Maria Strydom (Australia)

Corporate governance and regulatory reform: Australian evidence

Abstract

This study investigates the strength of corporate governance amongst listed Australian firms over the period 1999-2006. Following governance scandals in the early 2000s significant governance reforms were introduced. These include recommendations and requirements for improved monitoring and disclosure and so should improve firm governance. Smaller firms were not subject to the same requirements and as such this study investigates whether larger firms have stronger governance. A unique internal governance index is employed in multiple regression models to calculate whether governance strength has improved post reforms. The governance strength of Australian firms improved following governance reforms. Larger firms overall appear to have better governance than their small counterparts and this has improved further post reforms. This study provides evidence that ASX governance reforms (2003) and CLERP9 (2004) have impacted positively on the governance strength of Australian firms. The sample of 400 large and small Australian firms is an improvement on other Australian governance studies that employ much smaller samples of only the largest firms.

Keywords: corporate governance, regulatory reform, ASX principles of good corporate governance.
JEL Classification: G18, G38, G34, M48.

Introduction

This study investigates corporate governance amongst Australian listed firms over the period of 1999-2006. Following governance scandals in the early 2000s significant governance reforms were introduced[1]. These recommend better monitoring and disclosure and should improve firm governance. This study therefore investigates whether governance of Australian firms has improved post reforms. As firm size affects the quality of governance disclosures (Evans & Christopher, 1999; Cullen & Christopher, 2002), this study argues that it should also affect governance strength. The study therefore investigates whether the governance is affected by firm size. Lastly, since smaller firms do not have to comply with all reforms (CLERP9, 2004) this study investigates whether the relationship between firm size and governance changed post reforms. The findings seem to indicate that the reforms (ASX GCG, 2003; CLERP9, 2004) have had some impact on the governance of Australian firms. Larger firms are found to have stronger governance and this has improved further post reforms. Regulators can note that reforms appear to have had some impact. Investors seeking firms with good governance may limit their search to the large listed companies since they appear to have the best governance.

Motivation to investigate these issues stems from the lack of evidence on the impact of Australian governance reforms. UK research suggests that governance reforms affect the quality of internal governance components (Guest, 2008), but no study has investigated the impact of the Australian reforms (the

ASX Principles of Good Governance, 2003 and CLERP 9). Similarly, whilst many studies find that larger firms have better governance (Evans & Christopher, 1999; Carson & Simnett, 1996) and audit committee disclosures (Baxter & Pragasam, 1999), no study has directly investigated whether large Australian firms have stronger governance than their smaller counterparts. In addition, previous studies commonly use singular or mis-specified measures of governance potentially leading to unreliable results (Klein, 2002; Gompers et al., 2003). An attempt to overcome this problem is made by using a weighted internal governance measure developed specifically for the Australian environment (Strydom & Skully, 2009).

The study examines a sample of 400 listed Australian companies for the period 1999-2006: 54% are Top 300 (ASX firms) and 46% are much smaller listed firms. As the results indicate that firm governance in general improved significantly following governance reforms, these appear to have had some impact. In regards to governance and size, larger Australian firms appear to have better corporate governance.

This is the first Australian study to compare the pre and post reforms periods using a comprehensive governance strength measure. The findings of Cullen & Christopher (2002) who document a positive relationship between firm size and governance disclosure (for Australian mining companies) are extended to governance strength of Australian firms. This is the first study to investigate this firm size and governance relationship in the context of regulatory reform. As few studies have investigated Australian firms outside the top 300 firms, the inclusion of some 100 smaller firms offers a further contribution.

The rest of this paper is structured as follows. Section one briefly reviews the governance reforms and their expected impact. Section two investigates the

[1] We refer to the ASX Principles of Good Corporate Governance announced in 2003(ASX GCG, 2003 hereafter) and the Corporations Law Economic Reform Program (CLERP9, 2004 hereafter) which was released in 2002 and became law in 2004.

governance and firm size relationship whilst Section three discusses governance measurement issues. Section four presents the data and sample selection whilst Section five introduces the methodology and internal governance measures employed. Section six evaluates the results whilst the last Section concludes the paper.

1. Corporate governance and regulatory reforms

Corporate governance is the system by which companies are directed and controlled (Gillan & Starks, 1998). The mechanism associated with governance of public firms can be categorized as being internal or external (Cremers & Nair, 2005). Internal governance relates to firm level control mechanisms (i.e. independent board of directors) implemented when firms strive to obtain good governance. External governance involves takeovers and the market for corporate control and is driven mainly by country laws and institutions, cultural norms and other monitors. Evidence show that firms with stronger internal governance have better external governance (Gillan et al., 2003) and that good internal governance is needed in certain instances in order to ensure functioning of external governance mechanisms (John & Kedia, 2000). It is possible that internal corporate governance strength signals the quality of monitoring and disclosures to investors (since firms have control over this) and should therefore receive more consideration when investigating firm governance than external measures. Australian regulatory reforms (ASX GCG, 2003; CLERP 9) provide guidance as to what constitutes best practice in the monitoring of management and financial disclosure and thus internal governance. As such a firm with good internal governance can be defined as one that implements significant monitoring, disclosure and control mechanisms (in accordance with reform recommendations) to ensure best practice is followed[1].

Australian governance regulation has principally stemmed from the Corporations Law and the ASX recommendations. Whilst some guidance on good governance existed, no formal system of guidelines existed prior to the governance failures that surfaced in the late 1990s and early 2000s (One.Tel, HIH Insurance, Harris Scarfe, Pasminco and Centaur). Following these seemingly avoidable scandals, regulators responded with the ASX Principles of Good Corporate Governance (ASX GCG, 2003 hereafter) and Corporation Law Economic Reforms program (CLERP9, 2004). The ASX GCG (2003) includes 10 principles (including structuring the board to add value and promoting ethical decision making) that to their view constitute the fundamentals necessary to ensure good governance. Each principle makes a number of recommendations aimed at improving internal governance strength but compliance is required on an "if-not-why-not" basis only. CLERP 9 requires only the top 500 listed Australian firms to have an audit committee and so many smaller firms are exempt from this requirement. Whilst it is reasonable to expect that firm corporate governance will be stronger under a forced regulatory compliance system (such as that of the US), Australia has a completely different system. The Australian "if-not-why-not" system and its impact on firm's governance strength have not been investigated.

Table 1. Main internal governance requirements of the ASX GCG (2003) and CLERP 9 (2004)

	ASX GCG recommendations	CLERP 9 requirements
Independent board of directors	majority	
Meeting of the board of directors	Meet regularly enough to be conducive to efficient decision making.	
Chairperson should be an independent director	Yes	
CEO and Chairperson is not the same person (no duality)	Yes	
Establish a nomination committee	Yes	
Nominating committee members	At least 3	
Nominating committee independence	Majority	
Board size	"A size conducive to making decisions expediently"..."the size of the board should be limited so as to encourage efficient decision making"	
Sign off by CEO and / or CFO that financial reports represent a fair and true view	Yes	
Establish and audit committee	Yes, top 300 companies	Yes, top 500 companies

---

[1] Whilst this may seem to be a "tick-the-boxes" approach there is substantial evidence that compliance with reforms (or having certain governance characteristics) does increase the quality and effectiveness of governance measures (Guest, 2008; Kalbers & Fogarty, 1993; Bedard et al., 2004; Xie et al., 2003).

Table 1 (cont.). Main internal governance requirements of the ASX GCG (2003) and CLERP 9 (2004)

	ASX GCG recommendations	CLERP 9 requirements
Audit committee size	At least 3	
Audit committee independence	All non-executive, majority independent	
Audit committee meetings	"the audit committee should meet often enough to undertake its role effectively"	"regular schedule of meetings"
Establish a remuneration / compensation committee	Yes	
Remuneration / Compensation committee size	"at least three members"	
Remuneration / Compensation committee independence	Majority	

Source: Strydom & Skully (2009).

The UK's Code of Best Practice recommendations (Cadbury, 1992) similarly focuses on internal governance and voluntary compliance and studies (Peasnell et al., 1998; Hillier & McColgan, 2006) find a higher percentage of non-executive (and independent) directors on UK boards after these reforms. Extant UK literature documents that governance reforms impacted the quality of internal corporate governance (Guest, 2008). In addition, improving governance strength (and thus compliance) is associated with increased effectiveness (Kalbers & Fogarty, 1993). As such the expectation is that the ASX GCG (2003) and CLERP 9 (2004) should have similarly impacted Australian firms so that governance should be better post reforms.

The first formal research question investigated in this study is:

1. Has the corporate governance strength of listed Australian firms improved post reforms?

2. Governance and firm size

Large firms are typically subject to more analyst following than their smaller (non-top 300) counterparts (Chan et al., 2005). As such they are placed under greater scrutiny and public awareness (Eilbert & Parket, 1973; Dierkes & Coppock, 1978). Investors are therefore likely to be better informed on such larger firms and demand that their good governance practices be maintained. Large firms, in order to retain investors are likely to ensure strict internal control, monitoring and other measures are maintained. Extant literature supports this view and concludes that firm size is positively associated with disclosure quality of corporate governance practices (Evans & Christopher, 1999; Cullen & Christopher, 2002). Smaller firms, in contrast, are found to trade in relatively impoverished information environments (Bhattacharya, 2001; Lee, 2001) and may lack incentives to maintain good governance. Large firms are therefore expected to have better governance. Formally, the second research question investigated in this study is:

2. Is there a relationship between corporate governance and firm size in the Australian market?

As argued above, there should be a relationship between firm size and governance strength. Specifically this study proposes that larger firms should have better governance than their small counterparts. Governance reforms also distinguished the required or recommended compliance as a function of firm size. CLERP 9 requires only the top 500 listed Australian companies to have audit committees, implying smaller firms are not legally obliged to fulfil this requirement. The ASX GCG (2003) does recommend all firms to have such committees, but non-compliance requires only a note as to why. A more substantial change should therefore be observable in firm size deciles (large) post reforms (i.e. larger firms should have a more significant improvement in governance strength). Formally this research objective is stated as:

3. Is there a substantial change in the relationship between firm size and governance strength post reforms?

3. Corporate governance measures

To investigate whether firm governance improved, one first must be able to measure it. Earlier studies use individual aspects, such as audit committee characteristics (Klein, 2002; Xie, 2001) or a combination of independent governance variables in their regressions (Davidson et al., 2005; Benkel et al., 2006) as a proxy for governance quality. Unfortunately, these failed to recognize that certain governance characteristics are highly correlated and that they are not equally important. Comprehensive governance indices have been developed but still have limitations (Gompers et al., 2003; Bebchuk et al., 2005; Brown & Caylor, 2006; Larcker et al. 2007). Gompers et al.'s (2003) "G-Index" does have a much broader coverage but its equal weightings of all components ignore their relative importance and contribution. In any case, it is essentially an anti-takeover rights measure (external corporate govern-

ance, Cremers & Nair, 2005) which is associated with bad performance (Larcker et al., 2007).

Other governance indices (Bebchuk et al., 2005; Brown & Caylor, 2006) also assume an equal importance of all governance factors (so equal weights) and that they are not substitutes. Unfortunately, many variables (such as board independence and audit committee independence) are highly correlated and there is no evidence justifying equal weightings. As such these measures are potentially mis-specified and their conclusions should be interpreted with care. One approach to address these problems is to investigate these interrelationships and calculate appropriate weightings consistent with variable contribution. This can be accomplished through a statistical data reduction technique called principal component analysis (PCA). As PCA considers the correlations between variables and then weights them according to their component weights, it should avoid many of the prior problems. This is discussed in greater detail in Section five.

Even without these problems, prior governance index attempts (Gompers et al., 2003; Bebchuk et al., 2005; Brown & Caylor, 2006; Larcker et al., 2007) are all US based. As regulatory differences between countries result in governance differences (La Porta, 1997, 2000), they are unlikely to be relevant for the Australian environment. Indeed Australian studies have sought to use more complex measures with Beekes & Brown (2006) incorporating the Horwath governance rankings for 2002 to determine whether better governed firms provide more informative disclosures. These rankings themselves, however, have a number of limitations, least of which includes availability, sample size and unknown composition.

To overcome these issues, this study will implement the internal governance index of Strydom & Skully (2009). This index is calculated using principal component analysis taking into account variable contribution and interactions. The use of PCA overcomes many problems associated with previous efforts to calculate governance scores (Gompers et al., 2003, Larcker et al., 2007). When using PCA to calculate a governance index there is consideration of correlations between variables and variables included in the analysis are weighted according to their component scores and are thus not included on an equal weight basis. This overcomes problems with equal weightings of dummy variables. Whilst the index technically measures the compliance of a firm with governance reforms (and thus really governance strength more so than quality) there is evidence that compliance with governance reforms does improve the quality of internal governance (Guest, 2008). In addition, several prior (US-based) studies calculate arbitrarily summed indices of compliance with different governance characteristics and find that these are associated with improved performance, valuation and higher dividends (Gompers et al., 2003; Brown & Caylor, 2006). The composition of the governance index (Strydom & Skully, 2009) is discussed in Section 5.

4. Data and sample selection

This study uses a random sample of 400 listed Australian companies for the period 1999-2006. The governance data are hand collected from firm financial statements (obtained from Connect4 and DatAnalysis) whilst industry, size and other information for control variables are obtained from Aspect Financial Analysis. The sample selection process commenced with the top 500 ASX listed companies by market capitalization for each year over the period 1999-2006. If a firm delists or list within the period, its data are included as long as it remains listed. The remaining companies in the governance dataset are then matched to that of the Aspect Financial Analysis Dataset. This left a final sample of 400 firms. In order to investigate the firm size effect, 54% of sample firms are in the Top 300 (ASX listed firms) either in the first or last sample year. The remaining 46% contains much smaller firms, located outside the Top 300. For the pre and post reform analysis 1999-2002 is included in the "pre" period and 2004-2006 in the "post" period, consistent with the announcements of reforms[1]. In addition, the year 2003 is excluded (since the ASX Principles of Good Corporate Governance was announced in this period) to avoid noise. Firms that lack at least three years of pre and post governance data, are excluded from the pre post sample (there are 68 of these). The final sample for the pre post analysis therefore includes 664 observations (implying 332 firms each with pre and post values).

5. Variable measurement and methodology

There has been little agreement in the literature over what constitutes an appropriate governance proxy (see Section 3). This study contributes by employing the weighted internal governance index of Strydom & Skully (2009) as a comprehensive measure of internal corporate governance. This is constructed through principal components analysis (PCA). PCA is often used to compile indices (Larcker et al., 2007; Tetlock, 2007 and Banker & Mashruwala, 2007) and has the advantage of considering the correlation between PCA factors as well as producing component weights. It does not assume all governance variables are equally important.

---

[1] The ASX GCG (2003) was introduced in 2003. Whilst CLERP9 was only instated in 2004, a discussion paper with its preliminary recommendations was released in 2002 and we propose, similar to Guest (2008) in his study of the UK Cadbury recommendations, that this would have affected firm behavior by 2003.

11 internal corporate governance variables are included in the PCA (see Table 2). The board meeting variable is excluded due to low sampling adequacy and the nomination committee meetings and diversity variables since they do not load on one of the two components with Eigen values >1 (as is required by PCA). This leaves eight variables (listed in Table 3 later) in the final PCA[1].

Table 2. Governance characteristics employed in PCA analysis

Characteristic	Evidence supporting its importance as a governance mechanism	Conclusion
Board size (Bsize)	Yermack, 1996; Jensen, 1993	Smaller boards are better as long as more than 3 members
Board independence (Bindep)	Fama & Jensen, 1983; Dahya & McConnell, 2005; Chen-Lung et al., 2006; Beasley, 1996; Uzun et al., 2004.	The more independent the board the better
Board meetings (Bmeet)	Vafeas, 1999	The more often the board meets the better
Gray directors (Gray)	Klein, 1998	The less gray directors (%) the better
Audit committee size (Asize)	Klein, 2002	The larger the audit committee the better (more than 3 members)
Audit committee independence (Aindep)	Abbott et al., 2004; Agrawal & Chadha, 2005; Klein, 2002.	The more independent the audit committee the better
Diversity (Div)	Carter *et al.*, 2003	Firms with diversified boards better
Audit committee meetings (Ameet)	ASX GCG	Recommend regular meetings to review financials
Nomination committee meetings (Nmeet)	ASX GCG	Regular meetings required
Remuneration committee meetings (Rmeet)	ASX GCG	Regular meetings required
Remuneration committee size (Rsize)	ASX GCG	At least 3 members

Source: Strydom & Skully (2009).

The PCA results from the Strydom & Skully (2009) index indicate that two components – denoted Board Activity (38.809%) which includes five variables (remuneration committee size and meetings, audit committee size and meetings and board size) and Board Independence (29.408%) including three variables (percentage gray directors, board and audit committee independence) – explain 68.218% of the variance in the governance variables. Component scores are calculated by first multiplying the variable weights (eigenvectors) by the observed values for each variable in the component and summing these. This yields a component score for each of the two components, Board Activity and Board Independence which is then reverted to percentages out of 100 using 68.218 as a base (as explained in Strydom & Skully, 2009). This establishes the weight of each component Board Activity and Board Independence in the index i.e. 57% for Board Activity and 43% for Board Independence.

Table 3. Component loadings from PCA

PANEL A Component	% of variance (component load)	Cumulative %	Weight
Board activity	38.809	38.809	57%
Board independence	29.408	68.218	43%
Component constituents (variables) from PCA with variable weights			
PANEL B Variables			
		Board activity Variable weights	Board Independence Variable weights
RSIZE		0.771	.
AMEET		0.765	.
BSIZE		0.749	.
RMEET		0.739	.
ASIZE		0.73	.
GRAY		.	-0.911

---

[1] A correlation matrix is available from the author on request.

Table 3 (cont.). Component loadings from PCA

	Board activity Variable weights	Board Independence Variable weights
BINDEP	.	0.883
AINDEP	.	0.756
PCA Procedure: Varimax rotation with Kaiser Normalization		

Note: RSIZE is remuneration committee size; AMEET is number of audit committee meetings; BSIZE is board size; RMEET is remuneration committee size; RMEET is remuneration committee meetings; ASIZE is audit committee size; GRAY is percentage of gray directors and BINDEP and AINDEP is the independence of the board and audit committee as a percentage.

The internal governance score (IGS) is calculated as the component score multiplied by the adjusted component weight. This index compilation method is commonly used with PCA (Schmidtlein et al., 2008). This score is computed for each sample firm over both the whole period, as well as on a pre and post reform basis. These three scores (overall, pre and post) will be used as a proxy for governance for each where a higher score indicates better governance. The internal consistency reliability of the index is confirmed by calculating the Cronbach Alpha value (0.768) (Cronbach, 1951). Since this value is above 0.7 the measure appears to be reliable.

5.1. Control variables. In order to manage the effect of possible confounding factors (Bartov et al., 2000) variables previously found to be associated with accruals or governance are also included in the model. These variables include a control for size (log of market value of equity)[1]. A measure of profitability (return on assets) is included since this information is likely to be considered when making decisions in regard to implementing good governance to remain competitive − competition intensity should impact governance quality since it may provide incentives for management to perform better, work harder and to reduce misappropriation (Karuna, 2007; Hart, 1983; Schmidt, 1997). Market to book value of equity is included since it is found to be positively associated with good governance (Klein, 2002). The price earnings ratio is incorporated as a measure of investor expectation of future performance[2].

5.2. Regression models. This study utilizes two regression models: one to measure governance strength and the second to examine the position pre and post reforms. Research objectives investigating governance quality of Australian firms and the relationship between firm size and governance quality employ the following model[3]:

$$IGS_{i,t} = \alpha_0 + \beta_1 PROF_{i,t} + \beta_2 BM_{i,t} + \beta_3 PE_{i,t} + \beta_4 SIZE_{i,t} + \varepsilon_t, \qquad (1)$$

where *IGS* is the internal governance score developed in this study, α_0 is the intercept term, *PROF* is profitability (ROA), *BM* is book to market value, *PE* is the price earnings ratio, *SIZE* = log market value of equity and ε_t is the error term from the regression.

The second model investigates the change in the relationship between firm size and governance strength post reforms.

$$IGS_{i,t} = \alpha_0 + \beta_1 PROF_{i,t} + \beta_2 BM_{i,t} + \beta_3 PE_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 REF_{i,t} + \varepsilon_t, \qquad (2)$$

where *IGS* is the internal governance score developed in this study, α_0 is the intercept term, *PROF* is profitability (ROA), *BM* is book to market value, *PE* is the price earnings ratio, *SIZE* = log market value of equity, *REF* is the reference period dummy where a value of 0 is assigned pre governance reforms and 1 post reforms and ε_t is the error term from the regression.

6. Results

The research objectives in this study are investigated first through descriptive statistics and t-tests and then these findings are confirmed with multiple regression analysis.

6.1. Descriptive statistics and t-tests. The minimum governance score for the sample is 0.95 (see Table 4 below), indicating that such firms have few of the eight characteristics of good internal governance. The maximum score within the sample (over the whole sample period) is 9.95[4]; such firms have good quality internal corporate governance.

---

[1] Log of total assets was employed as an alternative size measure with similar results.
[2] Correlations between control variables and individual governance variables are also investigated. There are no correlations > 0.7 and so this should not present any problems.

[3] This relationship is tested for the complete sample as well as for the pre period only. The results are very similar. We include the pre sample results here since it is possible that the post period results are driving the result in the complete sample.
[4] Since actual values for the 8 governance characteristics in the IGS are included in calculation a larger score is indicative of greater compliance with reforms and is this better. It is therefore difficult to determine the maximum governance score that is theoretically obtainable and all conclusions in regard to governance strength here are made relative to other sample firms.

Table 4. Descriptive statistics for the sample

Variable	Mean	Median	Std deviation	Min	Q1	Q3	Max
IGS	5.82	5.95	2.371	0.95	4.07	7.65	9.95
Pre IGS	5.65	5.61	2.603	0.89	3.725	7.51	14.84
Post IGS	6.68	6.61	2.991	0.89	4.74	8.74	15.14
Size	18.68	18.69	2.02	14.5	17.06	20.11	25.04
Prof	-0.055	0.05	0.406	-2.65	-0.095	0.08	5.67
BM	0.617	0.53	0.455	-0.78	0.32	0.81	4.52
PE	5.538	10.28	28.57	-214.79	-5.49	17.33	141.54

Note: IGS = Internal corporate governance score; Pre IGS is the internal governance score for the period pre reforms; Post IGS is the internal governance score for the period following governance reforms; Size is log market value of equity; Prof is profitability, measured by return on assets; BM is book to market value of equity and PE is price earnings ratio. Min (minimum observed value), Q1 (value at quartile 1), Q3 (value at quartile 3), Max (maximum value) are descriptive values for the data in order to provide an overview of the distribution.

The pre and post IGS variables indicate an improvement in the overall corporate governance strength following the reforms – the mean Post IGS score (6.68) is higher than Pre IGS score (5.65). A t-test confirms that this is a statistically significant change at the 1% level (t-value =-4.71)[1]. This addresses the first research objective and suggests the reforms have improved governance strength. Descriptive statistics for the control variables are also included in Table 4.

Next this study investigates the relationship between firm size and governance. Table 5 shows the average governance scores and other values by firm size

deciles. Firm size is measured by the log of the market value of equity. The 1st decile in Table 5 includes the smallest firms and the 10th the largest. Larger firms generally scored better than smaller ones in respect to governance. The largest firms (decile 10 in Table 5) have a mean IGS score of 9.667 compared to the bottom decile with only 3.228[2]. This is confirmed with a t-test (t-value = -18.87)[3]. This positive relationship between governance quality and firms size addresses the second research objective in this study. As large firms have more incentive to maintain good governance (they have more to lose) they should disclose more information to the market (Chow and Wong-Boren, 1987).

Table 5. Descriptive statistics for the sample by size decile

Decile	IGS	Pre IGS	POST IGS	Avg PROF	Avg BM	Avg PE	Pre IGS vs Post IGS t-value
1	3.228	3.119	3.305	-0.2124	1.085	-5.163	-0.45
2	3.581	3.181	3.754	-0.250	0.742	-8.408	-1.18
3	4.792	4.024	5.121	-0.143	0.579	-10.29	-2.85****
4	5.241	4.430	5.565	-0.116	0.555	-4.435	-2.17***
5	5.599	4.866	5.926	0.021	0.605	3.2505	-1.84*
6	6.319	5.134	6.788	0.052	0.581	10.140	-3.48****
7	7.444	6.341	8.023	0.027	0.578	6.940	-3.76****
8	7.715	6.657	8.363	0.066	0.570	17.515	-3.61****
9	8.779	7.409	9.545	0.064	0.538	25.606	-4.21****
10	9.667	7.751	10.37	0.076	0.502	18.402	-3.83****

Note: Decile is the size decile, 1 is the smallest decile and 10 the largest. Pre IGS vs Post IGS t-value presents the t-test for difference in means between the pre and post governance scores for each decile. Other variables are as defined in Table 4. *, ***, **** indicate significance at the 10%, 5% and 1% level, respectively.

The third research objective is addressed by investigating the relationship between firm size and governance in the period post reforms. Results (see Table 5) indicate large firms (decile 10) show the most significant improvement in governance post reforms (i.e. decile 9 pre=7.409, post=9.545 – see Table 5). This improvement is significant at the 1% level (t-value = -4.21 for decile 9 and t-value = -3.83 for decile 10). In contrast,

smaller firms (deciles 1 and 2) showed an insignificant improvement in governance post reforms (t-value = -0.45 and -0.18, respectively).

These descriptive statistics and t-test findings are now re-examined through two multiple regression models. As indicated in Table 6, larger firms (t-value 15.14) and firms with higher book to market value of equity ratios (t-value 2.09) have better corporate governance. This provides additional support for the second research objective that there is a relationship between governance and firm size.

---

[1] Output from t-tests is available from the authors by request.
[2] The higher a firm's IGS, the better its governance quality.
[3] Output from t-tests is available from the authors by request.

Table 6. Governance of Australian firms

		Coefficient	t-statistic
α0	Intercept	-12.03	-10.08****
β1	Profitability (PROF)	0.302	1.32
β2	Book-to-Market ratio (BM)	0.472	2.09***
β3	Price Earnings ratio (PE)	-0.006	-0.70
β4	Log market value of equity (SIZE)	0.916	15.14****
Adjusted R-squared		0.518	
F-statistic		71.56	
Total observations		332	

Note: This table presents the results from the investigation of the factors that are associated with good governance in Australian firms. The regression is tested for the pre reform sample only with the following equation: $IGS_{i,t}=\alpha_0+\beta_1 PROF_{i,t}+\beta_2 BM_{i,t}+\beta_3 PE_{i,t}+\beta_4 SIZE_{i,t}+\varepsilon_t$, where IGS is the internal governance score developed in this study, PROF is profitability (ROA), BM is book to market value of equity, PE is the price earnings ratio and SIZE = log market value of equity. The coefficient and t-statistic are presented for each variable in the regression with *, ***, **** indicating significance at the 10%, 5% and 1% levels, respectively.

Next, governance strength of all sample firms is investigated pre and post reforms. A dummy variable (REF) is included where zero is assigned to the period pre reforms and one post. As Table 7 shows, the reference dummy (REF) is both positive and significant (t-value 9.13) indicating that corporate governance is stronger in the period post governance reforms. This provides additional support for the third research objective and findings indicate that there is a significant change in the relationship between governance and firm size post reforms. As shown in Table 6, larger firms have better governance post reforms. This finding is also confirmed here with a significant and positive sign (t-value=25.18) of the SIZE variable.

Table 7. Governance pre and post governance reforms

		Coefficient	t-statistic
α0	Intercept	-13.89	-17.31****
β1	Profitability (PROF)	0.367	2.07***
β2	Book-to-Market ratio (BM)	0.305	1.93*
β3	Price Earnings ratio (PE)	0.002	0.56
β4	Log market value of equity (SIZE)	1.018	25.18****
β5	Reference Dummy (REF)	1.356	9.13****
Adjusted R-squared		0.574	
F-statistic		179.37	
Total observations		664	

Note: This table presents the results from the investigation of the quality of corporate governance pre and post reforms. The regression is tested with the following equation: $IGS_{i,t}=\alpha_0+\beta_1 PROF_{i,t}+\beta_2 BM_{i,t}+\beta_3 PE_{i,t}+\beta_4 SIZE_{i,t}+\beta_5 REF_{i,t}+\varepsilon_t$, where IGS is the internal governance score developed in this study, PROF is profitability (ROA), BM is book to market value, PE is the price earnings ratio, SIZE = log market value of equity and REF is the reference period dummy where a value of 0 is assigned pre governance reforms and 1 post reforms. The coefficient and t-statistic are presented for each variable in the regression with *, ***, **** indicating significance at the 10%, 5% and 1% levels, respectively.

Conclusion

This study investigates whether governance reforms have had any effect on the corporate governance strength of listed Australian firms. In addition, it investigates whether firm size is related to governance and the response of this relationship to reforms. A weighted internal governance measure that was specifically created for the Australian environment is utilized to proxy for governance rather than a single characteristic or an arbitrarily assigned dummy model. Larger firms are found to have significantly better corporate governance. In addition, larger firms appear to have had a much larger improvement in governance strength following reforms. Results for the sample indicate a significant improvement in firm governance in Australia following reforms.

This study makes several contributions. First, corporate governance quality is investigated in the period following governance reforms (the ASX GCG, 2003 and CLERP 9) to determine whether these had some impact. The findings of Cullen & Christopher (2002) relating to firms size and governance disclosure are extended to governance strength. This is the first study to investigate the relationship between firm size and governance strength and whether this relationship has changed post reforms. As few studies have investigated Australian firms outside the top 300 in any study, the inclusion of approximately 100 smaller firms is a further contribution of this

study. It is also the first to investigate change in internal governance of Australian firms post reforms using a weighted internal governance index.

These findings have implications for investors, firms and regulators. Investors seeking firms with good governance may limit their search to large listed companies. Firms should note that governance strength has changed substantially and that investors

are likely to incorporate this into their valuation decision. Directors wishing to maximize shareholders value should ensure good governance is practised. For regulators these findings suggest that Australia's governance reforms did have the desired impact of improving governance amongst large listed firms, but the evidence on small firms is less convincing.

References

1. Abbott, L.J., Parker, S., Peters, G.F., 2004. Audit committee characteristics and restatements. Auditing 23, 69-87.
2. Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. Journal of Law & Economics 48, 371-406.
3. Australian Securities Exchange, [ASX Principles of Good Corporate Governance 2003] (Australian Securities Exchange, Sydney) [viewed 4 Sep.2006], available from http://www.shareholder.com/shared/dynamicdoc/ASX/ 364/ASXRecommendations.
4. Banker, R., Mashruwala, R., 2007. The moderating role of competition in the relationship between nonfinancial measures and financial performance. Contemporary Accounting Research 24, 763-793.
5. Bartov, E., Gul, F.A., Judy, J.S., Tsui, S.L., 2000. Discretionary-accrual models and audit qualifications. Journal of Accounting and Economics 30, 421-452.
6. Baxter, P., Pragasam, J., 1999. Audit committees, One size fits all. Australian CPA.
7. Beasley, M.S., 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. Accounting Review 71, 443-465.
8. Bebchuk, L.A., Cohen, A., Ferrell, A., 2005. What Matters in Corporate Governance? Harvard Law School John M. Olin Center Discussion Paper No. 491 Available at SSRN: http://ssrn.com/abstract=593423.
9. Bedard, J., Chtourou, S.M., Courteau, L., 2004. The effect of audit committee expertise, independence and activity on aggressive earnings management. Auditing: A Journal of Practice and Theory 23, 13-35.
10. Beekes, W., Brown, P., 2006. Do better-governed Australian firms make more informative disclosures? Journal of Business Finance & Accounting 33, 422-450.
11. Benkel, M., Mather, P., Ramsay, R., 2006. The association between corporate governance and earnings management: The role of independent directors. Corporate Ownership & Control 3, 65-75.
12. Bhattacharya, N., 2001. Investors' Trade Size and Trading Responses around Earnings Announcements: An Empirical Investigation, Accounting Review 76, 221-244.
13. Brown, L., Caylor, M.L., 2006. Corporate governance and firm performance. Journal of Accounting and Public Policy 25, 409-434.
14. Cadbury, A., 1992. *Committee on the Financial Aspects of Corporate Governance – Compliance with the Code of Best Practice*, London: GEE.
15. Carson, E., Simnett, R., 1997. Voluntary disclosure of corporate governance information. Unpublished paper, School of Accounting, University of New SouthWales.
16. Carter, D.A., Simkins, B.J., Simpson, W.G., 2003. Corporate governance, board diversity, and firm value. The Financial Review 38, 33-53.
17. Chan, H., Faff, R., Ramsay, A., 2005. Firm size and the information content of annual earnings announcements: Australian evidence. Journal of Business Finance and Accounting 32, 211-253.
18. Chen-Lung, C., Kleinman, G., Picheng, L and L. Mei-Feng, 2006. Corporate ownership structure and accuracy and bias of mandatory earnings forecast: Evidence from Taiwan. Journal of International Accounting Research 5, 41-62.
19. Chow, C.W., Wong-Boren, A., 1987. Voluntary financial disclosure by Mexican corporations. The Accounting Review 62, 533-541.
20. Commonwealth Law, [Corporations Law Economic Reform Program Act 2004] (Attorney General's Department, Canberra) [viewed 6 Sep. 2006], available from http://www.comlaw.gov.au/ComLaw/Legislation/ActCompilati on1.nsf/0/3B3EE9EA6EFA3DA7CA256F7100581F1B/$file/1032004.pdf.
21. Cremers, K.J.M., Nair, V.B., 2005. Governance mechanisms and equity prices. The Journal of Finance 60, 2859-2894.
22. Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika 16, 297-334.
23. Cullen, L., Christopher, T., 2002. Governance disclosures and firm characteristics of listed Australian mining companies. International journal of business studies 10, 37-58.
24. Dahya, J., McConnell, J.J., 2005. Outside directors and corporate board decisions. Journal of Corporate Finance 11, 37-60.
25. Davidson, R., Goodwin-Stewart, J., Kent, P., 2005. Internal governance structures and earnings management. Accounting & Finance 45, 241-267.
26. Dierkes, M., Coppock, A., 1978. Europe tries the corporate social report. Business and Society Review. 2-24.
27. Drake, M.S., Myers, J.N., Myers, L.A., 2007. Disclosure quality and the mispricing of accruals and cash flow. Avaialble at SSRN: http://ssrn.com/abstract=934563.

28. Eilbert H., and Parket, I.R., 1973. The practice of business–the current status of corporate social responsibility.Business Horizons 16, 5-14.
29. Eng, L.L., Mak, Y.T., 2003. Corporate governance and voluntary disclosure. Journal of Accounting and Public Policy 22, 325-345.
30. Evans, R., Christopher, T., 1999. The association between voluntary disclosure of governance related information and firm characteristics in Australian mining companies. Paper presented at ANZAM conference 1999, Hobart Tasmania.
31. Fama, E.F., Jensen, M.C., 1983. Separation of ownership and control. Journal of Law and Economics 26, 301-325.
32. Gillan, S.L., Hartzell, J.C., Starks, L.T., 2003. Explaining Corporate Governance: Boards, Bylaws, and Charter Provisions. Weinberg Center for Corporate Governance Working Paper No. 2003-03. Available at SSRN: http://ssrn.com/abstract=442740
33. Gillan, S., Starks, L., 1998. Corporate governance proposals and shareholder activism: the role of institutional investors. Journal of Financial Economics 57, 275-305.
34. Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. Quarterly Journal of Economics 118, 107-155.
35. Guest, P.M., 2008. The determinants of board size and composition: Evidence from the UK. Journal of Corporate Finance 14, 51-72.
36. Hillier, D., McColgan, P., 2006. An analysis of changes in board structure during corporate governance reforms. European Financial Management 14, 575-607.
37. Jensen, M.C., 1993. The modern industrial revolution, exit, and the failure of internal control systems. Journal of Finance 48, 831-880.
38. John, K., Kedia, S., 2004. Institutions, markets and growth: a theory of comparative corporate governance. Working paper, New York University.
39. Kalbers, L.P., Fogarty, T.J., 1993. Audit committee effectiveness: an empirical investigation of the contribution of power. Auditing: A Journal of Practice and Theory 9, 24-48.
40. Klein, A., 1998. Firm performance and board committee structure. The Journal of Law and Economics 41, 275-303.
41. Klein, A., 2002. Audit committee, board of director characteristics, and earnings management. Journal of Accounting & Economics 33, 375-400.
42. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. Journal of Finance 52, 1131-1150.
43. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000. Investor protection and corporate governance. Journal of Financial Economics 58, 3-27.
44. Larcker, D.F., Richardson, S.A., Tuna, I., 2007. Corporate governance, accounting outcomes and organizational performance. Accounting Review 82, 963-1008.
45. Lee, C., 2001. Market Efficiency and Accounting Research: A Discussion of ''Capital Markets Research in Accounting'' by S. P. Kothari. Journal of Accounting and Economics 31, 233–53.
46. Pearson, K., 1896. Mathematical contributions to the theory of evolution. III. Regression, heredity and panmixia. Philosophical Transactions of the Royal Society of London 187, 253-318.
47. Peasnell, K.V., Pope, P.F., Young, S., 1998. Outside directors, board effectiveness, and earnings management. Working Paper, Lancaster University.
48. Schmidtlein, M.C., Deutsch, R.C., Piegorsch, W.W., Cutter, S.L., 2008. A sensitivity analysis of the social vulnerability index. Risk Analysis 28, 1099-1114.
49. Spearman, C., 1904. The proof and measurement of association between two rings. American Journal of Psychology 15, 72-101.
50. Strydom, M., Skully, M., 2009. Governance indices: Australian perspective. Corporate Ownership and Control 6, 476-485.
51. Tetlock, P.C., 2007. Giving content to Investor Sentiment: the role of media in the stock market. The Journal of Finance 62, 1139-1168.
52. Uzun, H., Szewczyk, S.H., Varma, R., 2004. Board composition and corporate fraud. Financial Analysts Journal 60, 33-43.
53. Vafeas, N., 1999. Board meeting frequency and firm performance. Journal of Financial Economics 53, 113-142.
54. Xie, H., 2001. The mispricing of abnormal accruals. Accounting Review 76, 356-373.
55. Xie, B., Davidson, W., DaDalt, P., 2003. Earnings management and corporate governance: The role of the board and audit committee. Journal of Corporate Finance 9, 295-316.
56. Yermack, D., 1996. Higher market valuation of companies with a small board of directors. Journal of Financial Economics 40, 185-211.