUS* is the change in proportion of bonuses to total remuneration from 2007 to 2009; *∆LTIP* is the change in proportion of LTIP to total remuneration from 2007 to 2009; *LTASACRIT* is 1 for criticisms of long-term remuneration by the ASA in 2007 or 2008; 0 otherwise; *INTSH* is 1 for high institutional shareholdings, 0 otherwise; *LEVEL*LTASACRIT* is *LEVEL* multiplied by *LTASACRIT*; *LEVEL*INTSH* is *LEVEL* multiplied by *INTSH*; *RCIND* is 0 for no remuneration committee independence, 1 for some remuneration committee independence, and 2 for 100 percent remuneration committee independence; *RCEXP* is 0 for no remuneration committee expertise, 1 for some remuneration committee expertise, and 2 for 100 percent remuneration committee expertise; *CHRIND* is 1 for a combined CEO and chairperson, 2 for a separate CEO and executive chairperson, and 3 for a separate CEO and non-executive chairperson; *CEOCHG* is coded as 1 for change in CEO in 2009; 0 otherwise; *BRDSZE* is the total number of directors on the board; *BRDIND* is 0 for no board independence, 1 for some board independence, and 2 for 100 percent board independence; *BRDEXP* is 0 for no board expertise, 1 for some board expertise, and 2 for 100 percent board expertise; *SIZE* is the log of market capitalisation; *LEVERAGE* is total liabilities divided by total assets; *∆PERFORM* is the change in return on assets measured as net income divided by total assets; *PERFORM* is change in return on assets, measured as net income divided by total assets, from 2007 to 2009; *LEVEL* is total CEO remuneration in 2007 deflated by total assets (excluding post-employment benefits); *INDUSTRY* is coded as 1 for firms in the Financial sector; 0 other

Contrary to Hypothesis 2, which predicts that companies criticized by the ASA for deficiencies in their long-term incentive plans are more likely to change their CEO remuneration structures, Table 5 shows the *LTASACRIT* coefficient is not significant in any of the regressions. These results suggest that the ASA has no direct influence on changing CEO remuneration structures, which may be attributable to the ASA criticising specific aspects of remuneration plans, rather than focusing on the complete package.

These findings also assume that the ASA is critical of CEO remuneration regardless of the overall level of remuneration. However, the size of total remuneration (*LEVEL*) is also likely to be an influencing factor as evident in Table 5. The results show when total CEO remuneration is relatively higher and the long-term incentive plan is criticised by the ASA (*LEVEL*LTASACRIT*), companies increase the proportion of short-term remuneration after the GFC. This finding is evident by the significant ($p<0.01$) positive (33.250) *LEVEL*LTASACRIT* coefficient. The *LEVEL*LTASACRIT* coefficient is also significant ($p<0.01$) and positive (17.535) for changes in the proportion of CEO salaries, but not for a change in bonuses or LTIPs. Taken together these findings suggest that the ASA may be better placed to evaluate remuneration packages as a whole rather than focus on the specific elements of these packages.

Hypothesis 3 proposes that firms with high institutional shareholdings will change the proportion of short-term CEO remuneration after the GFC. As hypothesised, the *INTSH* coefficient is significant ($p<0.01$) and positive (0.161) indicating that firms with high institutional ownership increased the proportion of short-term CEO remuneration after the GFC. The *INTSH* coefficient is also significantly ($p<0.05$) and positively (0.123) related to changes in the proportion of salaries, but significantly ($p<0.10$) and negatively (-0.088) related to changes in the proportion of LTIPs. It is not significantly related to a change in bonuses. On face value, these findings suggest that institutional shareholders may be focused on short-term results by ensuring CEOs are remunerated in a manner that will encourage short-term gains at a time when the economy is experiencing a downturn, a result supported by the reduction in the proportion of LTIPs after the GFC. However, further analysis reveals that when firms pay higher total CEO remuneration and have high institutional ownership (*LEVEL*INTSH*), they decrease the percentage of short-term CEO remuneration ($p<0.05$) and the percentage of CEO salaries ($p<0.01$) suggesting that institutional investors tend to monitor the complete remuneration package and are influential in shifting remuneration towards more long-term remuneration where CEOs already receive larger amounts of short-term remuneration.

The internal governance control variables included in the model have varying explanatory power. The significant negative *RCIND* coefficient indicates that a more independent remuneration committee is associated with the decline in the proportion of short-term CEO remuneration after the GFC suggesting that the remuneration committee influences the remuneration package as a whole, rather than individual components, such as salaries, bonuses, and LTIPs. A change in CEO (*CEOCHG*) is significantly related to an increase in the proportion of short-term remuneration, salaries and bonuses, and a decrease in the percentage of LTIPs. These results are consistent with new CEO's remuneration packages comprising large amounts of short-term remuneration to attract and retain these executives. The *CHRIND* coefficient is negative and significant indicating that a more independent chairperson is associated with a reduction in the percentage of short-term CEO remuneration and salaries, but increases the proportion of bonuses and LTIPs, suggesting that a more independent chairperson influences the aligning of the interests of the CEO with shareholders by awarding more performance-based remuneration. Board independence (*BRDINDP*) is positively associated with a change in CEO remuneration structures, salaries, and bonuses and is negatively associated with a change in the proportion of LTIPs. This finding suggests that more independent boards are encouraging a move away from long-term incentives to short-term remuneration perhaps due to the economic uncertainty created by the GFC thereby remunerating the CEO with less risky forms of remuneration. Further, a board with more business qualifications (*BRDEXP*) encourages an increase in the proportion of short-term CEO remuneration and bonuses after the GFC, but has no influence on a change in the proportion of salaries or LTIP.

In addition to testing the corporate governance mechanisms individually, a composite governance measure was also used. Brown *et al.* (2011) highlighted that more studies are employing composite governance measures because it is unlikely that a single characteristic can measure the overall quality of a firm's corporate governance system. Given that much of the accounting literature focuses on particular aspects of corporate governance, we analyse the effect of corporate governance on changes in CEO remuneration structures using the composite governance measure, the Horwath Index (Beekes and Brown, 2006; Gallery, *et al.* 2008). The untabulated results report that the Horwath Index is not significant, which suggests that this Index may be too broad to capture the effect of corporate governance on the changes in CEO remuneration structures.

Among the firm-specific control variables, firms with higher leverage (*LEVERAGE*) reduce the proportion of bonuses paid to CEOs. Firms whose performance improved (Δ*PEFORM*) after the GFC decrease the proportion of salaries and increase the proportion of bonuses paid to CEOs, which is consistent with rewarding CEOs for improved performance. The higher levels of total remuneration paid in 2007 (*LEVEL*) is significantly related to an increase in the proportion of short-term CEO remuneration and salaries only. The coefficients on the remaining control variables in Model 1 (*RCEXP*, *SIZE*, *PERFORM, LEVEL, INDUSTRY,* and *BRDSIZE)* are not statistically significant indicating that the variables are not associated with CEO remuneration changes pre/post the GFC.

SUMMARY AND DISCUSSION

In the aftermath of the GFC it has been suggested that excessive corporate short-termism in the lead up to the crisis was a pervasive contributor to the crisis. The short-termism has been attributed to poorly aligned management incentives arising from inappropriate remuneration structures. Thus, the GFC provides an interesting setting in which to examine the changes in structure of CEO remuneration. Accordingly, this study examines how CEO remuneration structures changed after the GFC (from 2007 to 2009) and how external corporate governance mechanisms, such as shareholder activism, influenced those changes.

This study makes several contributions to the literature. Different from prior research, we focus on the change in CEO remuneration structures over the GFC period, examining all components of CEO remuneration. Prior literature examining the structure of CEO remuneration is limited with much of the research focusing on the levels of remuneration paid to CEO. Further, no known research examines the impact of shareholder activism, including both retail and institutional shareholder activism, on the changes in CEO remuneration structures.

In answer to research question one, the results reveal that firms incorporated a high percentage of short-term remuneration in their CEO remuneration packages. Specifically, more than half of total remuneration consisted of short-term remuneration for the top ASX-listed firms. However, the percentage of short-term remuneration did not significantly change after the GFC. This result may be due to changes occurring in specific groups of firms rather than all firms. Surprisingly, an in-depth analysis of CEO remuneration structures revealed that firms reduced their short-term bonuses and transferred this reduction to salaries, possibly in an attempt to compensate the firm's CEO without using a more controversial form, or alternatively, a more stable form of remuneration that is not linked to the market.

In answer to research question two, the results show that firms targeted by the ASA for the design of their long-term incentive plans are not related to changes in the structure of CEO remuneration after the GFC. However, when firm's award higher total CEO remuneration and are criticised by the ASA for poorly designed long-term incentive plans, they increase (decrease) the proportion of short-term (long-term) remuneration. This finding suggests that the ASA may be better placed to evaluate remuneration packages as a whole rather than focus on the specific elements of these packages. The results further indicate that firms with high institutional shareholdings increased the proportion of short-term CEO remuneration, indicating larger shareholders may be acting in the interests of their own investors in ensuring the CEO is remunerated in a manner to encourage short-term gains in a time of economic downturn. However, when these firms with high institutional shareholdings pay larger amounts of total remuneration to their CEO they decrease (increase) the proportion of short-term (long-term) CEO remuneration. This latter result suggests that in contrast with the ASA, institutional shareholders tend to monitor the entire remuneration package. However, in considering these results, an alternative perspective to consider would be that perhaps the impact of both types of shareholder activism are more significant when total remuneration is higher because these levels of remuneration generally attract more attention.

While it is reassuring to observe a decrease (increase) in the percentage of short-term (long-term) CEO remuneration after the GFC, these changes have only occurred in firms with modest proportions of short-term remuneration. While a decline in bonuses was observed, it appears that firms transferred these funds from bonuses, a controversial and performance-based form of remuneration, to less risky salaries, revealing a need for further monitoring and regulation by regulatory bodies of these firms. As such, our study highlights to researchers the importance of examining remuneration structures not only on an overall basis, but also the nature (short- versus long-term), the components, and their relative magnitudes in the total remuneration packages.

Overall, our study highlights the increasingly important role of shareholder activism, both retail and institutional, in influencing CEO remuneration, particularly during an economic downturn when remuneration may be perceived as not appropriately aligned with corporate performance and long-term objectives. The results of this study have implications for retail shareholder groups, such as the ASA, as an effective form of external corporate governance, which is an area that is relatively unexplored. The results show the ASA influence changes in CEO remuneration structures over the GFC where total remuneration levels are higher. However, the ASA perhaps needs to exercise caution when targeting firms for poor remuneration design and may be better placed to evaluate remuneration packages as a whole rather than focus on the specific elements of these packages. They may be creating unintended outcomes when directing most of their criticisms at these components, that is, rather than improve the practice firms tend to shift away from those practices to avoid the criticism. The results also demonstrate to retail shareholders that the ASA is gaining momentum and can have the ability to influence change, which may encourage more retail shareholders to engage with the ASA where they feel they have no voice as a small investor.

Our results are subject to several limitations. First, the sample size is small, mainly due to the selection criterion to include the same companies for both years included in the study. Second, the timeframe of this study is a limitation. This study argues the end of the GFC was the year 2009. Including the year 2010 would give a clear picture of the post-GFC CEO remuneration packages as some firms may have still been in a process of change. Third, the details of the short- and long-term incentives were not considered in this study, for example, performance hurdles and KPI's. Last, the impact of the changes in CEO remuneration structures on performance was not examined.

REFERENCES

Aguilera, R. V., D. E. Rupp, C. A. Williams and J. Ganapathi, (2007), "Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations", *Academy of Management Journal,* Vol. 32 No. 3, pp.836-863.

Anderson, R. and J. Bizjak. (2003), "An empirical examination of the role of the CEO and the compensation committee in structuring executive pay", *Journal of Banking and Finance,* Vol. 27 No. 1, pp.1323-1348.

Anstey, J., M. Rankin and M. Strydom. (2010), "Executive remuneration structure and performance in the australian finance sector", 2010 American Accounting Association Annual Meeting and Conference on Teaching and Learning in Accounting.

Askew, K. (2008), "Shareholder activism on the rise", *The Age,* May 23.

Australian Shareholders' Association. (2006), About the ASA. http://www.asa.asn.au (accessed July 28, 2010).

Australian Shareholders' Association. (2007), ASA monitoring list. http://www.asa.asn.au/Miscellaneous/ASAMonitoringList2007.pdf (accessed July 25, 2010).

Australian Shareholders' Association. (2007), ASA Equity. Available at: http://australianshareholders.com.au/asa_site/images/pdf_archive/EquityMagazine (accessed November 3, 2010).

Australian Shareholders' Association. 2008. ASA Equity. Available at: http://australianshareholders.com.au/asa_site/images/pdf_archive/EquityMagazine (accessed November 3, 2010)

Australian Shareholders' Association. 2010. ASA monitoring list 2010. Available at: http://www.asa.asn.au/Miscellaneous/ASAMonitoringList2007.pdf (accessed July 25, 2010).

Bebchuk, L. (2009), "The new order must deter short-term gambles", *The Australian Financial Review*, July 17.

Beekes, W. and P. Brown. (2006), "Do better-governed Australian firms make more informative disclosures?", *Journal of Business Finance and Accounting,* Vol. 33, pp. 422-450.

Bender, R. 2003. How executive directors' remuneration is determined in two FTSE 350 Utilities. *Corporate Governance* 11 (3): 206-217.

Blackwell, D. W., D. M. Dudney and K. A. Farrell. (2007), "Changes in CEO compensation structure and the impact on firm performance following CEO turnover", *Review of Quantitative Finance and Accounting,* Vol. 29, pp. 315-338.

Bryan, S., R. Nash and A. Patel. (2006), "Can the agency costs of debt and equity explain the changes in executive compensation during the 1990s?", *Journal of Corporate Finance,* Vol. 12 No. 3, pp. 516-535.

Brown, P., W. Beekes, and P. Verhoeven. (2011), "Corporate governance, accounting, and finance: A review", *Accounting and Finance,* Vol. 51 No. 1, pp. 96-172.

Buiter, W. H. (2009), "Lessons from the Global Financial Crisis for regulators and supervisors", working paper, London School of Economics and Political Science.

Chalmers, K., P. Koh and G. Stapledon. (2006), "The determinants of CEO compensation: Rent extraction or labour demand", *British Accounting Review*, Vol. 38 No. 3, pp. 259-275.

Core, J. E. and W. R. Guay. (2010), "Is pay too high and are incentives too low? A wealth-based contracting framework", *Academy of Management Perspectives,* Vol. 24 No. 1, pp. 5-19.

Core, J. E., R. W. Holthausen and D. F. Larcker. (1999), "Corporate governance, Chief Executive Officer compensation, and firm performance", *Journal of Financial Economics,* Vol. 51, pp. 371-406.

Daily, C. M., J. L. Johnson, A. E. Ellstrand and D. R. Dalton. (1998), "Compensation committee composition as a determinant of CEO compensation", *Academy of Management Journal,* Vol. 41 No. 2, pp. 209-220.

Durkin, P. (2010), "Losses no bar on bonuses", *The Australian Financial Review,* May 21.

Elstone, R. 2008. Worst Crisis Since Great Depression *The Australian*. April 12.

Fahlenbrach, R. (2008), "Shareholder rights, boards, and CEO compensation", *Review of Finance*, May, 1-33..

Fels, A. (2010), "Executive remuneration in Australia", *Australian Accounting Review,* Vol. 52 No. 20, pp. 76-82.

Frydman, C. and D. Jenter. (2010), "CEO compensation", *Annual Review of Financial Economics, Annual Reviews,* Vol. 2 No. 1, pp. 75-102.

Gallery, G., E. Cooper., and J. Sweeting. (2008), "Corporate disclosure quality: Lessons from Australian companies on the impact of adopting International Financial Reporting Standards", *Australian Accounting Review,* Vol. 18, pp. 257-273.

Gillan, S. and L. Starks. (1998), "A survey of shareholder activism: Motivation and empirical evidence", *Contemporary Finance Digest,* Vol. 2, pp. 10-34.

Gillan, S. and L. Starks. (2003), "Corporate governance, corporate ownership, and the role of institutional investors: A global perspective", *Journal of Applied Finance,* Vol. 13 No. 2, pp. 4-22.

Guerdon Associates. (2008), "The real story on CEO pay over the last year". Available at: http://www.guerdonassociates.com/News-Detail.asp?cid=&navID=&NewsID=257 (accessed October 21, 2010).

Hartzell, J. C. and L. T. Starks. (2003), "Institutional investors and executive compensation", *The Journal of Finance,* Vol. 8 No. 6, pp. 2351-2374.

Hepworth, A., D. Kitney and T. Lee. (2010), "Boards rejig executive pay deals", *The Australian,* September 6.

Hill, J. G. 2009. New Trends in the Regulation of Executive Remuneration. Working paper, Faculty of Law at University of Sydney.

Jensen, M. C. and K. J. Murphy. (1990), "CEO incentives – It's not how much you pay, but how", *Harvard Business Review,* Vol. May-June 1990 No. 3, pp. 138-153.

Matolcsy, Z. and A. Wright. (2007), "Australian CEO compensation: The descriptive evidence", *Australian Accounting Review,* Vol. 17 No. 3, pp. 47-59.

Minnick, K., H. Unal and L. Yang. 2008. Pay for Performance? CEO Compensation and Acquirer Returns in BHCs. Working paper, Anderson School of Management at University of California, Los Angeles.

Nesbitt, J. (2009), "The role of short-termism in financial market crises", *Australian Accounting Review,* Vol. 19 No. 4, pp. 314-318.

Noe, T. (2002), "Institutional activism and financial market structure", *Review of Financial Studies,* Vol. 15, pp. 289-319.

Parrino, R., R. Sias, and L. Starks. (2003), "Voting with their feet: Institutional ownership changes around forced CEO turnover", *Journal of Financial Economics,* Vol. 68 No. 1, pp. 3-46.

Pearce, J. A. and S. A. Zahra. (1991), "The relative power of CEOs and boards of directors: Associations with corporate performance", *Strategic Management Journal,* Vol. 12, pp. 135-153.

Productivity Commission. (2009), *Executive remuneration in Australia,* Canberra: Productivity Commission.

Rankin, M. (2010), "Structure and level of remuneration across the top executive team", *Australian Accounting Review,* Vol. 20 No. 3, pp. 241-255.

Raviv, A. and Y. Landskroner. 2009. The 2007-2009 Financial Crisis and Executive Compensation: Analysis and a Proposal for a Novel Structure. Working paper, International Business School at Brandeis University.

Sapp, S. (2008), "The impact of corporate governance on executive compensation", *European Financial Management Journal,* Vol. 14 No. 4, pp. 710-746.

Sheehan, K. (2010), Submission executive remuneration issues paper corporations and markets advisory committee August 2010. Available at: http://www.camac.gov.au/camac/camac.nsf/byHeadline/PDFSubmissions_5/$file/KSheehan_Exec_Rem.pdf (accessed October 18, 2010).

Sikka, P., Hudson, A., Hadden, T., Willmott, H., Christensen, J., Cooper, C., …Veldman, J., (2018a), A Better Future for Corporate Governance: Democratising Corporations for their Long-Term Success. September. Available at: https://www.researchgate.net/publication/327861085_A_Better_Future_for_Corporate_Governance_Democratising_Corporations_for_their_Long-Term_Success (accessed March 5, 2019).

Sikka, P., Hudson, A., Hadden, T., Willmott, H., Christensen, J., Cooper, C., …Veldman, J., (2018b), Controlling Executive Remuneration: Securing Fairer Distribution of Income. Technical Report, November. Available at: https://www.researchgate.net/publication/329591831_Controlling_Executive_Remuneration_Securing_Fairer_Distribution_of_Income (accessed March 6, 2019).

Smith, M. (1996), "Shareholder activism by institutional investors: Evidence from CalPERS", *The Journal of Finance,* Vol. L1, pp. 227-252.

Strickland, D., K. W. Wiles and M. Zenner. (1996), “A requiem for the USA: Is small shareholder monitoring effective?”, *Journal of Financial Economics*, Vol. 40, pp. 319-338.