Promotion Incentives, CEO Appointments and Firm Performance

Maria Strydom* and Michaela Rankin
Department of Accounting and Finance, Monash University, Melbourne, Australia

Abstract

Executive remuneration is often criticised as being excessive and not clearly linked to firm performance. This study further examines the link between pay and performance by examining the impact of promotion-based tournament incentives. Our hypotheses draw on tournament theory of labour economics which argues that the 'gap' between the remuneration of CEO and other senior executives creates a tournament-style competition for promotion amongst ambitious senior executives. The efforts of these highly motivated executives have a positive influence on overall firm performance. Whilst tournament theory is well studied in the US and UK (Conyon et al. 2001; Kale et al. 2009; Gong et al. 2011), Australian evidence is sparse. Our empirical analysis therefore seeks to better understand the determinants of tournament incentives, particularly surrounding the appointment of a new CEO. Further, we test whether firm performance is influenced by the magnitude of tournament incentives. Our results suggest that tournament incentives play a significant role in enhancing firm performance, but that this positive impact is somewhat reduced after a change in CEO. We also find that closer alignment of CEO pay (through equity compensation) is positively associated with firm performance. In regards to the determinants of tournament incentives we find that tournament incentives are lowest after a change in CEO. This study therefore contributes to the topical debate on executive compensation by providing evidence on the effectiveness of tournament incentives and their relationship to firm performance in the Australian environment. It is one of the first to examine whether tournament incentives play any role in the pay-for-performance relationship in Australia and findings are likely to be of interest to researchers, policy makers, corporations and their shareholders, given the increased current focus on executive compensation and the lack of clear alignment with firm performance.

Keywords: Executive pay, promotion, tournament theory

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* Contact Author: maria.strydom@monash.edu

1. Introduction

This project adds to a modest Australian literature that examines the relationship between executive remuneration and firm performance and in particular how tournament incentives influence this. The remuneration of executives in Australian companies has long been the subject of criticism in the media and in government circles. In particular, the link between executive compensation and firm performance, and the levels of executive compensation has been questioned. A report commissioned by the Australian Council of Super Investors (ACSI) found that the bonus portion of CEO remuneration packages had no correlation with company performance (Collett, 2006).

Criticism of remuneration levels has only intensified in the wake of the global financial crisis. As a result, the Australian government instituted a Productivity Commission review of executive pay practices in 2009 (Productivity Commission, 2009) and the resulting legislative changes came into effect from 1 July 2011. These include the requirement for an independent remuneration committee; and implementation of a 'two strikes' and re-election requirement where there is a greater than 25% 'no' vote by shareholders on the remuneration report. The issue of executive pay practices is therefore an issue of significant relevance to corporate Australia.

Despite widespread public criticism, labour economists argue that performance incentives must be sufficient to attract, retain and – importantly – motivate the best executives (Johnston, 2002). Accordingly, much research effort has been devoted to examining the link (if any) between remuneration levels and firm performance (see for example Core et al., 1999; Chalmers et al., 2006). The majority of prior research that examines the relationship between executive pay and firm performance produces mixed, often weak results. A strong association between pay and performance only appears to be evident in studies that incorporate incentive compensation in the measure of executive pay (e.g., McKnight and Tomkins, 1999).

Scholars have also argued that the remuneration disparity between the CEO and other senior executives may have a *positive* motivational influence, which leads to improved performance (Lazear and Rosen, 1981). This view flows from the 'tournament incentives' created by the remuneration gap (that is the substantial, and arguably increasing, pay gap that exists not only between the CEO and general employees, but also between the CEO and other senior executives). Conscious of the potential pay rise that accompanies promotion to CEO, highly-motivated senior executives are likely to engage in a tournament-style competition for promotion, with potential positive impacts on overall firm performance.

The above arguments suggest that any examination of the impact of executive remuneration on firm performance should incorporate both tournament-style promotion incentives as well as traditional measures of financial remuneration (Kale et al., 2009). Accordingly, the primary aim of this research project is to conduct the first study that contemporaneously examines the relationship between the performance of Australian firms and the pay and tournament facets of executive remuneration. In addition to examining the traditional measures of financial remuneration, we extend prior work by considering the impact of promotion-based 'tournament incentives' on firm performance. We test several hypotheses relating to the determinants of tournament incentives, particularly surrounding the appointment of a new CEO and the choice between internal and external candidates. We then proceed to re-examine the relation between pay and performance, with several definitions of 'pay' that include tournament incentives.

We make a number of contributions to the literature. Firstly, the study will be amongst the first internationally to comprehensively test the impact of tournament incentives on firm performance in a setting that considers inside versus outside CEO appointment. Further, international studies that have considered promotion-based tournament incentives tend to focus on the gap between CEO and worker remuneration (Lazear and Rosen, 1981; Becker and Huselid, 1993). By measuring the promotion incentive as the gap between CEO and senior executives' remuneration, our approach is

better aligned with the tournament theory discussed above as it is senior executives, after all, who are most likely to bid for the position of the CEO.

We also make a substantial contribution to Australian executive compensation research. Whilst prior Australian research has investigated the pay-performance relationship (Matolcsy and Wright, 2007; Doucouliagos et al., 2009; Rankin, 2010), the impact of tournament incentives is yet to be examined.

The research approach is similar in spirit to Kale et al., (2009) who examine the relationship between firm performance and executive incentives (both traditional and tournament-based) for US companies. However, differences between US and Australian corporate structures raise questions over the generalisability of their findings (Aggarwal et al., 2007). For example, while a US CEO tends to be supported by a number of Vice Presidents or divisional heads, this structure does not necessarily exist in Australia (Rankin, 2010). This difference has an impact on the way we identify the level of management directly below the CEO. The use of shares and options as incentive pay is also different in Australian firms, when compared to the US. While options generally have a vesting period of 10 years in US firms, this is most often restricted to five years in Australian entities.

Utilising a sample of listed Australian firms for the period 2004 – 2010 we document a significant, positive association between tournament incentives and firm performance. We also show that the appointment of a new CEO decreases this relationship somewhat. In regards to alignment of CEO compensation, we find that higher levels of incentive-aligned pay are associated with improved firm performance. Our final model shows that a change in CEO decreases tournament incentives, arguably due to the decreased likelihood of promotion from level two or three executive to the top job at that time.

Our paper is organised as follows. In section 2 we present a review of the literature and develop our hypotheses. Our sample, variables and empirical models are described in section 3. Our results follow in section 4, with concluding remarks presented in section 5.

2.   Literature review and hypotheses development

Remuneration studies generally focus only on the compensation of the CEO (see for example Ang, Hauser and Lauterbach, 1998; Chalmers et al., 2006; Core et al., 1999). US research that investigates remuneration of top executives in addition to that of the CEO has tended to examine cash-based compensation only (see for example O'Reilly, Main and Chrystal, 1988; Ryan and Wiggins, 2000). The level of compensation of a firm's CEO can serve as a benchmark for other employees to value their own contribution and worth to the organisation. For instance, when lower level managers are underpaid relative to the CEO they are more likely to leave the organisation (O'Reilly, Wade and Pollock, 2006). O'Reilly et al. (2006) highlighted the importance of consistency and fairness in the design of executive compensation contracts extending beyond the CEO of a firm. It therefore seems as if the gap, or difference in pay between the CEO and other senior executives play an important role in how these executives value their worth to the organisation.

Executive pay structure and the differentials between successive levels in the organisation have, however, also been compared to a series of tournaments (Lazear and Rosen, 1981). The tournament theory literature focuses on pay differentials across all levels within the firm, however limited research has examined what is generally known as the 'final tournament' (Lambert, Larker and Weigelt, 1993; Srivastava and Insch, 2007) – the competition between the CEO and the senior management team. The tournament model has been used to explain the reason for large CEO compensation levels compared to other executives (Ryan and Wiggins, 2000), as there is the

assumption that executives at the lower level are willing to forgo some earnings in order to 'compete' for the ultimate prize, thus driving up compensation at higher executive levels (O'Reilly et al., 1988). Excessively large CEO compensation packages are not simply a reward for excellent performance, but also a tool of incentive alignment for all executives in the organisation (Rees, 1992). Paolo and Vieito (2012) presents recent US evidence that tournament theory explains the pay differential between the CEO and Vice Presidents in firms where the CEO is male, however with female CEOs behavioural theory is more relevant to understanding the differential.

Bebchuk, Cremers and Peyers (2011) argue that the differential between CEO pay and the rest of the executive team can be an indication of agency problems and rent extraction, as opposed to tournament incentives. They find that the greater the fraction of total top executive pay that goes to the CEO (which the authors refer to as the 'CEO pay slice' or CPS), the lower firm performance. However Bebchuk et al. (2011) point out that there are two likely reasons that firms may differ in the optimal amount of CPS. First, CEOs may differ in their relative ability or contribution, and firms may differ in the extent to which it is optimal to offer tournament incentives to encourage lower level executives. Second, firms might differ in terms of the extent to which CPS varies from the optimal level as a result of CEO power or influence over the board.

2.1 Firm performance and tournament incentives

Lazear and Rosen (1981) propose that a significant pay differential between the CEO and lower management levels is expected to promote improved performance by managers at the lower levels of management. Kale et al. (2009) refers to this as promotion-based tournament incentives. In a typical rank-order tournament, the best performer, relative to his or her peers, is promoted to the next level in the hierarchy (Lazear and Rosen, 1981; Kale et al., 2009). The promise of higher pay attached to promotion is likely to provide managers with incentives to exert greater effort, which is likely to lead to higher levels of firm performance. This leads to our first hypothesis that firm performance improves as the tournament prize increases:

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H1: Firm performance is positively related to the magnitude of tournament incentives, proxied by the pay differential between CEO and senior executives.

Tournament-based incentives related to the probability of promotion are likely to be affected by the recent appointment of a new CEO. At this time, the previous tournament for the top prize – the CEO's job – is over and a new tournament is just underway (Kale et al., 2009). This leads to lower expectations of imminent promotion and consequently lower tournament incentives. As such, we expect the the relationship between firm performance and tournament incentives to be weaker:

H2: The relationship between firm performance and pay differentials is weaker in the year following the appointment of a new CEO than in other years.

2.2 The impact of a change in CEO on the size of the tournament prize

The expected payoff to an executive upon promotion to CEO is a function of the size of the prize and the probability of gaining promotion (Kale, et al. 2009). All things being equal, an increase in the probability of promotion is likely to decrease the prize size, and vice versa (Kale et al., 2009). As previously indicated, when a new CEO is appointed, the tournament for the CEO's job effectively ends and a new tournament commences, and is in its infancy. Therefore, the probability of a current senior executive being promoted to CEO in the near future diminishes, thereby increasing the pay gap:

H3: The pay differential is greater in a year in which the firm has just hired a new CEO.

When a new CEO is hired, and that appointment comes from outside of the firm (i.e., inside executives have been passed over), the probability that one of these insiders will be the next CEO decreases further. Again, this is hypothesised to widen the pay gap:

H4: The widening in the pay differential will be greater when the new CEO is an outsider (and insiders are passed over).

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3.   Research method

3.1   Data sources and sample period

The sample selection procedure commenced by obtaining executive and CEO compensation data from the SIRCA corporate governance database for the period 2004 – 2010. This yielded a sample of 5,554 executive observations of compensation relating to 1,069 firms (see Table 1). Next, we eliminate 879 observations (for 163 firms) where no CEO is listed or where there are less than three non-CEO executives in the firm. Financial data required to calculate: Tobin's Q, return on assets, total shareholders return, firm size and data to estimate a measure of the quality of compensation committee governance is obtained from Aspect Huntley's *FinAnalysis* database as well as from the SIRCA corporate governance database for the sample period (variable measurement is discussed in section 3.2 below). Those firm-years for which this data is not available are deleted and the remaining data is trimmed (eliminating a combined total of 2,315 observations for 429 firms) leaving 2,360 observations for 477 firms which constitutes the starting sample for this study.

[Insert Table 1 about here]

3.2   Variable Measurement

To test our hypotheses, proxies are constructed for two primary variables: a measure of tournament incentives and firm performance. The magnitude of tournament incentives is the gap between remuneration of the CEO and other senior executives (denoted *DIFFERENTIAL* and broken down into several components as shown in Table 2). Since corporate structure in Australia differs from that in the US, careful thought must be given to how 'senior executives' are identified. Consistent with Conyon et al. (2001) and Lambert et al. (1993), we assign executives to three different levels based on their position description in the Directors' Report: Level 1 = CEO; Level 2 = Divisional heads, which includes executives, other than the CEO, with the highest authority within the division. This includes presidents, managing directors of major divisions or business

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units. Finance directors are also included in this level. Level 3 incorporates other executives, which includes executive directors with mainly functional duties such as company secretary, human resource director, legal director, marketing director etc.

[Insert Table 2 about here]

After assigning executives to these categories, several measures of the *DIFFERENTIAL* are calculated. The first two are the difference between CEO pay (Level 1) and the median of Level 2 and Level 3 executives respectively.

Finally, consistent with prior research (see for example Kale et al., 2009; Rankin, 2010), several alternative measures of remuneration are considered: (i) Short term compensation (*ST Comp*) which includes salary + bonus + other annual payments; (ii) Long term compensation (*LT Comp*) which includes options granted + long-term incentive payments + restricted share grants; and (iii) Total compensation (*Total Comp*) which is calculated as *ST Comp + LT Comp*. *DIFFERENTIAL* can be estimated for each measure of remuneration (these are referred to as STGAP, LTGAP and TGAP).

The second primary variable required is a measure of firm performance (denoted *PERF*). We examine both accounting- and market-based proxies: (i) Tobin's Q = (market value of equity + book value of debt)/book value of total assets (*TOBIN*), (ii) Total Shareholder Return (*TSR*), and (iii) Return on Assets (*ROA*).

3.3   Empirical models

The models employed to test our hypotheses are adapted from Kale et al. (2009) and Conyon et al. (2001). Pooling the sample over years and firms, Model (1) regresses firm performance (*PERF*) on tournament incentives (*DIFFERENTIAL*), along with assorted control variables. A significantly positive β_1 will support hypothesis 1. Similarly, β_5 will be negative if the relationship weakens after

the appointment of a new CEO (hypothesis 2). β_2, if positive and significant, will indicate that increased alignment between CEO pay and performance increases firm performance.

$$PERF_t = \alpha_0 + \beta_1DIFFERENTIAL_t + \beta_2ALIGN_t + \beta_3NEWCEO_t + \beta_4INSIDECEO_t +$$
$$B_5DIFFERENTIAL_t*NEW_t + \beta_6SIZE_t + \beta_7SIZESQ_t + \beta_8GOV_t + \sum\beta_{9-17}INDUSTRY_t + \varepsilon_t \quad (1)$$

Where: *PERF* and *DIFFERENTIAL* are as previously defined, and
   $ALIGN_t$ = a variable measuring the alignment of CEO pay with performance, modified from
      Kale et al. (2009) – see Table 2.
   $NEWCEO_t$ = 1 for first year as CEO, 0 otherwise
   $IBSIDECEO_t$ = 1 for CEO has been with firm for at least 1 year prior to becoming CEO, 0
      otherwise
   $SIZE_t$ = natural logarithm of total assets$_t$
   $SIZESQ_t$ = the squared value of firm size as in Kale et al. (2009)
   GOV = a governance score based on a range of remuneration committee governance
      measures calculated as per Sun et al. (2009)
   $INDUSTRY_t$ = Dummy variables indicating industry according to two-digit GICS codes

Model (2) tests hypotheses 3 and 4, relating to the determinants of tournament incentives. β_1 will be significantly positive if the arrival of a new CEO increases tournament incentives (hypothesis 3). β_3 will be significantly positive if tournament incentives increase when the new CEO comes from outside (hypothesis 4). All models will be estimated with clustered standard errors for firm and year effects (consistent with Petersen, 2009).

$$DIFFERENTIAL_t = \alpha_0 + \beta_1NewCEO_t + \beta_2InsideCEO_t + \beta_3NewCEO_t*InsideCEO_t +$$
$$+ \beta_4SIZE_t + \beta_5GOVERNANCE_t + \beta_6MedianINDUSTRY_t + \beta_9GOV+$$
$$\sum\beta_{9-17}INDUSTRY_t \, \varepsilon_t \quad (2)$$

4. Results

4.1 Descriptive statistics

Descriptive statistics relating to the components of tournament incentive measures (*DIFFERENTIAL*) as well as to control variables are presented in Table 3. Statistics are presented for the full sample period (2004 – 2010). The mean differential between short-term CEO pay and the median pay of level 2 executives (*STGAP12*) is $421,911 with a minimum (maximum) value of -$6,000,000 ($19,483,765). The mean differential between short-term CEO pay and that of level 3 executives (*STGAP13*) is similar at $459,407 with a slightly higher maximum value ($27,894,726).

The pay differential between CEO long-term pay and that of level 2 (*LTGAP12*) and 3 (*LTGAP13*) executives were smaller than for the short-term components, with means of $172,701 and $194,099 respectively. In terms of total compensation gap, the differential between the CEO and level 2 executives (*TGAP12*) is smaller (at $694,053) than that for level 3 executives (at $748,889) with substantial variation between the minimum and maximum values (*SD LTGAP12* = $1,299,501; *SD LTGAP13* = $1,480,537).

[Insert Table 3 about here]

The descriptive statistics relating to the three performance measures implemented in this study (Tobin's Q; *ROA* and *TSR*) are also presented in Table 3. The average Tobin's Q for sample firms is 1.989 with a minimum (maximum) value of 0.506 (14.29). There is substantial variation in the total shareholders return values (*TSR*) in the sample with a mean of 18.9% and standard deviation of 24.7%. Return on assets (*ROA*) in turn has a mean value of -0.018 and range between -1.761 and 0.371. *ALIGN*, our measure of the extent to which CEO incentives are aligned with performance, has a mean value of 4.1% whilst firm size (*SIZE*) is, on average, 8.223. Our measure of compensation committee governance (*CGOV*) (based on Sun et al. 2009) is ordinal and has a minimum (maximum) value of 0 (3) and a mean of 0.891.

In terms of nominal, dichotomous variables employed in our models, there are 540 new CEO's in our sample (22.9%) and 40% of all CEO's were appointed from within the organisation. A breakdown of the industry membership of sample firms is also presented.

4.2 Empirical results

The first of our two models aimed to test hypotheses 1 and 2, relating to whether tournament incentives, or the differential between CEO and executive pay, are positively related to firm performance and whether this relationship decreases when a new CEO is employed. The results (presented in Table 4) show firstly the relationship between short-term pay differences (short term pay incentive) and performance (Panel A) whilst that relating to long-term pay differences (or long-

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term pay tournament incentives) and total tournament incentives are presented in Panels B and C respectively.

Short term tournament incentives are significantly positively associated with all performance measures, supporting hypothesis 1. In particular, a positive and significant relationship is documented between CEO and both level 2 and 3 executives' short term compensation and Tobin's Q (t-stat = 3.53 and 3.87 respectively with a 1% chance of type 1 error). Similar results are documented for both total shareholders return (*STGAP12* t-stat = 3.28***; *STGAP13* t-stat = 1.73*) and return on assets (*STGAP13* t-stat = 1.99**).

[Insert Table 4 about here]

The second hypothesis estimated through model 1 determines whether the documented positive relationship between short-term tournament incentives and performance decreases when a new CEO is appointed. Our results, in panel A of Table 4, do not support this conjecture. Whilst the alignment variable (*ALIGN*) is not significant for all performance measures and pay differentials, it does appear to play a role in improving firm performance, particularly in regards to return on assets (and thus accounting performance). The coefficient for our alignment variable is both positive and significant (at the 1% error rate) for *STGAP12* (t-stat = 6.07***) and *STGAP13* (t-stat = 6.19***) in the model with return on assets as dependent variable. A significant positive relationship is also documented for *STGAP12* in relation to Tobin's Q (t-stat = 1.70*). A significant positive relationship is documented between size, corporate governance and several industry variables in relation to Tobin's Q, indicating that larger firms and those with good compensation committee governance outperform other firms. Size is also significant in relation to total shareholders return, whilst a negative significant relationship is documented with return on assets (the accounting measure of return).

Next, in panel B of Table 4 we examine the same relationships employing a long-term measure of pay differential. As with short-term pay differential, we documented a significant

positive relationship between tournament incentive size and firm performance across all three measures of performance employed. Both *LTGAP12* and *LTGAP13* is positively and significantly related to Tobin's Q (t-stat = 6.57*** and 5.40*** respectively) and these measures are similarly significant for total shareholders return and return on assets, and support hypothesis 1. Alignment is significant for *LTGAP13* in relation to Tobin's Q, providing further support that CEO incentive alignment is positively associated with market measures of firm performance.

In relation to the second hypothesis, it appears that the increase in firm performance (and Tobin's Q in particular) from large long-term tournament incentives is mitigated somewhat after a new CEO is appointed (t-stat = -2.12** for *LTGAP12* and t-stat = -2.34** for *LTGAP13*), providing support for hypothesis 2. The results from the total shareholders return and return on assets models, however, are not significant.

Firm size is again significant across all models and whilst an inverse relationship is documented between size and market-based measures of performance (*Tobin's Q* and *TSR*) the opposite is again true for the accounting based measure (*ROA*) as was found for the short-term incentive gap.

Our final measures of tournament incentives (*TGAP12* and *TGAP13*) estimates the gap between the total compensation of CEO and level 2 and 3 executives. The results, in panel C of Table 4, are consistent with those documented thus far. Specifically, the total pay differential gap is positive and significant (at the 1% error level) for both Tobin's Q (*TGAP12* t-stat = 6.62*** and *TGAP13* t-stat = 6.52***) and *TSR* (*TGAP12* t-stat = 3.79*** and *TGAP13* t-stat = 3.19***). This provides further support for hypothesis 1 and leads us to conclude that overall, tournament incentives are significantly and positively related to firm performance, thus indicating that where greater incentives exist for executives (in being promoted to CEO), firm performance is similarly improved. It also seems as if CEO pay-performance alignment is important with a significantly positive relationship documented for *TGAP12* (t-stat = 2.27***) and *TGAP13* (t-stat = 2.17***) in

relation to Tobin's Q as well as for return on assets (*TGAP12* t-stat = 6.86***; *TGAP13* t-stat = 6.67***). Support is also found for our second hypothesis, at least in relation to *Tobin's Q*, that the positive relationship between tournament incentives and performance is reduced after a new CEO has joined the company (t-stat = -3.29*** for TGAP12 and t-stat = -2.98*** for *TGAP13* respectively).

Our results indicate a stronger association between the pay differential between the CEO and executives immediately below the CEO (measured as *STGAP12*, *LTGAP12* and *TGAP12*), which would be expected, given these executives are more likely to be in the running to replace the CEO at the end of a tournament.

The second model employed in this study aims to examine whether the arrival of a new CEO increases the size of the gap in incentives (hypothesis 3) and whether this increase was more significant when an "outside" CEO was appointed. Results are presented in Table 5 and are again grouped into short term (*STGAP12* and *STGAP 13*), long term (*LTGAP12* and *LTGAP13*) and total (*TGAP12* and *TGAP13*) measures of the gap in incentives between the CEO and other executives.

[Insert Table 5 about here]

A significant negative relationship is documented between new CEO and the gap in short-term as well as total tournament incentives (*STGAP12* t-stat = -5.23***; *TGAP12* t-stat = -3.33***). This is contradictory to our expectations in hypothesis three. Instead of seeing an increase in the gap in pay between the CEO and lower executives when a new CEO is appointed we rather, see the opposite. It is possible that this result is indicative of our timing in measurement of new CEO. Whilst we currently code a CEO as "new" in the year they start, it might take some time for the new tournament to get up and running. CEO pay, in the year they commence, may not incorporate a full year of income and incentives, thus further reducing this gap.

The results for hypothesis 4, which proposes a widening of the pay differential when the new CEO is an outsider, are not significant, but this finding is not completely surprising considering the unexpected result for hypothesis 3. Firm size appears significant in increasing pay differentials across short-term, long-term and total measures of tournament incentives, whilst a positive relationship is also documented for corporate governance.

5. Conclusion

This study aimed to provide insights into how tournament-based promotion incentives influence the pay-for-performance relationship in the Australian corporate environment. Scholars have argued that the remuneration disparity between the CEO and other senior executives may have a *positive* motivational influence, which leads to improved performance (Lazear and Rosen, 1981). This view flows from the 'tournament incentives' created by the remuneration gap that exists not only between the CEO and general employees, but also between the CEO and other senior executives.

With the view that any examination of the impact of executive remuneration on firm performance should incorporate both tournament-style promotion incentives as well as traditional measures of financial remuneration (Kale et al., 2009), we extend prior work by considering the impact of promotion-based 'tournament incentives' on firm performance. We test several hypotheses relating to the association between the differential in pay between the CEO and other executives (tournament incentives) and firm performance; and the determinants of the size of those tournament incentives, particularly surrounding the appointment of a new CEO and the choice between internal and external candidates.

We find that larger tournament incentives are associated with improved firm performance across all our measures of incentive (short-term, long-term and total differential). This relationship decreases following the appointment of a new CEO, consistent with the idea that a tournament at

such a stage would be at its infancy, with the likelihood of an executive attaining the "top job" at such a time being much smaller than before the change in CEO. We also show that alignment of CEO incentives (through equity holdings) is significantly positively associated with firm performance.

Our paper contributes to the extant corporate compensation literature in the following ways. Whilst Kale et al. (2009) document a relationship between tournament incentives and firm performance for the US environment; we extend their work to Australia where CEO compensation and the lack of alignment with performance have received increased attention following the GFC. We go further, however, to show that the appointment of a new CEO has a detrimental effect on the size of the tournament incentive, as well as on firm performance.

We also improve the classification of what constitutes a tournament incentive to one relating specifically to those executives who are likely to be in the running for the existing CEO's position, finding a stronger association between firm performance and pay differential for these executives than for lower-level executives.

Our study is currently limited in its measurement of CEO incentive alignment, as it only considers share ownership. Further developments of the paper will address this by also measuring options as part of alignment. We have not, so far, considered alignment of executives with shareholders through a measure of share and options holdings, which will give further indications of the extent to which alignment between executives and shareholders relates to firm performance and the size of tournament incentives.

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Table 1: Sample Selection Summary

	No. of Observations	No. of Companies
Starting Sample – Executives and CEO's with compensation data available on the SIRCA governance database	5554	1069
Less:		
Deletion of observations were company had less than three "other executives"	(2315)	(429)
Firms with missing data for any financial variable or missing "alignment" variable data and trimming observations at 1 and 99%	(879)	(163)
Final Sample	**2360**	**477**

Table 2: Variable Measurement

Variable	Label	Measurement
Panel A: Dependent Variables		
DIFFERENTIAL:		
Short Term Gap	STGAP12	Gap between CEO short term compensation and the median compensation of all level 2 executives[1]
	STGAP13	Gap between CEO short term compensation and the median compensation of all level 3 executives[2]
Long Term Gap	LTGAP12	Gap between CEO long term compensation and the median long term compensation of level 2 executives
	LTGAP13	Gap between CEO long term compensation and the median long term compensation of level 3 executives
Total Gap	TGAP12	Gap between total CEO compensation and the median total compensation of level 2 executives
	TGAP13	Gap between total CEO compensation and the median total compensation of level 3 executives
Performance measures:		
Tobin's Q	TOBIN	(Market value of equity + book value of debt) / book value of total assets
Total Shareholders' Return	TSR	Year-on-year buy-and-hold return to holding a security
Return on Assets	ROA	Total revenue / total assets
Panel B: Independent Variables		
New CEO	NEW	A dichotomous variable with a value of 1 in the first year of a CEO's tenure and 0 otherwise
InsideCEO	INSIDE	A dichotomous variable with a value of 1 if the CEO was appointed from within the organisation and 0 otherwise
New CEO*Inside	NEWINSIDE	The interaction between New CEO and Inside CEO variables
Alignment	ALIGN	A variable measuring how aligned the CEO's incentives are with that of shareholders. This is estimated as (CEO shareholding / total shares issued)[3]
Panel C: Control Variables		
Firm size	SIZE	Log of total assets
Firm size squared	SIZESQ	Log of squared total assets
Compensation governance	CGOV	A measure of the quality of compensation committee governance based on Sun et al. (2009)[4]. It considers whether the company has a compensation committee, the size and meeting frequency of the committee as well as the busyness of the committee members
Industry	INDs	A series of dummy variables to control for industry association

1. Level 2 executives are defined as divisional heads, which includes executives, other than the CEO, with the highest authority in the division. This includes managing directors of major divisions, presidents and finance directors.
2. Level 3 executives are defined as other executives with mainly functional duties such as company secretary, human resources director, legal director, marketing director etc.
3. A future version of this paper will include an incentive alignment measure as in Kale et al. (2009) estimated as:
(#shares held by CEO + delta of options * number of options held by CEO) / number of shares outstanding *100.
4. A future version of this paper will include both compensation committee governance measures from Sun et al. (2009). In this early version of the paper only a limited measure is included.

Table 3: Descriptive Statistics

Variable	Min	Max	Mean	Std Dev
STGAP12	-$6,000,000	$19,483765	$421,911	$865,647
STGAP13	-$2,650,000	$27,894,726	$459,407	$993,544
LTGAP12	-$5,709,261	$6,731,000	$172,701	$579,120
LTGAP13	-$3,139,282	$7,799,000	$194,099	$604,958
TGAP12	-$10,894,613	$13,774,504	$694,053	$1,299,501
TGAP13	-$4,947,721	$24,755,444	$748,889	$1,480,537
TOBIN	0.506	14.29	1.989	1.608
TSR	-0.889	5.50	0.189	0.805
ROA	-1.761	0.371	-0.018	0.247
ALIGN	0	0.756	0.041	0.104
SIZE	6.072	11.389	8.223	0.968
CGOV	0	3	0.891	0.887

Variable	Value	Frequency	Percent
NEW	1	540	22.9%
	0	1820	77.1%
INSIDE	1	944	40%
	0	1416	60%
INDS	ENERGY	212	9.0%
	MATERIALS	432	18.3%
	INDUSTRIAL	477	20.2%
	CONSDISCR	328	13.9%
	CONSSTAPL	94	4.0%
	HEALTH	210	8.9%
	FINANCIAL	345	14.6%
	INFO TECH	182	7.7%
	TELECOM	46	1.96%
	UTILITIES	33	1.4%

Where: *STGAP12* = gap between CEO short term pay and the median of short-term pay for level 2 executives; *STGAP13* = gap between CEO short term pay and the median of short term pay for level 3 executives; *LTGAP12* = gap between CEO long term pay and the median of long term pay for level 2 executives; *LTGAP13* = gap between CEO long term pay and the median of long term pay for level 3 executives; *TGAP12* = gap between CEO total pay and the median of total pay for level 2 executives; *TGAP13* = gap between CEO total pay and the median of total pay for level 3 executives; *TOBIN* = Tobin's Q – a measure of firm performance estimated as (market value of equity + book value of debt) / book value of total assets; *TSR* = total shareholders return estimated as the buy-and-hold return to holding a security of a firm over the 12-month period; *ROA* is return on assets a measure of firm performance; *ALIGN* is a measure of incentive alignment; *SIZE* is a measure of firm size – the log of total assets whilst *CGOV* is a measure of compensation committee governance based on that in Sun et al. (2009).

Table 4: Results from regression of tournament incentives on firm performance

Panel A:	Tobin's Q				Total shareholder return (TSR)				Return on assets (ROA)			
	STGAP12		STGAP13		STGAP12		STGAP13		STGAP12		STGAP13	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Short Term Gap												
Intercept	22.36	7.26***	22.52	7.25***	3.652	3.01***	3.974	3.26***	-4.28	-11.81***	-4.329	-12.05***
Differential	0.173	3.53***	0.191	3.87***	0.073	3.28***	0.046	1.73*	0.010	1.60	0.011	1.99**
ALIGN	1.078	1.70*	1.005	1.57	0.322	1.14	0.173	0.60	0.374	6.07***	0.366	6.19***
NEW	1.058	0.77	0.933	1.00	-0.189	-0.42	-0.366	-0.75	-0.105	-0.67	-0.204	-1.76*
INSIDE	-0.107	-1.27	-0.092	-1.08	-0.036	-0.78	-0.035	-0.75	0.001	0.04	-0.001	-0.12
Differential*NEW	-0.083	-0.78	-0.069	-0.97	0.009	0.26	0.024	0.63	0.006	0.50	0.014	1.59
SIZE	-4.82	-6.88***	-4.909	-6.99***	-0.850	-3.15***	-0.860	-3.18***	0.911	11.21***	0.919	11.39***
SIZESQ	0.241	6.26***	0.246	6.37***	0.038	2.54**	0.039	2.63***	-0.049	-10.84***	-0.049	11.06***
CGOV	0.129	2.28**	0.117	2.13**	0.020	0.80	0.031	1.19	0.003	0.38	0.004	0.54
Energy	0.935	4.16***	0.896	4.10***	0.310	2.06**	0.328	2.18**	-0.037	-1.82*	-0.039	-1.83*
Materials	0.674	4.14***	0.768	4.68***	0.140	1.09	0.180	1.41	-0.039	-2.38**	-0.040	-2.31**
Industrials	0.260	1.68*	0.262	1.73*	0.040	0.33	0.054	0.45	0.014	0.89	0.011	0.69
Consumer Disc	0.481	3.01*	0.495	3.08***	0.013	0.10	0.022	0.17	0.039	2.10**	0.037	1.90*
Consumer Staple	-0.031	-0.20	-0.069	-0.45	-0.068	-0.53	-0.087	-0.68	-0.007	-0.39	-0.005	-0.29
Health	1.029	4.39***	1.123	4.77***	-0.166	-1.27	-0.149	-1.14	-0.154	-4.80***	-0.148	-4.62***
Financial	2.02	1.33	0.155	1.05	0.061	0.48	0.077	0.61	0.028	1.92*	0.026	1.68*
Information Tech	0.593	2.56**	0.590	2.58**	-0.017	-0.12	-0.024	-0.18	-0.014	-0.36	-0.014	-0.37
Telecom	-0.356	-1.99**	-0.413	-2.39**	0.446	1.52	0.450	1.49	0.006	0.23	0.011	0.41
# Clusters	1775		1789		1775		1789		1775		1789	
R-Square	0.198		0.204		0.057		0.053		0.289		0.297	

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level

Table 4 continued

Panel B:	Tobin's Q				Total shareholder return (TSR)				Return on assets (ROA)			
	LTGAP12		LTGAP13		LTGAP12		LTGAP13		LTGAP12		LTGAP13	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Long Term Gap												
Intercept	20.64	4.81***	20.149	4.59***	7.122	4.5***	6.443	4.02***	-3.855	-10.85***	-3.894	-10.7***
Differential	0.279	6.57***	0.278	5.4***	0.049	2.58**	0.051	2.35**	-0.014	-3.21***	-0.016	-2.91***
ALIGN	1.943	1.41	2.853	1.86*	0.131	0.27	0.068	0.14	0.086	0.58	0.131	0.81
NEW	1.29	1.94*	1.543	2.22***	-0.140	-0.43	0.210	0.59	-0.144	-1.78*	-0.132	-1.54
INSIDE	-0.037	-0.37	-0.022	-0.22	-0.059	-1.06	-0.043	-0.77	0.013	1.13	0.010	0.81
Differential*NEW	-0.12	-2.13**	-0.137	-2.34**	-0.002	-0.08	-0.029	-0.95	0.009	1.4	0.009	1.29
SIZE	-4.573	-4.90***	-4.469	-4.72***	-1.512	-4.31***	-1.358	-3.85***	0.854	10.62***	0.868	10.59***
SIZESQ	0.222	4.33***	0.218	4.19***	0.073	3.8***	0.065	3.36***	-0.044	-10.14***	-0.045	-10.13***
CGOV	0.007	0.12	0.003	0.04	0.038	1.28	0.044	1.52	0.005	0.73	0.005	0.82
Energy	0.695	2.55**	0.666	2.39**	0.313	1.53	0.202	0.91	-0.015	-0.54	-0.017	-0.64
Materials	0.778	3.62***	0.728	3.29***	0.143	0.86	0.071	0.38	-0.022	-0.99	-0.013	-0.62
Industrials	0.477	2.31**	0.380	1.82*	0.065	0.4	-0.032	-0.17	0.020	0.98	0.021	1.06
Consumer Disc	0.749	3.43***	0.614	2.79***	0.076	0.45	-0.003	-0.01	0.046	1.88	0.046	1.95*
Consumer Staple	0.253	1.2	0.172	0.79	-0.030	-0.18	-0.116	-0.61	-0.020	-0.85	-0.022	-0.96
Health	1.498	4.96***	1.431	4.68***	-0.279	-1.63	-0.338	-1.77*	-0.174	-3.86***	-0.162	-3.63***
Financial	0.32	1.55	0.236	1.12	0.026	0.15	-0.015	-0.08	0.015	0.71	0.017	0.87
Information Tech	1.313	3.75***	1.218	3.49***	-0.083	-0.48	-0.148	-0.77	0.142	4.56***	0.138	4.49***
Telecom	0.17	0.61	-0.023	-0.08	-0.119	-0.56	-0.220	-0.94	-0.054	-1.19	-0.042	-0.91
# Clusters	1167		1144		1127		1144		1127		1144	
R-Square	0.267		0.253		0.104		0.083		0.361		0.345	

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level

Table 4 continued

Panel C:	Tobin's Q				Total shareholder return (TSR)				Return on assets (ROA)			
	TGAP12		TGAP13		TGAP12		TGAP13		TGAP12		TGAP13	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Total Gap												
Intercept	19.444	6.6***	20.070	6.57***	3.047	2.64**	3.353	2.77***	-3.885	-11.53***	-3.979	-11.88***
Differential	0.368	6.62***	0.390	6.52***	0.103	3.79***	0.096	3.19***	-0.002	-0.24	-0.006	-0.9
ALIGN	1.353	2.27**	1.303	2.17**	0.313	1.31	0.210	0.87	0.404	6.86***	0.384	6.67***
NEW	2.701	3.25***	2.956	2.97***	0.557	1.36	0.056	0.12	-0.046	-0.4	-0.226	-1.61
INSIDE	-0.049	-0.61	-0.035	-0.42	-0.037	-0.82	-0.018	-0.4	0.001	0.06	-0.002	-0.15
Differential*NEW	-0.203	-3.29***	-0.217	-2.98***	-0.047	-1.53	-0.009	-0.25	0.000	0.05	0.014	1.4
SIZE	-4.665	-7.02***	-4.835	-7.05***	-0.790	-3.09***	-0.839	-3.2***	0.845	11.23***	0.877	11.47***
SIZESQ	0.227	6.22***	0.234	6.18***	0.034	2.42**	0.037	2.52**	-0.045	-10.71***	-0.046	-10.99***
CGOV	0.105	1.97**	0.135	2.41**	0.018	0.71	0.030	1.21	0.005	0.78	0.006	0.84
Energy	0.769	3.25***	0.714	3.01***	0.227	1.36	0.215	1.29	-0.051	-2.3**	-0.037	-1.77*
Materials	0.698	3.68***	0.754	3.91***	0.089	0.62	0.107	0.74	-0.027	-1.74*	-0.029	-1.8*
Industrials	0.240	1.33	0.259	1.41	-0.020	-0.14	-0.017	-0.12	0.022	1.47	0.018	1.15
Consumer Disc	0.487	2.6***	0.479	2.54***	-0.025	-0.18	-0.028	-0.2	0.039	2.17***	0.043	2.38**
Consumer Staple	-0.021	-0.12	-0.047	-0.25	-0.125	-0.86	-0.139	-0.97	-0.006	-0.35	-0.004	-0.25
Health	1.074	4.18***	1.061	4.18***	-0.246	-1.69*	-0.235	-1.63	-0.159	-4.87***	-0.156	-4.89***
Financial	0.233	1.3	0.257	1.4	0.017	0.12	0.034	0.24	0.024	1.73*	0.028	1.91*
Information Tech	0.603	2.43***	0.620	2.45**	-0.045	-0.3	-0.046	-0.31	-0.002	-0.06	0.007	0.19
Telecom	-0.217	-1.07	-0.301	-1.47	0.413	1.36	0.427	1.37	0.001	0.03	0.008	0.3
# Clusters	1837		1840		1837		1840		1837		1840	
R-Square	0.226		0.224		0.057		0.053		0.289		0.296	

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level

Table 5: Results from regression investigating the determinants of tournament incentives.

	Short Term Gap between CEO and 2nd-level		Short Term Gap between CEO and 3rd-level		Long Term Gap between CEO and 2nd-level		Long Term Gap between CEO and 3rd-level		Total Gap between CEO and 2nd-level		Total Gap between CEO and 3rd-level	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Intercept	6.06	21.93***	5.67	19.95***	4.559	8.98***	4.66	9.03***	6.516	23.21***	6.118	24.11***
NewCEO	-0.421	-5.23***	-0.30	-3.67***	-0.072	-0.48	-0.236	-1.58	-0.280	-3.33***	-0.222	-2.87***
InsideCEO	-0.153	-3.53***	-0.13	-3.12***	-0.029	-0.30	-0.052	-0.55	-0.122	-2.79***	-0.144	-3.38***
NewInside	0.091	0.83	-0.109	0.95	-0.409	-1.74*	-0.226	-1.08	-0.131	-1.10	-0.047	-0.43
Size	0.762	31.97***	0.812	30.61***	0.848	17.73***	0.824	18.21***	0.766	31.0***	0.823	35.27***
Governance	0.084	3.35***	0.077	3.09***	0.049	0.96	0.042	0.89	0.103	4.0***	0.095	3.74***
Energy	0.226	1.14	0.202	1.08	0.851	2.76***	0.873	2.51**	0.246	1.18	0.255	1.41
Materials	0.236	1.23	0.152	0.84	0.573	1.9*	0.722	2.13**	0.206	1.05	0.102	0.59
Industrials	0.268	1.39	0.253	1.38	-0.357	-1.18	-0.188	-0.55	0.093	0.47	0.049	0.29
Consumer Disc	0.243	1.24	0.254	1.37	-0.417	-1.32	0.002	0.01	0.145	0.74	0.072	0.41
Consumer Staple	0.057	0.28	0.067	0.34	-0.688	-2.03**	-0.462	-1.26	-0.104	-0.50	-0.089	-0.48
Health	0.194	0.98	0.314	1.67*	-0.017	-0.05	0.149	0.41	0.178	0.89	0.206	1.14
Financial	0.016	0.08	-0.064	-0.34	-0.258	-0.85	-0.082	-0.24	-0.169	-0.85	-0.227	-1.29
Information Tech	0.332	1.68*	0.175	0.93	-0.006	-0.02	0.072	0.20	0.175	0.87	0.009	0.05
Telecom	-0.210	-0.98	0.148	0.72	-0.527	-1.38	-0.098	-0.24	-0.354	-1.54	-0.088	-0.43
# Clusters	2360		2360		1464		1488		2441		2439	
R-Square	0.427		0.448		0.255		0.263		0.398		0.461	

* = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level