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Compliance with Corporate Governance Principles: Australian Evidence

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Abstract

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Keywords

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JEL Classification: M40

Keywords: Corporate Governance, Discretionary Accruals, Earnings Management, Modified Jones Model.

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1 INTRODUCTION

In August 2007, the Australian Corporate Governance Council (ACGC) issued the second edition of its Principles and Recommendations (ACGC-PR) for enhancing the corporate governance structure of Australian Securities Exchange (ASX) listed companies. Australian listed companies are required to prepare corporate governance statements that disclose the extent of their compliance with these principles and recommendations using an "if not, why not" approach that requires them to explain the circumstances underpinning their decision not to comply with particular Principles or Recommendations. This study examines the level of compliance by Australian listed companies with the ACGC-PR and investigates whether companies with higher levels of compliance engage in lower levels of earnings management. The focus is on the controlling function of the ACGC-PR through investigating the association with accrual-based earnings management. This paper contributes to the earnings management literature in two ways. First, prior research suggests that managers use discretionary accruals to manage certain benchmarks such as the level of earnings (see Dechow et al. 1995). This study demonstrates how corporate governance intervention influences firms in the management of manage earnings benchmarks. In particular the study results suggest that, post ACGC-PR, there is evidence of an association between a high level of compliance with the principles and recommendations and a low level of earnings management. Second, the ACGC-PR were designed to direct and control corporate governance. Since the ACGC-PR represent a mechanism aimed at improving outcomes for investors (referred to as 'Principals' within the agency theory paradigm), then investors have incentives to identify and reward compliance with the ACGC-PR. The results in this study suggest that the ACGC-PR is associated with a decrease in discretionary accrual actions by high level compliers, and is arguably an effective method of addressing the agency problem. The remainder of this paper is organised as follows: Section 2 provides an explanation of the link between corporate governance mechanisms and the agency problem, while Section 3 provides a review of related literature and develops the hypothesis tested in this study. In Section 4 the research method and sample selection approach are described, and the modified Jones model is presented. In Section 5 the results are presented and discussed. Section 6 provides a conclusion and some implications for future research.

2 CORPORATE GOVERNANCE AND THE AGENCY PROBLEM

While there is no single generally accepted definition for corporate governance, a system by which a company is directed and controlled (Cadbury 1992; Hodges, Wright & Keasey 1996) appears to be the most common understanding proposed to describe corporate governance. The focus of this study is on controlling role of corporate governance, as the study offers an explanation for the link between corporate governance and the "agency problem" which is attributed to the separation between managers and principals, the separation of levels of management, and the conflicts of interest between managers and equity and debt holders (Davidson, Goodwin-Stewart & Kent 2005; Dechow et al. 2012; Fama & Jensen 1983a, 1983b; Stolowy & Breton 2004).

Earnings management is the discretionary manipulation of earnings levels by managers. Managers can choose from among the available accounting options to align their earnings levels with their intentions (Stolowy & Breton 2004; Tucker & Zarowin 2006). Earnings management manipulation occurs within the boundaries of accounting standards and the law. The benchmark for distinguishing between the activities that constitute earnings management and those that do not depends on the intentions of the manager choosing the accounting standards (McVay 2006). Earnings management studies are predominantly based on the assumption that managers behave opportunistically. Therefore, from the agency perspective

regarding corporate governance, monitoring managers is considered a necessity (Benkel, Mather & Ramsay 2006; Brennan 2008; Bugshan 2005; Davidson, Goodwin-Stewart & Kent 2005; Koh 2003). According to this viewpoint, using corporate governance to improve the internal and external control of managers (for example, by monitoring the board of directors) may decrease opportunities for earnings management and improve the credibility of financial information (Dey 2005; Rogers 2006). From a rational standpoint, earnings management is a consequence of the agency problem and it can be mitigated by a good corporate governance structure. In other words, good corporate governance principles and recommendations can be considered a means of controlling managers in the realm of monitoring and bonding costs.

The major aim of the Organisation for Economic Cooperation and Development (OECD) in establishing its *Principles of Good Corporate Governance* is to mitigate the agency problem that is caused by the separation of owners and managers (Sharar 2006). Previous research suggests that firms with high residual agency losses attempt to mitigate these costs by engaging in monitoring activities through a board or audit committee as part of an internal corporate governance mechanism (Benkel, Mather & Ramsay 2006; Bugshan 2005; Chi et al. 2009; Davidson, Goodwin-Stewart & Kent 2005). Corporate governance exercises two opposite effects on agency costs: it increases monitoring and bonding costs, and it decreases residual losses. A pragmatic motive for implementing corporate governance practice is lied under this assumption that benefits outweigh costs of implementation.

3 LITERATURE REVIEW AND STUDY HYPOTHESIS

While a large number of the studies of earnings management focus on the opportunistic use of accruals, there are relatively few studies investigating the association between corporate governance codes/ principles and earnings management resulting from the use of discretionary accruals. A few studies have been conducted that examine overall compliance levels with the Corporate Governance Codes in South Africa (Ntim et al. 2012), Romania (Dănescu & Spătăcean 2011) and England (Selvaggi & Upton 2008). These studies did not examine the link between the aggregate level of compliance with corporate governance principles and earnings management practices. Chang and Sun (2009) used aggregate corporate governance scores consisting of five corporate governance attributes recommended in the Sarbanes–Oxley Act (2002) (SOX) to investigate the association between overall corporate governance and earnings management for a sample of companies in the United States (US). They argued that an optimal corporate governance structure is formed by taking into account multiple complementary CG dimensions. To date, no study has been located that has focused on the aggregate level of compliance with the ACGC-PR and an association with earnings management.

This study examines the aggregate influence of 27 recommendations introduced under the eight corporate governance principles. These principles that are discussed in this section include: 1. management functions and oversight; 2. board structure; 3. ethics; 4. audit committee, 5. timely and balanced disclosure; 6. rights of shareholders; 7. risk management; and 8. remuneration. The study seeks to investigate the association between these attributes (in aggregate) and earnings management. Prior research suggests that accruals are one of the most commonly used proxies for earnings management (Benkel, Mather & Ramsay 2006; Davidson, Goodwin-Stewart & Kent 2005; DeAngelo 1986; Hsu & Koh 2005; Jones 1991; Koh 2003; Kothari, Leone & Wasley 2005). Classification shifting within income statements is another proxy for earnings management (Healy & Wahlen 1999). In addition, the timing of sales, understating the cost of goods sold, and reducing discretionary expenses such as research and development, advertising and some sales and administrative expenses have also

been identified as proxies for real earnings management (Cohen, J, Krishnamoorthy & Wright 2008; Fama & Jensen 1983b; Koh 2003; Patel, Balic & Bwakira 2002).

3.1 ACGC Corporate Governance Principles and Recommendations
In this section the Principles and Recommendations proposed by the ACGC are discussed briefly and the testable hypothesis for this study is developed.

3.1.1 Management functions and oversight (Principle 1) and earnings management
Principle 1 deals with the roles and responsibilities of boards and management. Companies are encouraged to distinguish between 'the functions reserved to the board and those delegated to senior executives' and disclose 'the process for evaluating the performance of senior executives' (ACGC 2007, pp. 13-5). The OECD (2004) suggests that the purpose of evaluating management performance is to enable shareholders to have access to 'relevant information on a timely and regular basis' (Sharar 2006, p. 75). Feltham and Xie (1994) argue that tying managers' performance to their compensation can offer incentives for managers to improve their performance and that it has become common to measure managers' performance using financial numbers (RiskMetrics 2010). Critically, when performance is measured by financial numbers, there is an incentive for managers to manipulate the numbers to earn more. Feltham and Xie (1994) propose multiple measures, both performance-based and accounting-based, for evaluating performance. Patel, Balic and Bwakira (2002) suggest that disclosing the senior executive functions and the process of evaluating executive directors' performance, recommended under Principle 1, is likely to improve transparency and reduce information asymmetry. Further, Richardson's (2000) results indicate that greater levels of information asymmetry yield greater levels of earnings management.

3.1.2 Board structure (Principle 2) and earnings management
Board structure (BS) is the focus of P2, which indicates that 'companies should have a board of an effective composition, size and commitment to adequately discharge its responsibilities and duties' (ACGC 2007, p. 16). The composition and size of boards of directors have been broadly investigated by scholars for their impact on enhancing the effectiveness of the boards' monitoring role and in mitigating the agency problem (Bedard, Chtourou & Courteau 2004; Bédard & Gendron 2010; Cheng & Warfield 2005; Cohen, J, Krishnamoorthy & Wright 2008; Davidson, Goodwin-Stewart & Kent 2005; Finnerty 1976; Jaffe 1974; Jensen 1993; Klein 2002b; Merchant & Rockness 1994; Xie, Davidson & DaDalt 2003). A board's effectiveness is also described as its ability to prevent managers from making decisions that conflict with stakeholder interests (Jo & Kim 2007). The composition of the board appears to be correlated with the likelihood that managers will engage in earnings management (Lobo & Zhou 2001).

3.1.3 Ethics (Principle 3) and earnings management
Principle 3 seeks to encourage ethical promotion and responsible decision-making in companies. It concentrates on the establishment of a code of conduct and on insider trading policies, and indicates that 'companies should actively promote ethical and responsible decision making' (ACGC 2007, p. 21). Disclosing ethical issues or adopting codes of conduct are strongly supported by diverse participants including shareholders and boards (Epstein, McEwen & Spindle 1994; Jongsureyapart 2006). Beneish and Vargus (2002) examined whether insiders engage in income-increasing and income-decreasing earnings management in order to benefit from buying and selling their own shares and found a relationship between earnings management and abnormal insider trading. They identified

overstated earnings in the years before instances of insider selling and decreases in income in the years before instances of abnormal insider buying. Cheng and Warfield (2005) defend the proposition that abnormal insider trading rises just prior to increasing share prices, which is consistent with Beneish and Vargus's (2002) findings. Aboody, Hughes and Liu (2005) investigated the relationship between insider trading, earnings quality and the cost of capital. They applied earnings quality as a proxy for information asymmetry and measured earnings quality by discretionary accruals (DA) using the modified Jones model (Dechow, Sloan & Sweeney 1995).

3.1.4 Audit committee (Principle 4) and earnings management

Principle 4, 'Safeguard integrity in financial reporting' is focused on audit committee characteristics, and the first Recommendation under this Principle suggests that 'the board should establish an audit committee' (ACGC 2007, p. 25). The influence of various characteristics of audit committees including the committee's existence, the independence of the committee directors, the presence of executive directors and individuals with financial expertise on the committee and the committee's meeting frequency and size, have been the subject of numerous prior studies. Klein (2002a) demonstrated a significant negative relationship between an independent member majority in audit committees and abnormal accruals. Benkel, Mather and Ramsay (2006) asserted that a higher portion of independent directors on audit committees yields diminutive levels of earnings management. Davidson, Goodwin-Stewart and Kent (2005) provided evidence of a negative association between the existence of an audit committee and a majority of non- executive director committee members on reducing earnings management.

3.1.5 Timely and balanced disclosure (Principle 5) and earnings management

Principle 5 focuses on disclosure quality and accountability: 'companies should promote timely and balanced disclosure of all material matters concerning the company' (ACGC 2007, p. 28). Two important aspects of disclosure considered in Principle 5 are 'timeliness' and the 'nature' of disclosure. The Principle states that the disclosures should ideally be factual, objective and consist of all material information, and that the information should eliminate the 'surprise' factor. In addition, the type of information, and who is in charge of deciding about the disclosures must be provided, and the monitoring of compliance are issues that must be considered in a companies' continuous disclosure policies. Prior research suggests that reducing information asymmetry is one of the potential benefits of disclosure (Lang & Lundholm 1996; Lobo & Zhou 2001). Jo and Kim (2007) support the notion that entities with extensive and frequent disclosure are less likely to engage in earnings management due to reducing information asymmetry and enhancing transparency. Dye (1988) introduces information asymmetry between managers and shareholders and between investors and prospective investors as two factors that generate earnings management. Similarly, Richardson (2000) showed a significant positive association between information asymmetry levels and earnings management. Hirst and Hopkins (1998) and Hunton, Libby and Mazza (2006) argue that detecting earnings management will be facilitated by providing more transparent disclosure that enhances financial analysts' judgments.

3.1.6 Rights of shareholders (Principle 6) and earnings management

Under Principle 6, enhancing and exercising the rights of shareholders is considered a good corporate governance practice. Principle 6 states: 'companies should respect the rights of shareholders and facilitate the effective exercise of those rights' (ACGC 2007, p. 31). In Principle 6, companies are encouraged to design a communication strategy that promotes

effective communication with shareholders and to promote participation at general meetings (ACGC 2007, p.30).

The association between the rights of shareholders and earnings management has been a controversial subject; with conflicting results emerging. Leuz, Nanda and Wysocki (1988) compare earnings management activities in 31 countries. They identify several country-level characteristics that they suggest, have reduced earnings management: a "developed equity market, dispersed ownership structure, strong investors' rights and legal enforcement". In contrast, Martin (2001; 2003) suggests that strong shareholder rights may result in greater earnings management as there are internal and external demands that lead to earnings management. Ding, Zhang and Zhang (2007), and Liu and Lu (2007) introduce conflicts of interest between minority shareholders and controlling shareholders as a leading cause of earnings management in China. Liu and Lu (2007) provide evidence supporting the role of good corporate governance on constraining agency conflicts between minority shareholders and controlling shareholders and eventually on mitigating earnings management.

3.1.7 Risk management (Principle 7) and earnings management
Principle 7 states that 'companies should establish a sound system of risk oversight and management and internal control' (ACGC 2007, p. 12). Opportunistic behaviour may influence risk-related decisions among managers, especially when the compensation that managers receive includes bonuses that are based on reported earnings. For instance Mayers and Smith (1982) suggested that managers may prefer to postpone expenditure, including that associated with insurance which is considered to decrease risk, until a time at which they may no longer be working with the company based on their contracts. The influence of internal audit as a component of a corporate governance structure which reduces earnings management is apparent in some studies (for example in Davidson, Goodwin-Stewart & Kent 2005). Further, disclosing risk management policies is expected to mitigate earnings management by improving transparency and decreasing information asymmetry.

3.1.8 Remuneration (Principle 8) and earnings management
Principle 8 states that 'companies should ensure that the level and composition of remuneration is sufficient and reasonable and that its relationship to performance is clear' (ACGC 2007, p. 35), and it contains a recommendation that a board establish a remuneration committee with responsibility for recruitment, termination policies, incentives and frameworks for superannuation arrangements (ACGC 2007). Bergstresser and Philippon (2006) suggest that some payment structures that are supposed to enhance company performance motivate managers to manipulate their earnings to increase their compensation. Their findings indicate that when manager remuneration is tied to share prices, the manager will engage in earnings management in an attempt to change the price of the company's stock. Main and Johnston (1993) define the primary task of remuneration committees as establishing payment policies based on corporate performance. However, they argue that compensation is higher when a remuneration committee is in place but that there is no effect on the incentive structure of pay. Klein (2002a) evinces the positive relationship between a CEO sitting on a remuneration committee and a higher level of earnings management.

3.2 Hypothesis Tested In This Study
Investigating the association between the extent of compliance with aggregate corporate governance principles and recommendations and earnings management leads to the development of the study's hypothesis.

Hypothesis 1 (H$_1$):   Companies with higher levels of aggregate compliance with the ACGC-PR will exhibit lower levels of discretionary accruals (DA).

4 DATA COLLECTION AND SAMPLING

To test the hypothesis for the study, stratified random sampling is conducted using all of the ASX listed companies except for financial companies and those that belong to industries with fewer than 10 firms. Consistent with prior research, firms in the financial sector were eliminated in this study since due to their nature (Bugshan 2005) and unique working capital structure (Davidson, Goodwin- Stewart & Kent 2005), it is difficult to estimate discretionary and non-discretionary accruals for firms in this sector (Klein 2002a). The requirement for eliminating industries with less than 10 firms was introduced in prior research by Peasnell, Pope and Young (2000) who claim that elimination of these industries is necessary to estimate the specific parameters of the non-discretionary accruals models for each industry-year.

The Bloomberg database is used to collect the financial data that are necessary to calculate the accruals. The primary population for this study is the 1,886 listed companies included in the Bloomberg database for 2009 and 2010. After financial companies and those in industries with fewer than 10 firms have been excluded, 1,619 companies in total remain in the population (refer to Table 1). This population of 1,619 listed companies is used to compute the coefficients of the modified Jones model using a cross-sectional approach, and to calculate discretionary and non-discretionary accruals (used as a proxy for earnings management). For the hypothesis testing, a sample of 107 companies and 214 firm-year observations is randomly selected. Table 2 displays descriptive statistics for the percentage of the compliance of the primary sample companies with each ACGC-PR. These percentages are based on the number of recommendations that are relevant to each principle and that the company complies with. The numbers are then converted into percentages based on the total number of recommendations within each principle.

Table 1: Summary of the sample by industry groups

Description	N
ASX-listed companies (24 industries)	1886
Eliminate: Companies in the financial industries (4 industries)	(262)
Eliminate: Industries with less than 10 companies (3 industries)	(5)
Population (17 industries)	1619
Final sample companies	107
Firm-year observations 2009–2010	214

Table 2: Descriptive statics for level of compliance with corporate governance principles

Corporate governance principle	2009[a]			2010[a]			Pooled 2009 and 2010[b]		
	Min%	Max%	Mean%	Min%	Max%	Mean%	Min%	Max%	Mean%
P1	0	100	95.9	0	100	95.2	0	100	95.6
P2	17	100	65.7	17	100	66.1	17	100	65.9
P3	67	100	99.2	67	100	98.9	67	100	99.1
P4	0	100	72.4	0	100	72.6	0	100	72.6
P5	50	100	99.0	50	100	98.6	50	100	98.8
P6	0	100	96.0	0	100	96.7	0	100	96.4
P7	25	100	93.8	25	100	95.2	25	100	94.5
P8	0	100	80.9	0	100	81.1	0	100	81.0
TOTCOM	40.7	100	84.4	40.7	100	84.6	40.7	100	84.5

a. N = 107 (2009), (2010); b. N = 214 (2009 & 2010).

5 RESULTS ANALYSIS AND DISCUSSION

Multiple regression models were used to test the research hypothesis that companies with higher levels of compliance with ACGC-PR will exhibit lower levels of discretionary accruals (earnings management). The independent variable is the level of compliance of each firm-year observation with 27 recommendations under the eight corporate governance principles. The dependent variable is the absolute value of discretionary accruals measured using the modified Jones model. Dechow, Sloan and Sweeney (1995) compared Jones, the modified Jones and the Industry models and concluded that the most powerful model for measuring discretionary accruals is the modified Jones model. This model has since been commonly used to calculate discretionary accruals (see for example Bowman & Navissi 2003, and Cohen, Dey & Lys 2008) and is adopted in this study as a measure to separate the discretionary portion of accruals from non-discretionary accruals. To find the discretionary accruals it is necessary to calculate total accruals and non-discretionary accruals. In the next two subsections the calculation of total accruals and non-discretionary accruals is explained.

5.1 Evaluation of Total Accruals

The balance sheet approach is commonly used to calculate total accruals (Bowman & Navissi 2003; Bugshan 2005; Davidson, Goodwin-Stewart & Kent 2005; Kothari, Leone & Wasley 2005). Table 3 provides the descriptive statistics for the variables that are required to calculate the total accruals using a balance sheet approach for the 2009-10 using the following model:

$TA_t = (\Delta CA_t - \Delta CASH_t - \Delta CL_t + \Delta STL_t - DEP_t)$

Where:

TA = Total accruals

ΔCA_t = Changes in current assets

$\Delta CASH_t$ = Changes in cash and cash equivalents

ΔCL_t = Changes in current liabilities

ΔSTL_t = Changes in the short-term portion of long-term liabilities

DEP_t = Amount of depreciation and amortisation

For 2008, 2009 and 2010 respectively, the average total assets are $492.3 million, $510 million and $530.8 million (Table 3). For the 1,619 companies in the population, the average cash and cash equivalents for 2008, 2009 and 2010 are $31.4 million, $46.8 million and $50.1 million, respectively.

Table 3: Descriptive statistics—total accruals

	Mean*	Minimum*	Maximum*	Median*	Std. deviation*
A8 (2008)	492.289	.003	89616	18.512	3624.95
A9 (2009)	510.008	.000	97236	16.921	3814.23
A10 (2010)	530.759	.000	112402	18.975	4167.63
CA8	128.554	.000	21680	7.341	868.21
CA9	131.386	.000	22486	5.253	918.27
CA10	134.447	.000	25134	6.061	994.00
CASH8	31.420	–.014	4237	3.595	180.69
CASH9	46.828	–.000	10833	2.695	363.35
CASH10	50.092	–2.450	12456	3.117	448.64
CL8	109.666	.000	22100	1.740	857.68
CL9	94.920	.000	11850	1.643	584.34
CL10	91.231	.000	13042	1.972	621.92
Δ STL9	–8.992	-9187	2955	.000	284.95
Δ STL10	–4.354	-2936	1333	.000	153.38
DEP9	19.683	.000	4390	.143	185.50
DEP10	20.039	.000	4732	.133	196.45
TA9	–24.356	–7381	1558	–.194	258.85
TA10	–21.838	–7381	636	–.179	266.82

* $m., before applying outlier tests

$TA_t = (\Delta CA_t - \Delta CASH_t - \Delta CL_t + \Delta STL_t - DEP_t)$

5.2 Evaluation of Non-discretionary Accruals

To calculate non-discretionary accruals using the modified Jones regression model (below formula), the industry year-specific parameters are needed. There are two methods to compute the industry year-specific parameters: the time-series and cross-sectional approaches (Benkel, Mather & Ramsay 2006; Bugshan 2005; Davidson, Goodwin-Stewart & Kent 2005; Dechow, P.M., Sloan & Sweeney 1995; Dey 2005; Koh 2003; Scott 1997). The time-series approach uses firm-specific parameters instead of industry-specific parameters and assumes that firm-specific parameters do not vary over time (Bowman & Navissi 2003; Bugshan 2005). This approach uses a lower number of observations and generates a smaller sample compared with the cross-sectional approach (Subramanyam, 1996). Under the more generally used cross-sectional approach, industry-time specific parameters are estimated assuming that these coefficients are the same for firms in the same industry-year (ACGC 2007; Bugshan 2005; Jensen & Meckling 1976; Peasnell, Pope & Young 2000; Stolowy & Breton 2004).

Using a cross-sectional approach, the first regression of a modified Jones model is run separately for each industry-year to estimate the mentioned parameters (Watts & Zimmerman 1990).

Modified Jones Model

$TA_t / A_{t-1} = \alpha_1 (1 / A_{t-1}) + \alpha_2 (\Delta REV_t / A_{t-1}) + \alpha_3 (PPE_t / A_{t-1}) + e_t$

Where:

TA   = Total accruals
A   = Total assets
ΔREV = Changes in revenue
PPE   = Gross property, plants and equipment

Total accruals presented in Table 3 were applied in the modified Jones model to calculate the industry-year specific parameters. Tables 4 and 5 provide a summary of the descriptive statistics for the industry-year specific parameters that are estimated using a modified Jones model. The positive mean of α_2 and the negative mean of α_3 obtained for both 2009 and 2010 are consistent with the results of prior research and confirm the usefulness of the modified Jones model in categorising total accruals into discretionary and non-discretionary accruals. The average R^2 values for the 17 industries are 0.35 and 0.29 for the years 2009 and 2010 respectively.

Table 4: Descriptive statistics for estimating specific coefficients for 2009 using the modified Jones model

	Mean	Minimum	Maximum	Median	Std. deviation
R^2	0.353	0.018	0.830	0.252	0.272
α_1	13865.72	−689443.00	1583978.65	−16869.86	497592.10
α_2	0.094	−0.106	0.465	0.057	0.158
α_3	−0.086	−0.352	0.129	−0.065	0.126

Table 5: Descriptive statistics for estimating specific coefficients for 2010 using the Modified Jones model

	Mean	Minimum	Maximum	Median	Std. deviation
R^2	0.291	0.030	0.820	. 1930	0.234
α_1	−32795.81	−795343.53	692283.09	10341.91	381901.00
α_2	0.004	−0.420	0.330	0.023	0.186
α_3	−0.019	−0.190	0.270	-0.031	0.130

After estimating specific industry-year parameters, those parameters were applied to calculate the non-discretionary proportion of total accruals for each firm-year using the following formula:

$NDA_t = \alpha_1 (1 / A_{t-1}) + \alpha_2 [\Delta REV_t - \Delta REC_t) / A_{t-1}] + \alpha_3 (PPE_t / A_{t-1})$,

Where:

NDA   = Non-discretionary accruals
A   = Total assets
ΔREV = Changes in revenue
ΔREC = Changes in net receivables
PPE   = Gross property, plants and equipment

The final stage in applying the modified Jones model was to calculate the discretionary accruals by deducting the non-discretionary accruals from total accruals using the following formula:

$DA_t = TA_t / A_{t-1} - NDA_t$

Where:

DA   = Discretionary accruals
TA   = Total accruals

Table 6: Descriptive statistics for calculating discretionary accruals*

	Minimum	Maximum	Mean	Median	Std. deviation
TA_9 / A_{t-1}	−5.55	138.33	0.09	−0.02	3.92
TA_{10} / A_{t-1}	−38.57	106.03	0.02	−0.02	3.36
NDA_9	−1.02	0.78	−0.02	−0.01	0.10
NDA_{10}	−2.17	3.51	0.10	0.00	0.48
DA_9	−5.64	1.72	−0.04	−0.02	0.28
DA_{10}	−3.64	2.32	−0.12	−0.03	0.51
$absDA_9$	0.00	5.64	0.12	0.07	0.26
$absDA_{10}$	0.00	3.64	0.25	0.09	0.46

N = 1619
*Before applying outlier tests

5.3 Independent Variable –Compliance with the ACGC-PR

The aggregate compliance with ACGC-PR was calculated by counting the number of recommendations a company followed out of the 27 available and converting the count into a percentage. The regression model developed to test the hypothesis is as follows:

$DA_j = \gamma_0 + TOTCOM_t + \gamma_8 SIZE_{jt} + LEV_{jt} + ABSNIBE_{jt} + PBR_{jt} + ABSCH_{jt} + \varepsilon_j$

Where:

DA   = Absolute value of discretionary accruals
TOTCOM   = Total compliance with Australian corporate governance principles and
                    recommendations (Percentage)
SIZE   = Log of total assets
LEV   = Leverage, ratio of total liabilities to total assets
ABSNIBE   = Absolute value of net income
PBR   = Price to book ratio of equity
ABSCH   = Absolute changes in income

The selection of control variables model included in the model is informed by a review of relevant literature. In testing the association between discretionary accruals and corporate governance factors Davidson, Goodwin-Stewart and Kent (2005) **e**xamine seven control variables: (1) size (log of total assets); (2) leverage (i.e., total liabilities divided by total assets); (3) equity ratios; (4) the absolute value of net income (a proxy for absolute net income before extraordinary items are divided by the total assets); (5) absolute changes in net income (a proxy for the absolute changes in income deflated by the total assets); (6) extreme performance (performance as measured by the net income divided by the total assets); and, (7) the proportion of shares held by the largest shareholders. They were unable to identify significant relationships between the absolute value of discretionary accruals and either extreme performance or the proportion of shares held by the largest shareholders. However, they provide evidence that the other control variables are significantly associated with the

absolute value of discretionary accruals. All of the statistically significant control variables mentioned in Davidson et al. (2005) are adopted in the current study.

Table 7 provides descriptive statistics for the regression model that investigated the effect of the level of compliance of the study sample of companies with ACGC-PR on the level of discretionary accruals. The model controls for the effect of five control variables. Descriptive statistics are provided for one dependent variable (discretionary accruals), one independent variable (compliance with ACGC-PR) and five control variables (size, leverage, the absolute value of net income, the price to book ratio of equity, and the absolute change in income). The minimum and maximum absolute values of the discretionary accruals for the sample companies are .00 and 0.44, respectively. The minimum rate of compliance in this study is 40.74%, and the maximum and mean are 100% and 85.29%, respectively. In Table 8, the Pearson correlation matrix for the dependent and independent variables is presented. The results demonstrate a positive and significant correlation between size and the level of compliance.

Table 7: Descriptive statistics

	Minimum	Maximum	Mean	Std. deviation
absDA	0.00	0.44	0.09	0.09
TOTCOM%[*]	40.74	100.00	85.29	11.87
LEV	0.00	1.21	0.249	0.24
SIZE	5.62	9.87	7.49	0.78
ABSNIBE	0.00	1.29	0.22	0.27
ABSCH	0.00	1.82	0.18	0.27
PBR	-3.66	10.36	1.88	1.82

* TOTCOM is the aggregate compliance with the CGPR.

Table 8: Pearson correlation matrix between the independent variables

N = 182		TOTCOM	SIZE	LEV	ABSNIBE	ABSCH	PBR
TOTCOM	Pearson	1					
	Sig.						
SIZE	Pearson	.532**	1				
	Sig.	.000					
LEV	Pearson	.338**	.344**	1			
	Sig.	.000	.000				
ABSNIBE	Pearson	−.237**	−.467**	.027	1		
	Sig.	.001	.000	.715			
ABSCH	Pearson	−.126	−.315**	.057	.375**	1	
	Sig.	.089	.000	.446	.000		
PBR	Pearson	.086	-.079	.085	.382**	.152*	1
	Sig.	.247	.286	.253	.000	.041	

** Correlation is significant at the 0.01 level (two-tailed)

* Correlation is significant at the 0.05 level (two-tailed).

In Table 9 the regression results are reported. Overall, the model is significant (F = 11.115, p<.01) and explains 27.6% of the variance in the dependent variable, DA (R^2 =.276). The explanatory level of variation generated by the model is consistent with prior studies (see Davidson, Goodwin-Stewart & Kent 2005). The coefficient for total compliance is significantly negative (-.001, p< .05). Therefore, the hypothesis is supported. The coefficient for size (proxied by the log of total assets) is also negative and significant (-.024, p <.05), which is consistent with prior research. Finally, the coefficient for leverage is positive and significant (0.169, p< .001).

Table 9: Multiple regression results and coefficients

$DA_j = \gamma_0 + \gamma_1 TOTCOM_{jt} + \gamma_2 SIZE_{jt} + \gamma_3 LEV_{jt} + \gamma_4 ABSNIBE_{jt} + \gamma_5 ABSCH_{jt} + \gamma_6 PBR + \varepsilon_j$

	Unstandardised co-efficients		Standardised co-efficients	t-stat	p-value
	B	Std. error	Beta		
Constant	.318	.078		4.060	.000
Governance variable:					
TOTCOM	−.001	.001	−.163	−2.076	.039
Control variables:					
LEV	.169	.029	.426	5.916	.000
SIZE	−.024	.011	−.198	−2.230	.027
ABSNIBE	−.061	.029	−.175	−2.134	.034
ABSCH	.074	.025	.210	2.984	.003
PBR	.012	.004	.228	3.185	.002
R^2	.276				
F statistics	11.115				
p-value	.000				

6 CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

This study used a quantitative analysis approach and hypothesised that higher levels of compliance with corporate governance principles and recommendations, would be associated with lower levels of discretionary accruals. The modified Jones model was adopted as a measure to estimate discretionary accruals. Data relating to compliance with ACCG-PR were collected directly from corporate governance statements within the annual financial reports of sample companies. Other financial data were collected from an external secondary source (the Bloomberg database). Although compliance with the ACGC-PR are not mandatory, Australian listed companies are required to prepare corporate governance statements disclosing the extent of their compliance and to explain the circumstances underpinning their decisions not to follow the ACGC-PR.

The study hypothesis is supported by the data, that is, higher levels of compliance with ACGC-PR are associated with lower levels of earnings management. The five control variables that are tested in the current study are size, leverage, the absolute value of net income before extraordinary items, the price to book ratio of equity and the absolute changes in income. Findings demonstrate that all control variables are significantly associated with the levels of discretionary accruals. The results reveal that larger companies exhibit higher

levels of compliance with ACGC-PR and will exhibit lower levels of discretionary accruals. Leverage is also positively associated with the level of discretionary accruals.

In this study, discretionary accruals is measured using a modified Jones model and a cross-sectional approach is used. The implications of other models for the measurement of discretionary accruals are beyond the scope of this study. Some of the requirements of Australian corporate governance are already embedded in the listing rules of the ASX and it would be useful to control the influence of such requirements on earnings management in future studies. One of the aims of good corporate governance is to mitigate residual losses, thus future studies examining factors that create residual losses and investigating how corporate governance structures can mitigate those factors would also be useful.

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