

**Audit committee effectiveness in a mandatory
disclosure environment**

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Abstract:

This study examines audit committee effectiveness in its association with regulatory compliance in a highly sanctioned environment. It uses the Australian continuous disclosure regime to investigate whether audit committee effectiveness is associated with a higher frequency of disclosures, thereby enhancing the efficiency of the capital market and creating more informed individual investors. The findings show that, as hypothesised, audit committee effectiveness measured as an index composed of sub-components involving audit committee size, meeting frequency, independence, member financial literacy and membership of other audit committees, is positively associated with disclosure frequency. Further tests show that it is the financial literacy sub component which is most implicated in this relationship. Company size, years of listing, the proportion of inventories and receivables to total assets, whether or not the company has been involved in a takeover offer or bid or in changes to its number of shares are significant control variables.

Keywords: corporate governance; board of directors; audit committees; continuous disclosure.

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1. Introduction

The aim of this paper is to investigate the links between firms' price sensitive disclosures and governance strength. We know that better governed firms release more price sensitive information: Brown and Beekes, 2006. Specifically, we examine the disclosure history of Australian firms over time and the link between a firm's price sensitive market disclosures and one important measure of governance strength: audit committee effectiveness. It is accepted that the audit committee's main function is to manage, inter alia, the firm's financial reporting, internal control systems and risk management systems (AICD, 2011). Regulatory compliance issues are part of a firm's internal controls (ASA 315, 2009) and hence we argue a positive relationship will exist between audit committee effectiveness and compliance with a requirement to disclose price sensitive information to the capital market. The research question posed is: is the audit committee, one of the corporate governance mechanisms of the firm, associated with a firm's market disclosure policy?

This paper is motivated by several factors: first, in 2004, the Australian corporate regulator, the Australian Securities and Investments Commission (ASIC), benefitted from enhanced enforcement powers of the mandatory market disclosure regime (referred to herein as 'continuous disclosure'). Continuous disclosure in Australia is very different from that in most other jurisdictions – predominantly because Australia's listing rule requirement to continuously disclose price sensitive information to the market is backed by statutory

sanctions – hence considered mandatory (Cassidy and Chapple, 2003). Second, several studies during the past decade compare and critique ASIC’s enforcement of continuous disclosure before and after this legislative change (eg Welsh, 2007, Chan, Faff, Ho and Ramsay, 2007; Hsu, 2009) and this study seeks to complement that literature. Third, no previous study examines the relationship between the audit committee and management disclosure stance in a mandatory disclosure environment of similar complexity, with Karamanou and Vafeas (2005) examining it in a voluntary disclosure environment and Ettredge, Johnstone, Stone and Wang (2011) examining it in a mandatory but non-ambiguous/judgemental environment (notification of a change of auditor in the U.S.). It is important to examine the issue within a mandatory disclosure, highly judgemental and ambiguous environment, where arguably the risk of enforcement, litigation or loss of reputation is higher. Fourth, Cohen, Krishnamoorthy and Wright (2004:110) in a widely cited review of the corporate governance ‘mosaic’ call for research into the impact of audit committees on disclosure.

Accordingly, this paper is structured as follows. Part 2 sets out the background to the continuous disclosure regime, commenting on both the market and statutory requirements and sanctions. In this section, firms’ disclosure policy and record is shown to be a particular regulatory risk to be managed by the board. In explaining the literature and hypotheses, Part 3 examines the theory and prior literature on the link between disclosure and corporate governance. In this section we link disclosure record at the firm level to the audit committee in particular as a governance mechanism that affects and controls the firm’s disclosure policy. Part 4 explains the method used to test the

hypotheses and Part 5 concludes, with a discussion of the implications, limitations and ideas for future research.

2. Background

Continuous disclosure and market sanctions

Firms with listed securities are generally required by market rules to keep the market informed as to price sensitive disclosures. Listing rule 3.1 of the Australian Securities Exchange (ASX) requires firms with listed securities to immediately (upon becoming aware) of the information disclose any information that can be "reasonably expected to materially affect the price or value" of the securities. There are exceptions, such as confidential information or incomplete information.

The Australian capital market provides a unique environment in which to examine firms' compliance, as the market rules are backed by statutory sanctions, enforced by the public regulator (ASIC). The ASX and ASIC have signed a Memorandum of Understanding,¹ which confirms that the ASX has primary responsibility for monitoring and enforcing the listing rules, whilst ASIC enforces the law (as described in the next section). The firm must not disclose price sensitive information to anyone other than the ASX, and must wait for the ASX to acknowledge receipt of the announcement.² As part of the ASX surveillance role, the ASX also monitors for non-disclosures. Prior to 1 August 2010, the conduct of market participants on the ASX was governed by the former ASX Market Rules.³ As this constitutes the sample period for this study, the former ASX Market Rules are those referred to. Market rule 28.1.1 authorised the ASX to investigate the activities of a market participant in relation to compliance, and had the power to require a market participant to provide any information known to the market

participant. These communications are colloquially known as “please explain” letters. The ASX conducts surveillance electronically, detecting unusual trading patterns and can use this surveillance to require the company to supply further information. (Rydge and Comerton-Forde, 2004; Gong, 2007)

There have been several studies on the efficacy of the ASX queries, particularly in examining the market impact or informativeness of the firms’ responses to request for information (see, for instance, Gong (2007) and Marsden and Poskitt (2009)). However, in this study we use ASX price queries as an indicator variable to proxy for a firm’s disclosure record. Our conjecture is that firms’ compliance may be related to their prior experience and exposure to the market regulator’s requests for information. Hence, this indicator variable measures whether the sample firm had any prior price queries issued by the regulator.

Continuous disclosure and statutory sanctions

Importantly, since 1994, the continuous disclosure market obligation has experienced a parallel statutory obligation. In an early study of the effectiveness of statutory backed continuous disclosure, Brown Taylor and Walter (1999) examined the frequency of price sensitive disclosure before and after the then new laws. They found, inter alia, increased frequency of disclosure for smaller firms in particular in the post- legislation period. In 2004, the law significantly changed the liability and enforcement regime for continuous disclosure breaches by, inter alia, including personal liability for company directors, and enhancing the regulator’s administrative powers in enforcing the law. Accordingly, this study examines continuous disclosure behaviour after 2004.

In a similar statutory sanction disclosure regime (New Zealand), Dunstan, Gallery and Truong (2011) find that the introduction of a public enforcement system has a positive impact on firms' disclosure behaviour, even in the absence of a strong record of actual regulatory enforcement. Their finding indicates that a public enforcement regime results in 'good' disclosure outcomes in circumstances where there is a low litigation environment.

Literature & hypotheses

Continuous disclosure and corporate governance

The ASX 'Principles of Good Corporate Governance and Best Practice Recommendations' suggest that good corporate governance embraces the principle of timely and balanced disclosure of all material matters concerning the company (Principle 5). Compliance with the continuous disclosure statutory laws as outlined above has two dimensions – the information has to be considered “price sensitive”, and the disclosure must be “timely”. Particularly in relation to the timeliness aspect, it has been shown that interpretation by managers provides considerable scope for discretionary judgment (Hsu, 2009). Further, even though Dunstan et al, (2011) find evidence to support improved compliance with mandatory disclosure with the introduction of the then new law, they did not find that the dimension of timeliness improved.

The ASX corporate governance guidelines recommend that disclosure be provided in a balanced way. It has been shown that better governed firms make better and balanced disclosures (Beekes and Brown 2006). Beekes and Brown (2006) examine the link between Australian firms' corporate governance quality and the informativeness of their market disclosures. They conclude that better governed firms make timelier and more 'balanced' disclosures of both good and

bad news. Seamer and Psaros (2009) also show that a firm's corporate governance profile impacts on its continuous disclosure performance. Given that these studies are consistent with the link made by the ASX corporate governance guidelines between governance and disclosure policies, we expect that firms that have an observable governance strength, observed through the effectiveness of their audit committees, will have a better record of compliance than firms with less effective or no audit committees.

The role of audit committees

ASA 315 Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment (para 4c) defines internal control as "the process designed, implemented and maintained by those charged with governance, management and other personnel to provide reasonable assurance about the achievement of an entity's objectives with regard to reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations. The term "controls" refers to any aspects of one or more of the components of internal control" (emphasis added). The explanatory material in ASA 315 explains that: "Internal control is designed, implemented and maintained to address identified business risks that threaten the achievement of any of the entity's objectives that concern the reliability of the entity's financial reporting, the effectiveness and efficiency of its operations; and its compliance with applicable laws and regulations. The way in which internal control is designed, implemented and maintained varies with an entity's size and complexity" (ASA 315.A44, 2009).

Audit committees are generally considered to play three important roles: safeguarding the integrity of financial reporting, oversight of external auditors, and oversight of internal controls (e.g. Kalbers and Fogarty 1993). One of the most important roles of the audit committee is its oversight of the implementation of appropriate internal controls. For listed firms, this can be expected to include compliance with listing rules that is crucial to maintenance of listed status and hence to protection of shareholders' interests through maintenance of their ability to trade the firms' shares and the firm's ability to raise further equity capital. Breaches of the continuous disclosure listing rule bring as well political risks in terms of damaging publicity and harm to the corporate reputation and the reputations of directors and officers responsible for signing off on compliance.

McMullen (1996) reports that the presence of an audit committee is associated with fewer shareholder lawsuits, fewer quarterly earnings restatements, fewer regulatory enforcement actions, fewer illegal acts and fewer instances of auditor turnover when there is an accounting dispute. In terms of regulatory actions, Dechow, Sloan and Sweeney (1996) report that firms without audit committees are more likely than those with such committees to feature amongst Accounting and Auditing Enforcement Releases (AAERs) issued by the Securities and Exchange Commission (SEC). Wild (1996) reports 20 per cent greater share market reaction for earnings reports after audit committee formation compared with prior. These studies are consistent with enhanced shareholder wealth accruing to shareholders of firms with audit committees compared to those without.

In Australia ASX Listing Rule 12.7 was released in March 2003 with retrospective application to January 2003, and required companies within the S&P/ASX All Ordinaries Index to have an audit committee. Further, these companies were to comply with the best practice recommendations set by the ASX Corporate Governance Council (*ASX Corporate Governance Guidelines*, March, 2003). Recommendation 4.3 of the *ASX Corporate Governance Guidelines* (March, 2003) dealt with the composition, operation and responsibility of the audit committee. ASX Listing Rule 12.7 was amended in May 2004, so that only the Top 300 of the S&P/ASX All Ordinaries Index was required to comply with the best practice recommendations.

Academic research has reported many findings however that question the mere existence of an audit committee as an effective mechanism of corporate governance and highlight the importance of investigating the audit committee's effectiveness.

Audit committee presence and effectiveness

The positive effects of effective rather than ineffective audit committees have been reported in many studies. For instance, Abbott and Parker (2000) report that audit committees that are both independent and active are positive associated with selection of an auditor industry specialist and hence higher quality audit. Abbott, Parker, Peters and Raghunandan (2003a) using U.S. data found audit committee independence and expertise were significantly and positively associated with audit fees, again interpreted in the context of heightened audit quality. Zaman, Hudaib and Haniffa (2011) using UK data report a similar result. Another study by the same authors (Abbott et al. 2003b)

found independent and active audit committees were associated with significantly lower nonaudit to audit fee ratios, again often used as a measure of audit quality. Carcello and Neal (2000) reported a lower probability of going concern opinion issuance for audit committees with higher percentages of affiliated directors on the audit committee. A subsequent study by the same authors (Carcello and Neal 2003) found that the higher the percentage of affiliated directors and share ownership of audit committee members, the more likely it was that the auditor would be dismissed subsequent to receipt of a going concern opinion.

DeZoort (1998) in an experiment found that audit committee members with more experience in auditing and internal control evaluations were more likely to make control evaluations in line with auditors. DeZoort and Salterio (2001) found more independent audit committees with audit knowledge provided greater support the auditor in an accounting dispute situation.

A link between audit committees and the likelihood of fraud has not been found (Beasley 1996) however in fraud companies, Beasley, Carcello, Hermanson and Lapedes (2000) found a higher proportion of less independent audit committees (and boards). Abbott, Park and Parker (2000) find audit committee independence and activity is associated with a lower incidence of AAERs and Abbott, Parker and Peters (2001) find the same for financial report misstatements. Several studies have found a negative relationship between audit committee independence and abnormal accruals (Klein 2002b). Persons (2009) reports that firms which make earlier voluntary ethics disclosures were likely to

have a larger and more independent audit committee that met more often, and were less likely to engage in fraudulent financial reporting.

The preceding review of the literature, which alludes to how audit committee effectiveness has been measured in prior literature, leads to the following hypotheses regarding the association between disclosure and audit committee effectiveness, in the context of constraining risk associated with mandatory disclosure in a highly judgemental and ambiguous environment:

H1: There is a positive relationship between the ACE (Audit committee effectiveness) and the frequency of continuous disclosures (CD).

As audit committee effectiveness is proposed as a composite measure, we further test the individual attributes of ACE, such as independence, expertise, meeting frequency, size and busyness, as variables of interest:

H1a : there is a positive relationship between audit committee independence (ACI) and the frequency of continuous disclosure (CD).

H1b : there is a positive relationship between audit committee expertise (ACX) and the frequency of continuous disclosure (CD).

H1c : there is a positive relationship between audit committee meetings (ACM) and the frequency of continuous disclosure (CD).

H1d : there is a positive relationship between audit committee size (ACS) and the frequency of continuous disclosure (CD).

H1e : there is a negative relationship between audit committee busyness (ACB) and the frequency of continuous disclosure (CD).

The hypotheses reflect measures of audit committee effectiveness based on Zaman, Hudaib and Haniffa (2011) – independence, expertise, frequency of meeting, and number of members – to which we add an additional measure – audit committee busyness. There is increasing evidence that busy directors who hold multiple board seats exhibit a higher tendency to be absent from board meetings (Jiraporn, Davidson, Da Dalt and Ning 2009) and tend to be represented on board committees less frequently (Jiraporn, Singh and Lee 2009). Beasley (1996) finds that outside directors of fraud firms have a higher number of additional directorships than those of no-fraud firms. Persons (2005) finds that independent audit committee members of fraud firms have a higher number of additional directorships than those of no-fraud firms. However, Persons (2006) finds that audit committee busyness is not associated with voluntary ethics disclosures.

Sample data

Sample firms were obtained from those listed on the ASX from 2004 to 2007. Starting with a sample of the top 200 Australian listed companies, we collect data regarding audit committee and board memberships and chairs from the Connect 4 Boardroom database. We restrict our sample to June year ends to ensure similar macroeconomic conditions affecting continuous disclosures and use the Morning Star FinAnalysis database to collect our financial data. The sample available for selection was reduced by firms in the Financials Industry because the disclosure determinants for firms in this industry may differ from those in other industries. Other reductions occurred for missing information related to

corporate governance, and firms with missing and insufficient financial data, resulting in 355 firm-year observations after winsorising the top and bottom 1 per cent of frequency counts for the Disclosure dependent variable. Table 1 shows the selection of the sample. The frequency of disclosures for each company in the sample was hand-collected by fiscal year from the Morning Star electronic ASX Announcements database located in DatAnalysis.

TABLE 1 ABOUT HERE

3. Method/model

The hypotheses were tested using OLS regression. The model is adapted from that used by Ettredge et al⁴ (2011). In addition to corporate governance variables, the model controls for company financial characteristics as well as for commonly occurring events necessitating continuous disclosure, such as an ASX query, takeover offers or bids, seasoned equity offerings and company administrative matters such as resignation of directors. The final model takes the following form:

$$\text{Disclosure} = \beta_0 + \beta_1 \text{ACE}_{it} + \beta_2 \text{OUTDIR}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{ROA}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{PLIST}_{it} + \beta_7 \text{INVREC}_{it} + \beta_8 \text{D_Takeover}_{it} + \beta_9 \text{D_IssuedCapital}_{it} + \beta_{10} \text{D_CompAdmin}_{it} + \beta_{11} \text{D_ASXQuery}_{it} + \beta_{12-15} \text{YD}_{it} + \beta_{16-22} \text{INDUSTRY}_{it} + \epsilon_{it}$$

Where for company *i* at time *t*:

The dependent variable is:

Disclosure = frequency of continuous disclosures (i.e. market sensitive disclosure) by firm *i* at year *t*⁵.

In prior research, disclosure level has been operationalised as management forecasts., Additionally, AIMR (Association for investment Management and Research) ratings have been used in several studies (Lang and Lundhold 1993,

1996; Sengupta 1998; Healy et al 1999), and self-constructed (Forker 1991; Singhvi and Desai 1971; Chow and Wong-Boren 1987; Eng and Mak 2003; Chua and Gray 2002) scoring instruments based on periodic reports and constructed by a researcher, permitting development of context-sensitive measures of disclosure level, have been used. We use the incidence or frequency of continuous disclosures (i.e. price sensitive disclosures) as the dependent variable because continuous disclosures inform investors and assist them in comprehending the economic situation and underlying reality of the corporations in which they invest. Most corporate officers see annual reports as their primary communication channel and an important vehicle for communicating information to shareholders. However, periodic reports are presented on an annual, semi-annual and, for some industries, quarterly basis, whereas with continuous disclosure, material information is disclosed on the day of occurrence of the event or transaction or within one day after occurrence.

The explanatory or hypothesis variables are measured as follows:

ACE_{it} = Audit Committee Effectiveness index. An audit committee is effective when $[(ACI_{it} = 1) + (ACX_{it} = 1) + (ACM_{it} \geq 3 = 1) + (ACS_{it} \geq 3 = 1) + (ACB_{it} = 1)]$, based on an extended version of the method used by Zaman et al 2011). This is a dichotomous variable equal to 1 when (i) all audit committee are non executive directors, (ii) the audit committee includes a member with accounting, business and financial expertise, (iii) audit committee members meet at least three times a year, (iv) audit committee is comprised of at least three members, and (v) the audit committee includes a member who is also on another board of another company.

ACI_{it} = a dummy variable that takes a value of 1 if all AC members are non-executive directors; 0, otherwise;

$ACXit$ = a dummy variable that takes a value of 1 if the audit committee includes a member with accounting, business and financial expertise; 0, otherwise;
 $ACMit$ = frequency of audit committee meetings held during the financial year;
 $ACSit$ = size of audit committee;
 $ACBit$ = a dummy variable that takes a value of 1 if the audit committee includes a member who is also on another board of another company; 0, otherwise;
 $OUTDIRit$ = the proportion of independent directors on the board;

The control variables are measured as follows:

$SIZEit$ = natural logarithm of market capitalisation;
 $ROAit$ = return on assets;
 $LEVit$ = ratio of total liabilities to total assets;
 $PLISTit$ = the number of years since original listing;
 $INVRECit$ = the proportion of total assets in inventories and receivables;
 $D_TakeOverit^6$ = indicator variable that takes the value 1 if the company is subject to a takeover offer or bid indicated by the events/documents noted in the footnote during the fiscal year, 0 otherwise;
 $D_IssuedCapitalit^7$ = indicator variable that takes the value 1 if the company's number of issued shares changed during the fiscal year for any of the reasons explained in the footnote, 0 otherwise;
 $D_CompAdminit^8$ = indicator variable that takes the value 1 if the company disclosed routine administrative announcements as explained in the footnote during the fiscal year, 0 otherwise;
 $D_ASXQueryit^9$ = indicator variable that takes the value 1 if the company received an ASX Query during the period, 0 otherwise;
 $YDit$ = year dummy variables that take a value of 1 if firm i in year t ; 0, otherwise;
 $INDUSTRYit$ = industry dummy variables that take a value of 1 if firm i is in a specific industry; 0, otherwise;
 ε = error term.

To isolate the effects of the audit committee effectiveness on continuous disclosures, we control for several factors such as member financial literacy and

the level of committee activity, that have been shown to influence audit committee effectiveness and continuous disclosure in previous studies as discussed in the previous section.

We also control for several financial characteristics likely to influence the dependent variable or other independent variables. These variables include: firm size *i.e.*, the log of total assets. This measure is used in a number of disclosure studies (Singhvi and Desai 1971, Cooke 1989). Large firms are expected to voluntarily disclose more information than smaller firms to reduce the information asymmetry problem that emerges as entities get bigger. Profitability, *i.e.*, the ratio of profit to assets (Singhvi and Desai 1971, Eng and Mak 2003). Companies that are performing well are more likely to voluntarily disclose information. Leverage, *i.e.*, the ratio of total liabilities to total assets (Bradbury 1992). A positive relation is expected, as firms with more debt are likely to disclose more information to minimise legal risk. Listing age, *i.e.*, the number of years since the original listing (Choi 1973, Owusu-Ansah 1998). Companies that are newly listed on a capital market may want to raise additional capital at the lowest cost compared with mature companies that may rely more on internal funds.

Additionally, Menon and Williams (1994) found that audit committee activity was significantly related to firm size and the proportion of outside directors on the board. Klein (2002) found similarly but also found a negative association with growth opportunities, consecutive losses, the presence of a large block holder on the audit committee and firm size. Collier and Gregory (1999) found Big N auditor and leverage were positively related to audit committee activity and duality of board/CEO was associated with reduced audit committee activity.

Beasley and Salterio (2001) found that audit committees higher on independence and knowledge were associated with stronger boards of directors.

We also include dummies for the existence of disclosures about events that provoke frequent disclosures. In this category is included indicator variables for disclosure about takeover information, disclosure about equity issues or buybacks, routine or common disclosures dealing with the administration of the company, and ASX queries. Year effects are included because macroeconomic conditions are not constant across all years and may influence the number of disclosures made. Industry dummy effects are included because the propensity to make continuous announcements may vary across industries.

4. Results

The descriptive statistics for the variables in the model are reported in Table 2.

TABLE 2 ABOUT HERE

The mean frequency of disclosures is 18.1 per year, with a range of between 1 and 178. With a potential maximum audit committee effectiveness score of 1, the mean score is only 0.41, with a range between 0 and 1. Only 59 per cent of the sample have audit committees composed fully of independent directors. In terms of expertise, 85 per cent of audit committees have at least one member who is financially literate, 87 per cent of audit committees meet three or more times per year, 94 per cent are comprised of at least three members and 90 per cent are members of at least one other audit committee.

Table 3 presents the results of the analysis of the Pearson correlations between the variables used in the regression analyses. The audit committee effectiveness variables exhibit a positive relation with the level of disclosure. The analysis indicates that companies with a higher proportion of audit committee independence (ACI), negatively associated with the audit committee size (ACS) are significantly and positively correlated with the level of continuous disclosure (CD). This is consistent with the hypothesis that audit committee effectiveness provides superior monitoring of the disclosure process, leading to the disclosure of more information.

TABLE 3 ABOUT HERE

Our primary interest lies in the coefficient estimate on audit committee effectiveness (β_1) and independent outside directors (β_2). The results of the tests of Hypotheses (continuous disclosure) are reported in Tables 4 and 5. Significant, positive estimates would be consistent with the hypothesis that higher audit committee effectiveness (ACE) in Table 3 and its subcomponents (ACI, ACX, ACM, ACS and ACB) in Table 4 are associated with a higher frequency of continuous disclosure. In Table 3, ACE is significant ($p < 0.05$) and so H1 is supported. The proportion of independent directors (OUTDIR) is not associated with the level of continuous disclosure. In terms of the control variables, firm size is positive and significant ($p < 0.05$), indicating that larger firms tend to disclose more corporate information under the continuous disclosure regime. The proportion of inventory and receivables is positive and significant ($p < 0.01$). The listing age variable is positive and significant ($p < 0.01$), as expected. The disclosures surrounding takeover activity ($p < 0.05$) and issued capital activity ($p < 0.05$) are positively associated with the level of continuous disclosure as expected. Return on assets, leverage, and the dummies for ASX Query and CompAdmin are not significant. The model is significant with an adjusted R^2 of 41 per cent. The

variance inflation factors do not exceed 2.15 and so multicollinearity is not at problematic levels. The Energy and Industrials (GICS) indicator variables are positive and significant ($p < 0.05$). No year variables were significant.

TABLE 4 ABOUT HERE

Table 5 reports the results of regressions where the components of audit committee effectiveness are entered separately one at a time. Having at least one audit committee member who is financially literate (Panel 2) is the only component which is significant. Substantive results for other variables remain the same.

TABLE 5 ABOUT HERE

5. Conclusion, limitations and future research

This study examines the relationship between audit committee effectiveness attributes and corporate disclosure behaviour. Although the disclosure literature is relatively well developed, no previous study has examined the relationship between audit committee effectiveness mechanisms and corporate disclosure levels. The results provide additional evidence for the value added by the effectiveness of audit committees and the assumption that higher levels of expertise in audit committee members necessarily leads to improved corporate governance by means of more active involvement under a principles based regime of accountability. The results add to the growing body of literature that finds a link between corporate governance mechanisms and

various facets of the financial reporting and audit processes (see Cohen et al 2004 for a review).

The findings of this study suggest that effective audit committees and especially the expertise resident in audit committee members improves regulatory compliance with disclosure requirements requiring complex judgement in an environment of ambiguity as to market sensitivity. Capital market efficiency benefits from timely information releases and effective audit committees appear to assist in the dissemination of this information in a heightened way. The results of this study should prove helpful to future investigations of the impact of corporate governance on disclosure practices.

In terms of limitations, this study uses proxies for audit committee effectiveness because it is not practicable to use anything other than publicly available data to determine the components that constitute effectiveness. Even so, not all proxies are included. For instance the share ownership of audit committee members could be included in the model. In terms of continuous disclosures, counting their frequency takes no account of their import or financial effect. Future studies could attempt to classify and weight the different types of disclosures made by companies.

One limitation that all studies such as this exhibit is that boards both appoint audit committee members and set the tone for disclosure compliance. As such, it is difficult to unravel the impact of audit committee effectiveness in this context.

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Table 1 Sample selection of study variables (N=355 firm-years)

Panel A: Summary of sample selection criteria	
S&P ASX 200 Australian Listed Companies	
Criteria	Observations
Total ASX 200 Australian Listed Companies 2004-2007	800
Less	
Companies without 30 June year-ends	312
Companies in the Financial services industry	21
Firms with missing financial or corporate governance data	112
Final Sample	*355

*This represents the sample after winsorizing the top and bottom 1 per cent of frequency counts for the Disclosure dependent variable.

Panel B: Distribution of Observations by industry

Industry	# Observations
10. Energy (IE)	32
15. Material (IMAT)	84
20. Industrial (IIND)	72
25. Consumer Discretionary (ICD)	106
30. Consumer staples (ICS)	18
35. Health Care (IHC)	27
45. Information Technology (IIFT)	4
50. Telecommunication (IT)	12
<i>Global Industry Classification Standards (GICS) used by Thomson</i>	355

Table 2 Descriptive statistics (N=355 firm-years)

Variable	Min	Max	Mean	Median	Std. Dev.
Disclosure Frequency	1.00	178.00	18.10	13.00	20.72
ACE	.00	1.00	0.41	0.00	.49
ACI	.00	1.00	.59	1.00	.49
ACX	.00	1.00	.85	1.00	.35
ACM	.00	1.00	.87	1.00	.33
ACS	.00	1.00	.94	1.00	.24
ACB	.00	1.00	.90	1.00	.30
OUTDIR	.00	1.00	.35	.33	.26
SIZE (log\$M)	.83	11.67	7.11	7.22	1.71
ROA	-.23	.57	.08	.07	.08
LEV	.09	588.75	2.17	.51	31.22
PLIST	1.00		19.93	13.00	21.29
INVREC	.00		.23	.18	.17
D_Takeover	.00		.19	.00	.40
D_IssuedCapital	.00		.47	.00	.50
D_CompAdmin	.00		.15	.00	.36
D_ASXQuery	.00		.10	.00	.30

Legend: ACE_{it} = Audit Committee Effectiveness index. An audit committee is effective when $[(ACI_{it}=1) + (ACX_{it}=1) + (ACM_{it} \geq 3=1) + (ACS_{it} \geq 3=1) + (ACB_{it}=1)]$, based on an extended version of the method used by Zaman et al 2011); ACI_{it} = a dummy variable that takes a value of 1 if all AC members are independent non-executive directors; 0, otherwise; ACX_{it} = a dummy variable that takes a value of 1 if the audit committee includes a member with accounting, business and financial expertise; 0, otherwise; ACM_{it} = frequency of audit committee meetings held during the financial year; ACS_{it} = size of audit committee; ACB_{it} = a dummy variable that takes a value of 1 if the audit committee includes a member who is also on another board of another company; 0, otherwise; $OUTDIR_{it}$ = the proportion of independent directors on the board; $SIZE_{it}$ = natural logarithm of market capitalisation; ROA_{it} = return on assets; LEV_{it} = ratio of total liabilities to total assets; $PLIST_{it}$ = the number of years since original listing; $INVREC_{it}$ = the proportion of total assets in inventories and receivables; $D_TakeOver_{it}$ = indicator variable that takes the value 1 if the company is subject to a takeover announcement (Intention to make a takeover offer, Bidder's statement, target's statement (market bid), off-market bid offer document to bid class, variation of takeover bid), Director's statement re takeover, Supplementary Bidder's statement, Supplementary Target's statement offer or bid indicated by the events/documents noted in the footnote during the fiscal year, 0 otherwise; $D_IssuedCapital_{it}$ = indicator variable that takes the value 1 if the company's number of issued shares changed during the fiscal year for Renounceable issue, Bonus issue, Placement, issues to the public, Capital reconstruction, New issue letter of offer, Alteration to issued capital, Non-renounceable issue, issued capital-other, Disclosure document, on-market buy-back scheme, Daily share buy back notice, Daily share buy-back notice, Appendix 3B, 0 otherwise; $D_CompAdmin_{it}$ = indicator variable that takes the value 1 if the company disclosed routine administrative announcements such as Director appointment/ resignation, Details of company address, details of registered office address, details of share registry address, trustee appointment. Resignation or trust manager appointment. Resignation, Company secretary appointment, resignation, company administration, change of balance date, trust deed, articles of association, constitution during the fiscal year, 0 otherwise; $D_ASXQuery_{it}$ = indicator variable that takes a variable of 1 if the company was involved with an ASX Query, 0 otherwise; YD_{it} = year dummy variables that take a value of 1 if firm i in year t ; 0, otherwise; $INDUSTRY_{it}$ = industry dummy variables that take a value of 1 if firm i is in a specific industry; 0, otherwise.

Table 3 Pearson's Correlation Matrix (N=355 firm-years)

	ACE	ACI	ACX	ACM	ACS	ACB	OUTDIR	SIZE	ROA	LEV	PLIST	INVRE C	D_Take Over	D_Issued Capital	D_Comp Admin
Disclosure	.127*	.157**	.029	.051	-.106*	.054	.013	.220**	.029	-.024	.159*	-.271**	.248**	.186**	.082
ACE		.692**	.346**	.318**	.212**	.253**	.022	.053	.006	.065	.057	.087	-.001	.055	.047
ACI			-.001	.172**	-.041	-.023	.045	.058	.086	.045	-.067	.014	.017	.083	.111*
ACX				.112*	.032	.038	.060	-.068	-.038	.022	.148*	.069	.039	.016	-.007
ACM					.158**	.089	.139**	.041	-.047	.022	.073	.156**	-.075	-.023	.088
ACS						.045	.001	.078	-.139**	.014	.053	.030	.033	.021	-.061
ACB							-.135*	.139**	-.001	.017	.140*	-.033	-.108*	-.019	-.021
OUTDIR								.108*	.004	-.019	.065	-.009	.075	.179**	.091
SIZE									.090	-.015	.089	-.251**	.188**	.253**	.211**
ROA										-.025	.131*	-.062	-.052	-.083	-.091
LEV											-.237**	-.026	-.026	.056	-.022
PLIST												-.039	-.009	.065	.027

	ACE	ACI	ACX	ACM	ACS	ACB	OUTDIR	SIZE	ROA	LEV	PLIST	INVREC	D_Take Over	D_Issued Capital	D_Comp Admin
INVREC													-.204**	-.151**	-.010
D_Take Over														.081	.168**
D_Issued Capital															.135*
D_Comp Admin															

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Legend: ACE_{it} = Audit Committee Effectiveness index. An audit committee is effective when $[(ACI_{it} = 1) + (ACX_{it} = 1) + (ACM_{it} \geq 3 = 1) + (ACS_{it} \geq 3 = 1) + (ACB_{it} = 1)]$, based on an extended version of the method used by Zaman et al 2011); ACI_{it} = a dummy variable that takes a value of 1 if all AC members are independent non-executive directors; 0, otherwise; ACX_{it} = a dummy variable that takes a value of 1 if the audit committee includes a member with accounting, business and financial expertise; 0, otherwise; ACM_{it} = frequency of audit committee meetings held during the financial year; ACS_{it} = size of audit committee; ACB_{it} = a dummy variable that takes a value of 1 if the audit committee includes a member who is also on another board of another company; 0, otherwise; $OUTDIR_{it}$ = the proportion of independent directors on the board; $SIZE_{it}$ = natural logarithm of market capitalisation; ROA_{it} = return on assets; LEV_{it} = ratio of total liabilities to total assets; $PLIST_{it}$ = the number of years since original listing; $INVREC_{it}$ = the proportion of total assets in inventories and receivables; $D_TakeOver_{it}$ = indicator variable that takes the value 1 if the company is subject to a takeover announcement (Intention to make a takeover offer, Bidder's statement, target's statement (market bid), off-market bid offer document to bid class, variation of takeover bid), Director's statement re takeover, Supplementary Bidder's statement, Supplementary Target's statement offer or bid indicated by the events/documents noted in the footnote during the fiscal year, 0 otherwise; $D_IssuedCapital_{it}$ = indicator variable that takes the value 1 if the company's number of issued shares changed during the fiscal year for Renounceable issue, Bonus issue, Placement, issues to the public, Capital reconstruction, New issue letter of offer, Alteration to issued capital, Non-renounceable issue, issued capital-other, Disclosure document, on-market buy-back scheme, Daily share buy back notice, Daily share buy-back notice, Appendix 3B, 0 otherwise; $D_CompAdmin_{it}$ = indicator variable that takes the value 1 if the company disclosed routine administrative announcements such as Director appointment/ resignation, Details of company address, details of registered office address, details of share registry address, trustee appointment. Resignation or trust manager appointment. Resignation, Company secretary appointment, resignation, company administration, change of balance date, trust deed, articles of association, constitution during the fiscal year, 0 otherwise; $D_ASXQuery_{it}$ = indicator variable that takes a variable of 1 if the company was involved with an ASX Query, 0 otherwise; YD_{it} = year dummy variables that take a value of 1 if firm i in year t ; 0, otherwise; $INDUSTRY_{it}$ = industry dummy variables that take a value of 1 if firm i is in a specific industry; 0, otherwise.

Table 4 Regression results for continuous disclosure and audit committee effectiveness

Coefficients	Independent Variables	Dependent Variable = Disclosure (CD)		
		(1)	(2)	(3)
β_0	Intercept	3.778 (0.431)	1.548 (0.192)	3.742 (0.467)
β_1	ACE	5.635 (2.407)**		5.635 (2.414)**
β_2	OUTDIR	-0.031 (-0.007)	-0.381 (-0.082)	
β_3	SIZE	1.538 (2.017)**	1.597 (2.074)***	1.538 (2.027)**
β_4	ROA	-20.979 (-1.019)	-18.644 (-0.897)	-20.993 (-1.027)
β_5	LEV	-4.396 (-0.456)	1.017 (0.107)	-4.409 (-0.468)
β_6	PLIST	0.178 (3.105)***	0.192 (3.333)***	0.177 (3.143)***
β_7	INVREC	-25.247 (-3.382)***	-23.767 (-3.161)***	-25.252 (-3.408)***
β_8	D_TakeOver	6.519 (2.102)**	6.102 (1.951)**	6.518 (2.108)**
β_9	D_IssuedCapital	4.412 (1.880)**	4.879 (2.065)**	4.410 (1.897)**
β_{10}	D_CompAdmin	0.982 (0.313)	0.926 (0.292)	0.981 (0.313)
β_{11}	D_ASX Query	-3.940 (-0.963)	-4.056 (-0.982)	-3.940 (-0.966)
β_{12-15}	YD	Included	Included	Included
β_{16-22}	INDUSTRY	Included	Included	Included
	N	355	355	355
	F-value	9.481***	9.468***	9.998***
	Adj R square	0.42	0.40	0.42

***, ** represents statistical significance at the .10, .05, .01 levels, respectively (two-tailed). See Table 2 for variable definitions. Dummy and year variables included.

Table 5 Regression results for continuous disclosure and audit committee effectiveness attributes

<i>Coefficients</i>	<i>Independent Variables</i>	<i>Dependent Variable = Disclosure</i>				
		<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
β_0	Intercept	2.558 (0.288)	-2.487 (-0.302)	-0.35 (-0.041)	5.503 (0.645)	-2.228 (-0.261)
β_1	ACI	1.953 (0.804)				
β_2	ACX		6.768 (2.164)***			
β_3	ACM			3.13 (0.803)		
β_4	ACS				-6.604 (-1.370)	
β_5	ACB					5.013 (1.292)
β_6	SIZE	1.528 (1.964)**	1.670 (2.184)***	1.57 (2.038)***	1.654 (2.149)***	1.476 (1.917)**
β_7	ROA	-18.526 (-0.886)	-20.974 (-1.019)	-18.614 (-0.897)	-21.755 (-1.046)	-17.899 (-0.868)
β_8	LEV	-0.46 (-0.049)	-1.114 (-0.120)	-0.624 (-0.066)	3.598 (0.378)	1.446 (0.156)
β_6	PLIST	0.191 ;(3.342)***	0.172 (3.013)***	0.187 (3.269)***	0.201 (3.500)***	0.182 (3.189)***
β_9	INVREC	-24.549 (-3.243)***	-24.768 (-3.317)***	-24.541 (-3.241)***	-22.974 (-3.052)***	-24.045 (-3.225)***
β_{10}	D_TakeOver	6.187 (1.959)**	6.301 (2.022)***	6.189 (1.969)**	6.208 (1.981)**	6.49 (2.074)**
β_{11}	D_IssuedCapital	4.634 (1.937)**	5.174 (2.201)***	4.705 (1.988)***	4.767 (2.022)***	4.955 (2.119)***
β_{12}	D_CompAdmin	725.000 (0.224)	1.801 (0.339)	1.034 (0.322)	0.665 (0.207)	0.998 (0.316)
β_{13}	D_ASX Query	-4.107 (-0.987)	-3.963 (-0.963)	-4.052 (-0.976)	-4.28 (-1.033)	-4.231 (-1.027)
	N	355	355	355	355	355
	F-value	9.418***	9.802***	9.434***	9.546***	9.619***

Coefficients	Independent Variables	Dependent Variable = Disclosure				
		(1)	(2)	(3)	(4)	(5)
	Adj R square	0.405	0.415	0.405	0.408	0.408

**** represents statistical significance at the .10, .05, .01 levels, respectively (two-tailed).^a See Table 2 for variable definitions. Dummy and year variables included.

Endnotes

¹ Available at www.asic.gov.au.

² See ASX Guidance note 8: Continuous disclosure – Listing rule 3.1 and Guidance note 14: Company announcements platform.

³ The ASX Operating Rules replace the former ASX Market Rules, as a result of *Corporations Amendment (Financial Market Supervision) Act 2010* on 1 August 2010. The new rules are very similar to the former rules. The practitioner commentary suggests that: “market participants may not notice a significant difference in the enforcement regime” as a result of the Act: Blake Dawson, *ASIC Market Integrity Rules*, 1 June 2010,

http://www.blakedawson.com/Templates/Publications/x_publication_content_page.aspx?id=58827

⁴ Ettredge et al. (2011) include a distress score variable, but since our sample is comprised of the largest 200 companies in each year, distress is unlikely to be present. For a similar reason we do not include an auditor size control variable since these large companies are almost all audited by the Big 4. Ettredge et al. (2011) also include variables related to the CFO (tenure and whether or not a director). However the focus on disclosure compliance in that paper relates to auditor resignation (hence their inclusion of auditor related variables not relevant to this study), a matter with which the CFO would be heavily involved. Our study includes all price sensitive disclosures, many of which will be board matters rather than CFO matters.

⁵ We used various methods of standardising the dependent variable (dividing the frequency of continuous disclosure by firm size, standardisation of Z scores, logarithm transformation of the level of continuous disclosure, and the estimated abnormal level of continuous disclosure. However, the raw frequency score provided the best results in terms of compliance with OLS regression assumptions.

⁶ Take-over announcement : Intention to make a takeover offer, Bidder’s statement, target’s statement (market bid), off-market bid offer document to bid class, variation of takeover bid, Director’s statement re takeover, Supplementary Bidder’s statement, Supplementary Target’s statement

⁷ Renounceable issue, Bonus issue, Placement, issues to the public, Capital reconstruction, New issue letter of offer, Alteration to issued capital, Non-renounceable issue, issued capital-other, Disclosure document, on-market buy-back scheme, Daily share buy back notice, Daily share buy-back notice, Appendix 3B

⁸ Director appointment/ resignation, Details of company address, details of registered office address, details of share registry address, trustee appointment. Resignation or trust manager appointment. Resignation, Company secretary appointment, resignation, company administration, change of balance date, trust deed, articles of association, constitution,

⁹ AXS query-other, ASX query, Response to ASX query.