GOVERNANCE CHOICES AND EARNINGS QUALITY

1. Introduction

Australian listed companies are allowed substantial discretion regarding their choice of governance structure. The regulatory approach taken by the Australian Securities Exchange (ASX) is to outline *best practice* governance recommendations that companies can adopt if they consider they are appropriate to their circumstances.[1] The ASX regime of voluntary governance choice seeks to overcome problems inherent in a *one size fits all* approach and to optimise corporate accountability in the interests of shareholders and the broader economy (ASX 2007, p.5).

The success of a voluntary governance regime is determined by the extent to which companies identify and implement governance structures that are optimal for their circumstances. Several prior studies suggest that corporate governance choices are made as an appropriate response to their company's economic and business environment (Guest, 2008; Linck et al., 2008; Boone et al., 2007; Dey, 2008). Studies have identified company size as an influential factor associated with the selection of governance mechanisms (Boone et al., 2007; Dedman, 2000). In addition, the relative cost of implementing formal governance structures is substantially greater for small companies compared to large companies (Linck et al., 2008; Dedman 2000).

Our first research question is whether the Australian policy of recommending corporate governance practices to all listed companies is effective for all sized listed companies. It is possible that *best practice* recommendations do not provide optimal corporate governance and governance mechanisms should be mandated for larger companies.

[1] One exception is that the ASX listing rules require that companies in the S&P All Ordinaries Index (i.e. the top 500 companies) must have an audit committee. Furthermore, the top 300 companies in this Index are required to follow the ASX Corporate Governance Council's recommendations (ASX 2007) with respect to composition, operation and responsibilities of the audit committee (ASX 2010, paragraph 12.7)

The second research question analysed in this study is whether different sized companies make governance choices that meet the needs of their particular operating environment.

We use cluster analysis to identify groups of companies that have homogeneous governance characteristics, size and earnings quality. Including governance variables and company size (measured by employee numbers[2]) in the cluster analysis enables us to explore the relation between company size and choice of corporate governance mechanisms.

Quality of reported earnings in similar sized clusters is measured to assess whether governance mechanisms adopted by companies are effective. Monitoring is a key governance function, and prior studies have shown a positive association between effective monitoring and the quality of reported earnings (Klein, 2002; Davidson et al., 2005; Koh et al., 2007). Therefore, including a measure of earnings quality enables us to evaluate the effectiveness of monitoring provided by the chosen governance structure.

This paper contributes to the corporate governance literature because no prior Australian studies have specifically examined the interrelation between company size, governance structure, and governance effectiveness across the continuum of company size. Prior related studies have either focused on large companies (Windsor and Cybinski, 2013), included size as a control variable (Anderson and Bizjak, 2003; Capezio et al., 2011; Conyon and Peck, 1998), compared small and large companies before and after 2004 (Christensen et al., 2015) or compared emerging and established companies after the introduction of governance regulation (Clout et al., 2013).

This study provides policy makers with evidence on the choices made by companies following The Principles of Good Corporate Governance and Best Practice Recommendations in 2003 (ASX, 2003). This code allows companies to choose whether they comply with the recommendations, but requires that non-compliance is disclosed and

[2] In additional analysis, we also use total assets as an alternative measure of firm size.

explained in company annual reports (ASX Listing Rule 4.10.3). The costs of compliance are likely to affect market participants differently and normative concepts prescribed by legislation or recommended as *best practice* require validation by empirical testing within relevant institutional settings (Hutchinson, 2009). The comply or explain principle is aimed at overcoming the inflexibility of prescribing regulations for all companies. Maintaining flexibility in governance choices is important because effective governance practice is likely to differ substantially between different companies. However, it is important for policy makers to have empirical evidence on the effectiveness of governance choices for different sized businesses so that legislation can be reviewed and potentially modified (Christensen et al., 2015; Clout et al., 2013; Hutchinson, 2009).

The paper proceeds as follows. In the next section we review the relevant literature and develop propositions regarding company size, governance choices and earnings quality. In the third section, we specify the research design and this is followed in the fourth section with the data analysis, including descriptive statistics, cluster analyses and tests of differences in earnings quality across clusters. The final section discusses results and suggestions for ongoing research.

2. Literature and Propositions

2.1 Company size and governance choice

Substantial prior research highlights the relation between company size and the choices made by companies regarding governance structure. One group of prior studies consistently finds an association between company size and choice of board structure. Guest (2008) summarises prior United States (US) studies that examine the determinants of board structure. He reports that in 16 of the 22 studies surveyed over the period from 1995 to 2008, company size is a significant explanatory variable for board size and composition.

Larger companies have higher agency costs (Dey, 2008) and higher levels of information asymmetry (Demsetz and Lehn, 1985; Gilson et al., 2001; Bushman et al., 2004). Larger companies also have more complex operations and a greater demand for board monitoring and advice. To meet this demand, large companies engage outside directors with a range of expertise thereby resulting in larger and more independent boards (Boone et al., 2007). Boone et al., (2007) report a positive relation between board size and composition and complexity of company operations for a sample of US companies. Dedman (2000) also finds a positive relation between size and adoption of the Cadbury Committee best practice board structure recommendations for United Kingdom (UK) companies. Dedman (2000) suggests that this association is a consequence of larger companies having relatively low direct compliance costs of adoption compared to relatively high political costs of non-compliance. Therefore, larger companies have an incentive to adopt governance *best practice* to the extent that managers perceive it reduces political costs.

Other studies show that demand and relative cost issues have an association with governance choices other than those related to the board of directors. For example, Talaulicar and Werder (2008) examine patterns of compliance with the voluntary German Corporate Governance Code and find a positive association between company size and the extent of compliance with that code. The authors report that companies exhibiting above average levels of code adoption are larger on measures of sales revenue, number of employees, and market capitalisation.

The cluster analysis conducted in this study explores the interaction between company size and governance choice. From the prior research discussed above we propose that company size is a significant variable in the formation of clusters in our analysis because of different company complexity and cost considerations. Our first proposition is therefore:

P1: Companies of similar size choose similar formal corporate governance mechanisms.

2.2 Effectiveness of governance choice

In this section we develop our second proposition regarding the effectiveness of selected corporate governance mechanisms. Prior studies suggest that companies choose corporate governance mechanisms that are appropriate for their operating environment.

Boone et al., (2007) find evidence that board size and composition is associated with economic considerations arising from a broad range of company-specific and managerial characteristics. These characteristics include the complexity of the company's operations, the extent of opportunities for managers to consume private benefits, and the extent of other constraints on managers' decisions. Boone et al., (2007, p.91) conclude that boards generally select mechanisms to meet their 'unique competitive environment'.

Lehn et al., (2009) and Linck et al., (2008) find evidence that board size and structure are determined in a manner that is consistent with company value maximisation. Their results suggest that choices of board structure and size are determined by tradeoffs between the incremental benefits and costs. Illustrative models developed by Coles et al., (2008) demonstrate that companies tend to choose an optimal board structure unless the transaction costs of altering board structure are significant.

Overall, the literature indicates that companies are motivated to choose formal corporate governance structures that are appropriate to their operating environment. The choices are therefore not idiosyncratic, but motivated to ensure adequate levels of monitoring of management or sufficient advisory capacity. However, choice of governance structure is limited to some extent by transaction costs.

Our second proposition assumes, as prior research suggests, that the governance structures of most companies are adapted to enhance their unique competitive environment. Therefore, the cluster analysis conducted identifies salient groups of companies that have adopted similar governance structures as a response to a homogeneous environment. No

difference in the quality of reported earnings between company clusters is expected if choice of governance structure is an effective response to that environment. If governance choices are inconsistent with *best practice* recommendations, this will be reflected in differences in the quality of reported earnings between clusters. We expect companies to make effective choices and therefore our second proposition is:

P2: Clusters identified by size and choice of governance structure have similar earnings quality.

3. Research method

3.1 Sample selection

The sample consists of listed Australian companies in 2004 with a 30 June balance date. We use 2004 data because it was the first year available after the Corporate Governance Council released Principles of Good Corporate Governance and Best Practice Recommendations in 2003. Recommended principles introduced in 2003 continue to apply regardless of minor amendments made so that the sample is relevant to recent times (ASX, 2014, ASX, 2010). A preliminary sample of 900 companies was identified from the Aspect DatAnalysis database. Financial data were collected for the years 2000 to 2006 so that earnings quality measures could be calculated for 2001 to 2005.[3] This data requirement reduced the sample size to 559 companies for our primary analysis. Data for the governance variables were hand collected from published annual reports for the financial year ending 2004.

3.2 Variables

3.2.1 Governance variables.

We include in our analyses key formal governance mechanisms related to board structure, audit committee, and the external audit function. In addition, we include a measure of shareholder concentration because this variable has an important role in substituting for

[3] Lead and lag years are required for the model calculation.

formal governance mechanisms (DeFond and Jiambalvo, 1991; Dechow et al., 1996; Bédard et al., 2004; Birt et al., 2006; Rainsbury et al., 2008). Prior studies and the ASX recommendations identify governance characteristics that are considered to be *best practice*. It is with reference to ASX *best practice* that we determine the level of governance adoption in our analyses. A discussion of each of the governance mechanisms is presented in the remainder of this section.

Board independence.

The ASX suggests that a majority of the board should be independent directors (ASX 2007, Recommendation 2.1). The importance of board independence to effective monitoring is highlighted by findings of a significant negative relationship between board independence and earnings management (Davidson et al. 2005; Koh et al., 2007; Clout, et al., 2013). In addition, the appointment of the Chief Executive Officer (CEO) to the position of chair is likely to result in a reduced level of independence and effective monitoring due to concentration of board power and potential conflicts of interest (Forker, 1992; Beasley, 1996).

We include in our cluster analyses a measure of the proportion of independent directors on the board (PROIND). We selected a continuous measure of board independence rather than the dichotomous variable of a majority of independent directors on the board to be consistent with prior Australian studies (Kent et al., 2010; Clout et al., 2013). A dummy variable for whether the board chair and CEO positions are combined (DUAL) is also included to determine patterns of adoption of governance practice related to board independence.

Audit committee.

The ASX recommends that companies should establish an audit committee so as to safeguard the integrity of financial reporting (ASX 2007, Recommendation 4.1). This recommendation

is particularly relevant to the current study, which uses the quality of earnings information in financial reports to assess monitoring effectiveness. We include in our cluster analyses a dummy variable that indicates whether the company has chosen to establish an audit committee as part of its formal corporate governance structure (AUDCOM).[4]

Shareholder concentration.

Prior studies show that shareholder concentration can play an important role in monitoring managers, and can substitute for formal governance structures (DeFond and Jiambalvo, 1991; Dechow et al., 1996; Bédard et al., 2004; Birt et al., 2006). Formal corporate governance mechanisms are mostly implemented to reduce agency costs because of the separation of ownership and control in companies. Ownership structures with less separation of ownership and control have lower incentives to implement formal corporate governance mechanisms because there is less need to monitor management. We include in the cluster analysis a variable that measures the level of shareholder concentration (BLOCK). The included variable is the percentage of issued ordinary shares held by parties with a five percent or greater shareholding.

External audit.

Choice of external audit firm is also relevant to the analyses. Prior studies suggest that larger audit companies provide a higher level of monitoring (DeAngelo 1981; Francis et al., 1999; Kim et al., 2003). The audit firm size measure is generally based on whether a firm is one of the recognised top tier audit companies (the big 4). Accordingly, we include in our analyses a variable that indicates the engagement of a big 4 audit firm (BIG4).

3.2.2 Measurement of earnings quality.

The measure of earnings quality used in our analyses relies on the model developed by

[4] In order to maximise our sample size, our primary analysis distinguishes between those firms with an audit committee and those without a committee. In additional analysis, we include audit committee characteristics as governance mechanisms on the reduced sample of those firms with an audit committee.

Dechow and Dichev (2002). This model has been widely applied and accepted as a measure for capturing earnings manipulation and the uncertainty of accruals (Francis et al., 2005; Jones et al., 2008; Dechow et al., 2010). Accruals quality is measured in equation (1):

$$\Delta WC_t = \beta_0 + \beta_1 * CFO_{t-1} + \beta_2 * CFO_t + \beta_3 * CFO_{t+1} + \varepsilon_t \quad (1)$$

The dependent variable ΔWC_t is a comprehensive measure of change in current working capital accruals, including change in: accounts receivable, accounts payable, current inventory, current investments, current provisions, and other current assets and liabilities. The cash flow measures are cash flow from operations in the prior, current and future periods. The regression residual provides a measure of accruals quality; it represents the portion of accruals that is not estimated by actual cash flows.

Dechow and Dichev (2002) suggest that, for a series of measures of accruals quality over time, the standard deviation of the residuals is the appropriate measure of overall accruals quality. A high standard deviation signifies high accruals estimation error and therefore, low accruals quality. McNichols (2002) tested a variation to the Dechow and Dichev (2002) model that includes a measure of change in revenue (see Equation 2 below) and the size of property, plant and equipment. Both McNichols (2002) and Francis et al., (2005) show an improvement in model fit by augmenting the original Dechow and Dichev (2002) model with these variables taken from the Jones (1991) model. According to McNichols (2002), these variables are important to forming expectations about current accruals above the contribution of operating cash flows. We use the McNichols (2002) model to estimate accruals quality that is shown in equation (2):

$$\Delta WC_t = \beta_0 + \beta_1 * CFO_{t-1} + \beta_2 * CFO_t + \beta_3 * CFO_{t+1} + \beta_4 * \Delta REV_t + \beta_5 * PPE_t + \varepsilon_t \quad (2)$$

Where:
ΔWC_t = *Comprehensive measure of change in working capital accruals including change in: accounts receivable, accounts payable, current inventory, current investments, current provisions, and other current assets and liabilities.*
CFO_{t-1} = *Cash flow from operations in t-1.*

CFO_t = *Cash flow from operations in t.*
CFO_{t+1} =*Cash flow from operations in t+1.*
ΔREV_t = *Change in operating revenue from t-1 to t.*
PPE_t = *Property Plant and Equipment reported at t.*
ε_t = *Residual.*
All variables are scaled by lagged total assets.

The regression shown in equation (2) is calculated for each of five years from 2001 to 2005, providing five measures of accruals quality for each company. The overall accruals quality measure for each company is the standard deviation of the regression residuals for each company over the five years.

3.2.3 Company size.

Prior related studies have measured company size using financial measures of assets, sales, market capitalisation and the physical measure of employee numbers (Talaulicar and Werder 2008; Boone et al., 2007; Lehn et al., 2009; Dedman, 2000). In this study we use employee numbers as it is suggested that this size variable captures company complexity more effectively than the alternative accounting measures (Kaen and Bauman, 2003). While employee numbers and asset size are generally highly correlated (Agarwal, 1979), prior studies show that this correlation is weak for company samples that differ substantially in size or industry (Hopkins, 1988). Accordingly, because of the heterogeneous nature of our sample we perform additional analysis using total assets as an alternative measure of size to provide a robustness check.

3.3 Statistical method

The objective of our analysis is to determine similar choices of adoption of corporate governance mechanisms and their relation to size and earnings quality. Exploratory cluster analysis is used as it allows for classification of a set of observations into mutually exclusive cluster groups based on combinations of variables, and provides a test of variable

significance in cluster formation. Companies within clusters have homogeneous governance profiles, whereas across clusters companies have heterogeneous governance profiles.

Cluster analysis is suitable for the corporate governance variables included in our analyses (Bhagat et al., 2008) having been used by Gillan et al., (2006) when they concluded that high quality governance measures were substitutes for each other. It is also appropriate for our purposes because it identifies associations and structures in data which are not apparent using alternative analyses and the results provide a definition of a formal classification scheme or taxonomy. It does not require any *a priori* assumptions about grouping of companies according to size. Therefore, problems related to arbitrary classifications of companies based on size measures are eliminated (Corter and Tversky, 1986).

The two step cluster procedure available in the IBM SPSS statistical analysis package is utilised as it allows for inclusion of continuous and categorical variables. The cluster procedure uses a likelihood distance measurement to determine cluster values, and identifies the cluster solution using the Akaike Information Criterion (AIC). A *noise handling* option is applied in the analysis, which removes outlying cases during calculations and subsequently reassigns them to the appropriate clusters once the cluster solution has been calculated.

4. Results

4.1 Descriptive statistics

Descriptive statistics for governance variables are presented in Table 1. The average proportion of independent directors (PROIND) is 50 percent while the mean of the shareholder concentration variable is 40 percent. Mean company size measured by the number of employees is 1185 (EMP). An audit committee was formed by approximately 83 percent of companies (AUDCOM), and 61 percent engaged one of the big 4 audit firms (BIG4). Only 11 percent of the sample companies have a joint CEO/board chair (DUAL).

4.2 Cluster analysis results

The cluster analysis results, using number of employees as the size variable, are presented in Table 2. Five clusters are identified, and the employee size variable (EMP) is significant (at $p < 0.05$) in four of the five clusters (clusters 2, 3, 4 and 5). In relation to size, there was one cluster consisting of very large companies (cluster 1), a medium size company cluster (cluster 2), and three small company clusters (clusters 3, 4 and 5). Differences are observed in the adoption of governance practice across the clusters. The results are therefore consistent with proposition one that there is an association between company size and the choice of corporate governance mechanisms. The characteristics of each of the clusters are outlined below.

Cluster 1 consists of 150 companies, and is the largest of the reported clusters. The proportion of independent directors (PROIND), block shareholding (BLOCK), existence of an audit committee (AUDCOM), engagement of a big 4 audit company (BIG4), and the existence of a dual CEO/board chair board structure (DUAL) are significant in cluster formation (at $p < 0.05$). The cluster mean employee size (EMP) is the largest of the clusters at 1890. All of the companies have an audit committee (AUDCOM) and engage a big 4audit company (BIG4), while none of the companies have a dual CEO/board chair (DUAL). The cluster mean of proportion of independent directors (PROIND) is the highest for reported clusters at 68 percent, while the mean percentage of block shareholding is the lowest at 27 percent. The accruals quality (AQ) mean is significantly different to other clusters. A measure of 0.07 is the highest accruals quality for all the clusters because of the lower estimated error in predicting actual cash flows.

In Cluster 2, the proportion of independent directors (PROIND), block shareholding (BLOCK), existence of an audit committee (AUDCOM), engagement of a big 4 audit company (BIG4), and the existence of a dual CEO/board chair board structure (DUAL) are significant in cluster formation (at $p < 0.05$). The cluster consists of 132 companies and the

mean employee size (EMP) is 752. All of the companies have an audit committee (AUDCOM) and engage a big 4 audit company (BIG4) while none of the companies have a dual CEO/board chair (DUAL). The cluster mean of proportion of independent directors is low at 38 percent, while the mean percentage of block shareholding is high at 56 percent. The accruals quality measure for this cluster is 0.11.

Cluster 3 comprises 83 companies and is the cluster with the smallest mean employee size (EMP = 40). The proportion of independent directors (PROIND), employee size (EMP), existence of an audit committee (AUDCOM), engagement of a big 4 audit company (BIG4), and the existence of a dual CEO/board chair structure (DUAL) are significant in the formation of the cluster (at p <0.05). None of these companies have an audit committee (AUDCOM) and 69 percent have a dual CEO/board chair. Fifty-four percent of the companies engage one of the big 4 audit firms (BIG4) to provide external audit services. This is an unexpectedly high result for small companies given their generally less complex operations. The cluster mean of proportion of independent directors is low at 40 percent, and the mean percentage of block shareholding is 38 percent. The accruals quality (AQ) measure for this cluster is 0.13.

Cluster 4 consists of 51 companies, and is the smallest of the reported clusters. Employee size (EMP), the existence of an audit committee (AUDCOM), the engagement of a big 4 audit company (BIG4), and the existence of a dual CEO/board chair (DUAL) are significant in cluster formation (at p <0.05). The cluster mean employee size (EMP) is 242. All of the companies have an audit committee (AUDCOM), and 47 percent engage a big 4 audit firm (BIG4). All of the companies have a dual CEO/board chair (DUAL). The cluster mean of the proportion of independent directors is 46 percent, and the mean percentage of block shareholding is 41 percent. The accruals quality (AQ) measure for this cluster is also 0.13.

Cluster 5 consists of 143 companies. Employee size (EMP), the existence of an audit committee (AUDCOM), the engagement of a big 4 audit firm (BIG4), and the existence of a dual CEO/board chair (DUAL) are significant in cluster formation (at p <0.05). The cluster mean employee size (EMP) is 195. All of the companies in cluster 5 have an audit committee (AUDCOM), yet none engage a big 4 audit company (BIG4). None of the companies have a dual CEO/board chair (DUAL). The cluster mean of proportion of independent directors is high at 51 percent, and the mean percentage of block shareholding is 41 percent. The accruals quality (AQ) measure for this cluster is 0.11.

To test for differences in accruals quality between the clusters dominated by smaller company's (clusters 3, 4 and 5), an ANOVA was conducted. The results show there is no significant difference in accruals quality between these company clusters (F= 1.29, p = 0.28). Overall, the results show substantial variation in the choice of governance structures for the sample companies and, consistent with proposition one, company size measured by employee numbers is associated with the observed variation. For larger companies, the choice of governance structure is significantly associated with the quality of reported earnings. However, for smaller companies, variations in governance structure do not appear to be related to the quality of reported earnings. This provides partial support for our second proposition that there is no difference in earnings quality between company clusters identified by their size and choice of corporate governance structure.

Additional analyses were undertaken using total assets rather than employee numbers as a measure for company size. The results of this analysis are presented in Table 3. Overall, the results using total assets as a measure of company size are generally consistent with those reported in the employee size analysis.

5. Additional Analyses

5.1 Audit committee analysis

We conduct a further cluster analysis on a subset of companies (430) that have an audit committee. Characteristics of an audit committee that have been shown to moderate discretionary reporting behaviour for Australian companies include: expertise (Knapp 1987; DeZoort and Salterio, 2001; Cohen et al., 2002); diligence in discharging responsibilities (Collier 1993; McMullen and Raghunandan, 1996; Hughes 1999; Farber, 2005); and the number of members (size), which enhances the committee's authority (Kalbers and Fogarty, 1993; Karamanou and Vafeas, 2005).

We include in the analysis dummy variables for committee size, independence, diligence and expertise. The independence dummy (ACIND) is determined according to the ASX recommendation that all committee members are to be non-executive directors and a majority of members are to be independent (ASX 2007, Recommendation 4.2). ACIND is coded one (1) if this recommendation is met, and zero (0) otherwise. The ASX also recommends a minimum committee size of three (ASX 2007, Recommendation 4.2). The variable audit committee size (ACSIZE) is coded one (1) if this recommendation is met, and zero (0) otherwise. We include the variable of number of audit committee meetings (ACMEET) based on the number of committee meetings held in a year for a measure of diligence. ACMEET is coded one (1) if the company has at least the sample median number of committee meetings and zero (0) otherwise. For expertise, we include a variable (ACEXPERT) that indicates whether there is one committee member with professional accounting qualifications. ACEXPERT is coded one (1) if this criterion is met, and zero (0) otherwise. The results of the cluster analysis conducted using these audit committee variables is reported in Table 4. Four clusters are identified.

Cluster 1 consists of only 35 companies, with a mean employee size of 9103. This cluster includes very large companies with moderate levels of adoption of *best practice* and it has the lowest mean accruals quality (AQ = 0.19) of the four clusters. This result is

interesting because we expected very high standards of corporate governance for companies of this size.

Cluster 2 also includes very large companies, with a mean employee size of 2456. The cluster has the highest accruals quality (AQ) measure of the four clusters at 0.07. As expected for very large companies, the levels of adoption of governance *best practice* are high. Cluster 2 has the highest proportion of independent directors (PROIND) of the clusters at 61 percent, but the lowest percentage of block shareholders (BLOCK) at 36 percent. All of the companies in cluster 2 engage a big 4 audit company (BIG4), and separate the CEO and board chair roles (DUAL). All of the cluster companies adopt *best practice* for size and independence for the audit committee variables. Moreover, all of the companies exceed the sample mean for number of audit committee meetings, and 51 percent have an audit committee member with relevant expertise.

Cluster 3 consists of 172 companies, and has a mean accruals quality (AQ) measure of 0.09. The mean employee size for the cluster (EMP) is 601; suggesting that it includes relatively large companies. The cluster mean of proportion of independent directors (PROIND) is 53 percent, and the mean percentage of block shareholding is 43 percent. Half of the cluster companies engage a big 4 audit firm (BIG4), and only 4 percent have a dual CEO/board chair (DUAL). All of the companies meet the independence recommendation criteria, about half have a member with expertise, and 35 percent meet the meeting criteria for the audit committee variables.

Cluster 4 consists of 110 companies and has a mean accruals quality (AQ) measure of 0.12. The mean employee size for the cluster (EMP) is 440, suggesting that it consists of medium to moderately large companies. The cluster mean of proportion of independent directors is low at 44 percent, and the mean percentage of block shareholding is 45 percent. Approximately half of the cluster companies engage a big 4 audit firm (BIG4), and 11

percent have a dual CEO/board chair (DUAL). The size recommendation is met by 74 percent, none meet the independence recommendation, about half have a member with expertise, and none meet the meeting criteria for the audit committee variables. Overall, the structure and operation of the audit committee for cluster 4 is characterised by low levels of adoption of *best practice*.

Overall, the results suggest that audit committee related governance choices result in differences in the quality of reported earnings. Cluster 2, which has the highest levels of adoption of *best practice*, shows the highest level of reported earnings quality. In contrast, clusters 3 and 4, which include relatively large companies, have lower accruals quality.

To consider the differences between clusters more closely, an ANOVA with Tukey post-hoc comparison was conducted. The results indicate a significant difference between the company clusters (F= 11.47, $p < 0.01$) and provide further evidence that choice of corporate governance structure tends to have a significant effect on the quality of reported earnings for larger companies.

6. Discussion and Conclusion

The objective of this paper was to explore choice of corporate governance mechanisms of Australian companies, and to determine whether choices of adoption are effective by examining their association with the quality of reported earnings. Cluster analyses were conducted with governance *best practice* variables, company size, and an accruals quality variable included.

Our primary analysis, using employee numbers to measure company size, reveals one cluster of very large companies, one cluster of large companies, and three small company clusters. The results show that patterns of governance choice differ between company clusters, and that larger companies tend to exhibit higher levels of adoption of governance *best practice* than smaller companies. While each of the small and large company clusters

show different governance arrangements, no significant difference was observed in the quality of their reported earnings. This result is consistent with prior studies which show that companies are motivated to choose a governance structure that is appropriate to their operating environment, limited to some extent by transaction costs. The cluster of very large companies did have a significantly higher level of earnings quality. This may be explained by much greater board independence, which is the key distinguishing governance feature of the very large company cluster.

Second, we conducted analysis using various audit committee characteristics rather than a dummy variable that indicated existence of an audit committee. This analysis used the sub-sample of companies that had formed an audit committee and indicated that adoption of audit committee *best practice* is associated with a difference in earnings quality. The difference between the audit committee analysis and the main analysis may be explained by the different sample. Smaller companies are less likely to form an audit committee and therefore the sample for the audit committee characteristics is biased towards larger companies. The implication is that, for larger companies, governance choice regarding the audit committee is important to maintaining the quality of financial reporting. Independence is the most important to maintaining earnings quality of the audit committee characteristics examined. This result suggests that the existing ASX requirement for the top 300 companies to comply with the recommendations that all committee members should be non-executive directors and a majority of members should be independent (ASX, 2007, Recommendation 4.2) could be extended to all companies in the S & P All Ordinaries Index.

Notwithstanding the above suggestion, the results of this study are generally supportive of the voluntary governance approach. Our study suggests that, for smaller companies, effective governance is possible without necessarily implementing all of the *best practice* recommendations. Hence, for those companies outside the top 500, the findings

provide support for the corporate governance principles and recommendations to remain as guidelines to *best practice* rather than mandatory requirements.

Our results are mostly consistent with previous Australian studies examining the implementation of recommended corporate governance practices, financial performance and earnings quality. Christensen et al., (2015) found that small companies changed their corporate governance practices to follow the recommendations introduced in 2003. This change was not systematically associated with better financial performance or earnings quality for these small companies. Clout et al., (2013) categorised listed companies as emerging and established companies based on their market capitalisation. They found that earnings quality was higher for established companies following the introduction of the corporate governance recommendations. However, this was not the case for emerging companies.

Our analysis is limited to providing a very broad view of governance choice and its effectiveness. While the cluster analysis approach allows for homogeneous groups of companies to be identified, it should be recognised that there is variation on relevant variables within each of the clusters. The generalisability of our results is limited by the cross-sectional analysis performed. This approach does not account for change over time in external factors that affect governance choice motivations, nor does it take account of changes that occur within companies over time.

The current study highlights opportunities for future research. Our results suggest that, particularly for larger companies, a benefit accrues from adoption of governance *best practice*. Improved understanding of this relation would be useful in shaping governance policy in terms of gaining insight as to when it might be appropriate to impose governance requirements on companies. Future studies should examine more closely the likely costs of not applying governance *best practice*. This could be particularly relevant for growth

companies as these companies may be reluctant to expend resources on increasing their compliance with *best practice*. Also, the effectiveness of potential substitute governance mechanisms such as block shareholders for large companies is questioned by the results presented.

Table 1: Descriptive Statistics (*n*=559)

Continuous Variables	**Mean**	**Std. Dev.**	**Min.**	**Median**	**Max.**
Proportion of Independent Directors (PROIND)	0.50	0.24	0.00	0.50	1.00
Block Shareholding (BLOCK)	39.70	22.65	0.00	40.53	100.00
Number of Employees (EMP)	1185.34	5224.79	0.00	56.00	78100.00
Dichotomous Variables	**No (0)**	**Yes (1)**			
Audit Committee (AUDCOM)	17%	83%			
Big 4 Auditor (BIG4)	39%	61%			
Dual CEO/Board Chair (DUAL)	89 %	11%			

Table 2: Cluster Results – Employee Size (*n*=559)

Cluster 1 (*n*=150)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.68	0.25	0.67	1.00
Block Shareholding* (BLOCK)	0.27	0.00	0.28	0.79
Number of Employees (EMP)	1889.52	0.00	320.00	14671.00
Accruals Quality* (AQ)	0.07	0.00	0.05	0.47
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	150 (100%)		
Big 4 Auditor (BIG4)	0 (0%)	150 (100%)		
Dual CEO/Board Chair* (DUAL)	150 (100%)	0 (0%)		
Cluster 2 (*n*=132)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.38	0.00	0.40	0.80
Block Shareholding* (BLOCK)	0.56	0.15	0.55	1.00
Number of Employees* (EMP)	751.72	0.00	151.00	13000.00
Accruals Quality (AQ)	0.11	0.01	0.08	0.67
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	132 (100%)		
Big 4 Auditor* (BIG4)	0 (0%)	132 (100%)		
Dual CEO/Board Chair* (DUAL)	132 (100%)	0 (0%)		
Cluster 3 (*n*=83)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.40	0.00	0.33	1.00
Block Shareholding (BLOCK)	0.38	0.00	0.36	0.93
Number of Employees* (EMP)	39.46	0.00	7.00	1186.00
Accruals Quality (AQ)	0.13	0.00	0.09	0.65
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	83 (100%)	0 (0%)		
Big 4 Auditor* (BIG4)	45 (54%)	38 (46%)		
Dual CEO/Board Chair* (DUAL)	57 (69%)	26 (31%)		
Cluster 4 (*n*=51)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors (PROIND)	0.46	0.00	0.500	0.80
Block Shareholding (BLOCK)	0.41	0.00	0.43	0.88
Number of Employees* (EMP)	241.98	0.00	38.00	2031
Accruals Quality (AQ)	0.13	0.01	0.11	0.72
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	51 (100%)		
Big 4 Auditor (BIG4)	24 (47%)	27 (53%)		
Dual CEO/Board Chair* (DUAL)	0 (0%)	51 (100%)		
Cluster 5 (*n*=143)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors (PROIND)	0.51	0.00	0.500	1.00
Block Shareholding (BLOCK)	0.41	0.00	0.41	0.87
Number of Employees* (EMP)	195.43	0.00	49.00	5387.00
Accruals Quality (AQ)	0.11	0.01	0.07	0.63
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	143 (100%)		
Big 4 Auditor* (BIG4)	143 (100%)	0 (0%)		
Dual CEO/Board Chair* (DUAL)	143 (100%)	0 (0%)		

*Denotes variable is significant in cluster formation at $p<0.05$

Table 3: Cluster Results – Asset Size (*n*=582)

Cluster 1 (*n*=286)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.55	0.00	0.56	1.00
Block Shareholding (BLOCK)	0.40	0.00	0.41	1.00
Size (ASSET)	562m	1.3m	95m	7271m
Accruals Quality* (AQ)	0.09	0.00	0.06	0.47
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	286 (100%)		
Big 4 Auditor* (BIG4)	0(100%)	286 (100%)		
Dual CEO/Board Chair* (DUAL)	286 (100%)	0 (0%)		
Cluster 2 (*n*=77)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.44	0.00	0.50	0.80
Block Shareholding (BLOCK)	0.41	0.00	0.43	0.93
Size* (ASSET)	59m	0.7m	16m	951m
Accruals Quality (AQ)	0.12	0.01	0.09	0.58
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	26 (34%)	51 (66%)		
Big 4 Auditor (BIG4)	39(51%)	38 (49%)		
Dual CEO/Board Chair* (DUAL)	0 (0%)	77 (100%)		
Cluster 3 (*n*=139)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors (PROIND)	0.51	0.00	0.50	1.00
Block Shareholding (BLOCK)	0.41	0.00	0.41	0.87
Size* (ASSET)	51m	1m	22m	1414m
Accruals Quality* (AQ)	0.09	0.01	0.07	0.41
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	0 (0%)	139 (100%)		
Big 4 Auditor* (BIG4)	139 (100%)	0 (0%)		
Dual CEO/Board Chair* (DUAL)	139 (100%)	0 (0%)		
Cluster 4 (*n*=64)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.40	0.00	0.33	1.00
Block Shareholding (BLOCK)	0.34	0.00	0.32	0.87
Size* (ASSET)	11m	0.6m	7m	52m
Accruals Quality (AQ)	0.12	0.00	0.09	0.37
Dichotomous Variables	**No (0)**	**Yes (1)**		
Audit Committee* (AUDCOM)	64 (100%)	0 (0%)		
Big 4 Auditor* (BIG4)	37 (58%)	27 (42%)		
Dual CEO/Board Chair* (DUAL)	64 (100%)	0 (0%)		

*Denotes variable is significant in cluster formation at $p<0.05$

Table 4: Cluster Results – Audit Committee (*n*=430)

Cluster 1 (*n*=35)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors (PROIND)	0.53	0.20	0.56	0.90
Block Shareholding (BLOCK)	0.43	0.00	0.46	0.82
Number of Employees (EMP)	9103.00	1.00	161.00	78100.00
Accruals Quality (AQ)	0.19	0.01	0.09	1.16
Dichotomous Variables	**No (0)**	**Yes (1)**		
Big 4 Auditor* (BIG4)	4 (11%)	31 (89%)		
Dual CEO/Board Chair* (DUAL)	10 (29%)	25 (71%)		
Audit Committee Size (ACSIZE)	12 (34%)	23 (66%)		
Audit Committee Independence (ACIND)	8 (23%)	27 (77%)		
Audit Committee Expertise (ACEXPERT)	13 (37%)	22 (63%)		
Audit Committee Diligence (ACMEET)	9 (26%)	26 (74%)		
Cluster 2 (*n*=113)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.61	0.00	0.67	1.00
Block Shareholding (BLOCK)	0.36	0.00	0.41	0.90
Number of Employees (EMP)	2456	0.00	900.00	19081.00
Accruals Quality* (AQ)	0.07	0.00	0.05	0.29
Dichotomous Variables	**No (0)**	**Yes (1)**		
Big 4 Auditor* (BIG4)	0 (0%)	113 (100%)		
Dual CEO/Board Chair* (DUAL)	113 (0%)	0 (100%)		
Audit Committee Size* (ACSIZE)	0 (100%)	113 (0%)		
Audit Committee Independence* (ACIND)	0 (0%)	113 (100%)		
Audit Committee Expertise (ACEXPERT)	55 (49%)	58 (51%)		
Audit Committee Diligence* (ACMEET)	0 (0%)	113 (100%)		
Cluster 3 (*n*=172)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors (PROIND)	0.53	0.00	0.50	1.00
Block Shareholding (BLOCK)	0.43	0.00	0.39	.96
Number of Employees* (EMP)	601.50	0.00	63.00	14671.00
Accruals Quality (AQ)	0.09	0.01	0.07	0.47
Dichotomous Variables	**No (0)**	**Yes (1)**		
Big 4 Auditor* (BIG4)	86 (50%)	86 (50%)		
Dual CEO/Board Chair* (DUAL)	165 (96%)	7 (4%)		
Audit Committee Size* (ACSIZE)	101 (59%)	71 (41%)		
Audit Committee Independence* (ACIND)	0 (0%)	172 (100%)		
Audit Committee Expertise (ACEXPERT)	92 (54%)	80 (46%)		
Audit Committee Diligence* (ACMEET)	112 (65%)	60 (35%)		
Cluster 4 (*n*=110)				
Continuous Variables	**Mean**	**Min**	**Median**	**Max**
Proportion of Independent Directors* (PROIND)	0.44	0.00	0.40	1.00
Block Shareholding (BLOCK)	0.45	0.00	0.45	.96
Number of Employees* (EMP)	440.00	0.00	53.50	8625.00
Accruals Quality (AQ)	0.12	0.01	0.08	0.78
Dichotomous Variables	**No (0)**	**Yes (1)**		
Big 4 Auditor* (BIG4)	56 (51%)	54 (49%)		
Dual CEO/Board Chair (DUAL)	98 (89%)	12 (11%)		
Audit Committee Size (ACSIZE)	29 (26%)	81 (74%)		
Audit Committee Independence* (ACIND)	110 (100%)	0 (0%)		
Audit Committee Expertise (ACEXPERT)	58 (53%)	52 (47%)		
Audit Committee Diligence* (ACMEET)	70 (64%)	0 (36%)		

*Denotes variable is significant in cluster formation at $p<0.05$

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