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Corporate Governance, Sustainability and the Assessment of Default Risk

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Abstract

This paper investigates whether the quality of a firm's corporate governance practices and its sustainability disclosures are inversely related to its assessed default risk. It is expected that high reported standards of corporate governance will reduce the assessment of a company's default risk by lenders, underwriters and ratings agencies, and therefore reduce the cost of debt for such companies. A corporate governance index based on annual report disclosures was developed to rate each company's corporate governance quality. Derivation of this index was centred on corporate governance indicators suggested by prior research and best practice; particularly the Australian Stock Exchange "Principles of Good Corporate Governance and Best Practice Recommendations". It is similarly expected that the voluntary disclosure of sustainability information (Corporate Social Reporting or CSR) will enhance a firm's management reputation. The assessment of default risk is captured by a firm's individual credit rating supplied by Standard and Poor's. Our results indicate that neither annual report disclosures about corporate governance practices nor sustainability disclosures are significantly related to assessed default risk when firm size is controlled.

Key words: corporate governance, sustainability, disclosure, default risk, credit rating
JEL classifications: G32, G34, M14

1. Introduction

This paper investigates whether the quality of a firm's corporate governance and its sustainability disclosures are inversely related to its assessed default risk. Lenders are an important group of annual report users, and it is therefore important to know whether such disclosures made in these reports are useful for assessing default risk. We investigate this relationship in the Australian setting. It is expected that high perceived standards of corporate governance will reduce the assessment of a company's default risk by lenders and underwriters, and therefore reduce the cost of debt for such companies. It is further expected that the voluntary disclosure of sustainability information will signal effective management and therefore reduced perceived default risk.

There have been several recent studies investigating the relationship between corporate governance and the cost of debt or factors expected to be closely related to it. Their results indicate support for a relationship between aspects of corporate governance quality and the cost of debt. (Bhojraj and Sengupta 2003, Anderson, Sattar and Reeb 2004, Ashbaugh-Skaife, Collins and LaFond 2006) The most recent of these studies by Ashbaugh-Skaife et al. (2006) found that credit ratings are negatively associated with the number of blockholders and CEO power, and positively related to takeover defences, accrual quality, earnings timeliness, board independence, board stock ownership and board expertise.

The majority of prior studies restricted their analysis to a limited set of governance variables, for example Bhojraj and Sengupta (2003) investigated board independence and institutional ownership, while Anderson et al. (2004) examined board characteristics and the cost of debt for S & P 500 firms in the United States and found cost of debt to be inversely related to board size and independence and also audit committee independence, size and meeting frequency. In this study we take a thorough approach to the measurement of governance practices and develop a comprehensive corporate governance index. Our index is centred on corporate governance disclosures related to the ASX Principles of Good Corporate Governance and Best Practice Recommendations. This approach allows us to test whether these governance practices disclosed in the annual reports are useful when assessing default risk.

Regulatory bodies around the world have attempted to define what constitutes high quality corporate governance. The Australian Stock Exchange (ASX) issued ten core "Principles of Good Corporate Governance and Best Practice Recommendations" to apply to company reports for the first financial year after 1 January 2003 (effectively the year ending 30 June 2004 for most Australian companies). Since this time firms have been obliged to report any departures from the Principles, but they were encouraged to assess their compliance as early as possible. Thus, while disclosure about corporate governance practices was voluntary in Australia in 2003 and prior, a considerable amount of disclosure was present.[1]

One potential factor that motivates a company and its directors to voluntarily disclose information regarding corporate governance is that these disclosures reduce the apparent risk of investment in the company, and hence its external financing costs. Effective corporate governance allows accurate performance monitoring, and promotes stability and market and investor confidence, and hence reduces perceived risk. "Corporate governance deals with the ways in which suppliers of finance to corporations

[1] There are several reasons why companies might have chosen to voluntarily disclose information about their corporate governance policies and practices. The research literature provides evidence that annual report disclosures reveal credible, relevant information that is priced by investors, reduces estimation risk and information asymmetry, and reduces the cost of equity capital for firms with a low analyst following. (Lang and Lundholm 1996, Botosan 1997, Botosan and Plumlee 2002, Lundholm and Myers 2002)

assure themselves of getting a return on their investment," per Shleifer and Vishny (1997).[2] Agency theory suggests that stakeholders seek to reduce information asymmetry. Financiers need the management expertise but this leaves managers with significant control rights and the question of how financiers can ensure these are not exercised for the benefit of shareholders or managers' personal gain at the expense of bondholders (Jensen and Meckling 1976). To the extent that governance is an important determinant of default risk, its perceived strength can have a significant effect on estimating that risk. Weak governance can impair a firm's financial position and ability to repay its debts. A firm's credit rating reflects a rating agency's opinion of an entity's overall creditworthiness and its capacity to satisfy its financial obligations (Standard & Poor's, 2002)

Although the detailed methodology used for developing corporate credit ratings by firms such as Standard & Poor's (S & P) and Moody's is not public information, it is reasonable to assume that an assessment of a company's internal regulation and corporate governance practices would be a factor in assessing the default risk level for lenders. A number of US studies have found a positive association between aspects of corporate governance and firm value (Lundholm and Myers 2002; Botosan 1997; Botosan and Plumlee 2002; Lang and Lundholm 1996, 2000) and a few have extended this to explore the association between aspects of corporate governance and perceived credit risk and therefore cost of debt. (Sengupta 1998; Bhojraj and Sengupta 2003; Gompers, Ishii and Metrick 2003; Ashbaugh-Skaife et al. 2006, and Anderson et al. 2004) S & P have described their rating methodology as encompassing four main areas: industry risk (operating risk), business risk (specific company risk factors and keys to success), financial risk (based on quantitative ratios and a qualitative review of financial policy) and liquidity risk (financing needs and cash flow).[3] S & P describe their ratings in the introduction to the Code of Practices and Procedures as "a valuable tool in the global capital markets for the evaluation and assessment of credit risk."

Research has also suggested that firms may (successfully) use corporate social and environmental (sustainability) reporting to "legitimise various aspects of their respective organisations" (Deegan (2002) p.282). If the motivation for disclosing this additional voluntary information is to increase the credibility and enhance the reputation of the management of the organisation, then this should reduce the perceived risk of that organisation from a lender's perspective, if they accept the intended message. This view is further supported by research suggesting that organisations may use corporate social responsibility and sustainability reporting as a vehicle for reputation risk management (Bebbington et.al. (2008) and commentary by Unerman (2008)). Schneider (2008) argues that the market values a firm's environmental performance in assessing risk and a firm's cost of debt capital. Again, agency theory is applicable as the debt market may perceive a proactive environmental strategy as an indication that management are not pursuing short-term profit strategies for the benefit of shareholders at the expense of bondholders. A proactive management stance on sustainability issues could similarly be positively interpreted. Firms with superior sustainability may disclose more information about their sustainability to differentiate themselves from firms with inferior sustainability. Voluntary disclosure theory (see Dye 1985) predicts that high quality companies have incentives to report more extensively to distinguish themselves from lower quality companies. This theory has been applied to voluntary environmental performance disclosure (Clarkson et al. (2008)). These authors demonstrate a positive relationship between environmental performance per se and the level of voluntary environmental disclosures. This prior research and theory suggests that

[2]Scleifer & Vishny (1997) p.742
[3]Presentation made by Chris Dalton, Managing Director, Standard & Poor's Australia & New Zealand, Melbourne Financial Services Symposium, Wednesday 17th March 2004.

voluntary sustainability reporting can be used to indicate underlying superior performance in sustainable practices.

We use the following hypotheses to test the relationships between corporate governance practices and sustainability disclosures found in annual reports and assessed default risk in the Australian setting:

H1 Credit ratings are positively related to the quality of corporate governance practices

H2 Credit ratings are positively related to the voluntary disclosure of sustainability information

The methodology used to test these hypotheses is described in the next section. For the purposes of this paper quality of corporate governance is defined as a high score on our corporate governance index. The quality of sustainability disclosures is not measured directly; instead the volume of sustainability or CSR information (as identified by the firm) disclosed in the annual report or as a separate statement is used as the proxy, given that any disclosure on this issue is voluntary. The methodology section is followed by the results of our analysis and conclusions.

2. Methodology

2.1 Development of a Corporate Governance Index

A corporate governance index based on annual report disclosures was developed to rate each company's corporate governance quality. Derivation of this index was centred on corporate governance indicators suggested by prior research and best practice, such as the Australian Stock Exchange "Principles of Good Corporate Governance and Best Practice Recommendations" (ASX Principles). Table 1 summarises the corporate governance index. The maximum possible score was 26 (7 disclosure, 15 independence, 2 external audit, 2 procedures). Each company's corporate governance score (CGSCORE) was calculated by dividing their total score by this maximum possible score, to express it as a proportion for ease of comparability[4].

TABLE 1 – Corporate Governance Index

DISCLOSURE		Maximum
The annual statements contain a statement addressing corporate governance.	1 or 0	1
Reference is made to the ASX Corporate Governance Principles	1 or 0	1
An assessment is made regarding current compliance with the ASX Principles	1 for a general overview 2 if the review is detailed	2
The qualifications of the Board members are disclosed	1 or 0	1

[4] As an additional check, the models were also computed using the raw corporate governance scores (not scaling by 26) and this made no impact on the correlation or regression results.

Table 1 continued…		
The relevant experience of the Board members is disclosed	1 or 0	1
Members' attendance at meetings is disclosed	1 or 0	1
TOTAL DISCLOSURE		**7**
INDEPENDENCE		
CEO not same person as Board chairman	1 or	1
BOARD		
Board size (average membership)	Noted only	
Proportion non-executive members	x/1	1
Proportion of independent members	x/1	1
Independent chairperson	1 or 0	1
Number of meetings during year: Six or more Less than 6 Not disclosed	1 point 0 points 0 points	1
AUDIT COMMITTEE		
Committee size (average membership)	Noted only	
Proportion non-executive members	x/1	1
Proportion of independent members	x/1	1
Independent chairperson	1 or 0	1
Number of meetings during year: Four or more Less than 4 Not disclosed	1 point 0 points 0 points	1
REMUNERATION COMMITTEE		
Committee size (average membership)	Noted only	
Proportion non-executive members	x/1, zero if no committee	1
Proportion of independent members	x/1, zero if no committee	1
Independent chairperson	1 or 0	1
NOMINATION COMMITTEE		
Committee size (average membership)	Noted only	
Proportion non-executive members	x/1, zero if no committee	1
Proportion of independent members	x/1, zero if no committee	1
Independent chairperson	1 or 0	1
TOTAL INDEPENDENCE		**15**
EXTERNAL AUDIT		
'Big Four' audit	1 or 0	1
Proportion of audit/other fees	x/1	1
TOTAL EXTERANAL AUDIT		**2**

Table 1 continued…

PROCEDURES		
Role/duties of Board clear (e.g. Charter)	1 or 0, 0 if not disclosed	
Company has a Code of Conduct	1 or 0, 0 if not disclosed	
TOTAL PROCEDURES		**2**
MAXIMUM POSSIBLE SCORE		**26**

2.1.1 Disclosure

The first points in the index were awarded for a company making a statement on their corporate governance policy, for including a reference to the ASX Principles, and for making an assessment of whether the company currently complies with ASX Principles (1 point for a general statement about the extent of compliance, 2 points for a detailed consideration of the Principles). The remainder of the index was an assessment of whether in fact the Principles were already being applied.

The index includes a point each for disclosure of the board members' qualifications and experience, and another for disclosing their attendance at meetings. These disclosures are required for stakeholders to judge the competency of the board. The index does not endeavour to make an assessment of actual board competency on the basis of these disclosures, since to do so would be highly subjective.

2.1.2 Independence

To assess the strength of the oversight role performed by the board an assessment was made of the independence of the board and relevant committees (Ashbaugh-Skaife et al. 2006, Anderson et al. 2004). Independence has been a common essential requirement in all the regulatory recommendations regarding corporate governance. A board independent of the company and free from undue influence from any major shareholder enables the directors to carry out their oversight role in the best interests of all shareholders and to ensure that management is accountable to stakeholders.

The number of members of the board and the recommended committees (audit, remuneration and nomination) was noted, and the proportion of independent members was calculated. In the absence of such a committee, the proportion was set to zero.[5] Points were also included to note the separation of the role of CEO and chairperson (Balatbat, Taylor and Walter 2004) and for an independent chairperson. As a further measure of the strength of the oversight role performed by the board, the number of board and audit committee meetings was considered. Following the Horwarth Report (2002) recommendations, strong oversight was defined as the board meeting at least six times annually and the audit committee at least four times annually.

Two measures were used for independence of directors. The first was simply whether the director is a non-executive director or not (Clarkson et al. 2006). Annual reports sometimes imply that the term non-executive indicates an independent director. As the Horwarth (2002) report points out, however, being a non-executive director merely means that a director is not *currently* a manager and is often far from meaning that the director is independent of the company. The second measure therefore took into account

[5] Having regard to possible difficulties faced by smaller companies, it was permitted for a company to have combined remuneration/nomination committees provided that the duties of the combined committee were clearly stated to include both oversight roles. If a company did not have a committee performing either role, then the score was given as zero.

the recommendations for best practice per the IFSA "Blue Book" 2004 and ASX Principle 2, and strictly applied a director was only considered independent if he/she satisfied all of the following:

- non-executive
- had an interest in less than 5% of the company's voting share capital,
- had not held an executive position in the company in the past three years
- had not had any material interest in a contractual relationship/consultancy with the company other than the directorship and had no other obvious personal connection with executive directors.
- had not served on the Board for a prolonged period likely to materially effect independence (as a guide this study presumed 10 years to be the maximum)

This was assessed based on information gleaned from the 2003 annual report of the company, particularly disclosure of directors' interests, related party transactions and general description of directors' positions held.

2.1.3 External audit

As the Board is also responsible for the appointment of the external auditors, it was noted whether or not a leading external audit firm had been appointed. Audit firm size was used as a proxy for quality (Clarkson et al. 2006; DeAngelo 1981; Francis, Khurana and Pereira 2003). One point was awarded for a "Big Four" audit firm. The proportion of audit fee charged compared to the fees for other services provided was also calculated. It is assumed that an auditor will be more independent the higher the proportion of the fee relates to the audit, as this reduces potential conflicts of interest.

2.1.4 Procedures

Finally, points were awarded a company for having adopted procedures suggested by ASX Principles 1 and 3. One point was awarded if the company laid down guidelines for board/management duties (e.g. Charter). A further point was awarded if the company disclosed that it had a Code of Conduct.

2.2 Assessment of sustainability

The published annual financial reports of each of the companies in the sample were examined for the inclusion or otherwise of a statement on Corporate Social Responsibility (CSR) or Sustainability. In addition, sample firms with separate sustainability or CSR reports were identified. The total number of pages devoted to sustainability reporting was captured for each company.

2.3 Sample and data

Assessed default risk is captured by an independent assessment of the risk to lenders - a firm's individual credit rating supplied by Standard and Poor's (S & P). Companies often acknowledge the importance of credit ratings in raising non equity finance. Indeed, many quote their credit rating (particularly if it has improved during the period) in their annual report, as an indication of their risk standing.

Credit ratings for 82 Australian companies were obtained from S & P for the financial year to 30th June 2004. However several of these companies were excluded from our final sample. S & P rates entities at their request as well as rating companies for their own database. Entities may seek a credit rating

in order to obtain finance, or in contemplation of listing. The original list contained a number of private (Pty Ltd) companies as well as subsidiaries of other companies not publishing separate financial data. There were also a number of delistings and mergers/demergers and one company under voluntary administration. The final sample ultimately consisted of 38 companies which met the criteria of being non finance/banking/insurance[6] and which held an S & P credit rating in 2004 and filed an annual report in 2003. The mean market capitalisation for this sample is M$5,841; with this measure of firm size varying between M$96.2 and M$44,239.

TABLE 2 - Reconciliation original data set to final sample

	No.
2004 S & P Rated (non banking/finance)	**82**
Exclusion reason	
Delisted	7
No information - government	4
No information - Pty or trust	23
Subsidiary	7
Merger/demerger	1
Start up during year	1
Voluntary administration	1
Final sample	**38**

The information for constructing the corporate governance index, sustainability disclosures, and for the control variables was obtained from the 2003 annual reports, and from the databases AspectHuntley DatAnalysis, AspectHuntley FinAnalysis and Connect 4. In 2003 there was no obligation for companies to report their degree of compliance with the ASX Principles, therefore the inclusion of a corporate governance statement was voluntary. The main areas of the report where such information was found were the board of director's report, any corporate governance statement made, details of directors' qualifications, experience, past employment and directorships if given, details of shareholdings and directors' interests and notes to the financial statements, particularly related party transactions.

2.4 Descriptive statistics

The S & P Global (Long Term) Credit Rating Scale ranges from AAA (Extremely Strong Capacity) to D (Payment Default). This was converted to a 22 point ordinal scale such that AAA equated to 22, BB (Less vulnerable) equated to 11 and D equated to 1 (see Table 3). This is similar to the scale used in USA Studies by Anderson et al. (2004) who used credit ratings to control for differences in default risk, by Reeb, Mansi and Allee (2001), and by Ahmed et al. (2002); although this latter study followed Compustat's

[6] Insurance and financial service companies were excluded, as the regulations affecting such companies regarding governance practices are substantially different from other listed companies.

conversion of ratings with larger values corresponding to a *less* favourable debt rating. S & P defines its issuer credit ratings as an assessment of the firm's financial capacity and willingness to pay its financial obligations, 'based on current information furnished by obligors or obtained by Standard & Poor's from other sources it considers reliable.[7] A 'key dimension' of the ratings are financial ratios for measuring performance and financial structure. Descriptive statistics for the sample are shown in Table 4. The highest credit rating in the sample was AA- (SPRATE = 19) and the lowest was CCC (SPRATE = 5), while the median was BBB+ (SPRATE = 15).

Table 4 also shows descriptive statistics for our corporate governance index and its key components, sustainability disclosures, and several firm characteristics. The highest CGSCORE was 96.9% (25.2/26), while the lowest was 42.7% (11.1/26). The mean and median corporate governance scores were 74.9% and 80.3% respectively. The mean disclosure score (DISCL) was 82.7% (5.8/7), with a wide range between 14.3% and 100%. Only one company made no corporate governance statement and 18/38 companies (47%) scored 7/7. The mean board size was 8 members and 3 members for the audit committee. The mean score for overall independence (INDEP) was 72%, again with a range from 31% to 99%. The mean proportion of board member independence (BDIND) was 49%, with 19/38 companies (50%) having a majority independent board. For audit committees the mean proportion of member independence (ACIND) rose to 68%, with 34/38 (89%) companies assessed as having a majority independent audit committee and 10/38 (26%) fully independent. The mean proportion of non executive directors on the Board was 75% for the sample, with 100% on audit committees. Ten of our sample companies issued a separate sustainability or CSR report. When both annual and separate report disclosures were considered, there was substantial variation in the extent of sustainability reporting; with the number of pages devoted to these disclosures ranging between 0 and 82, with a mean (median) of 11.63 (2.00).

TABLE 3 – Credit Rating Scale

Rating Scale	Index	S & P Description
AAA	22	Extremely strong capacity
AA +	21	
AA	20	Very strong capacity
AA-	19	
A +	18	
A	17	Strong capacity
A-	16	
BBB +	15	
BBB	14	Adequate capacity
BBB-	13	
BB +	12	
BB	11	Less vulnerable

[7] Standard & Poor's Website: http://www2.standardandpoors.com

Table 3 continued…		
BB-	10	
B +	9	
B	8	More vulnerable
B -	7	
CCC+	6	
CCC	5	Currently vulnerable
CCC-	4	
CC	3	Currently highly vulnerable
C	2	Administration/Bankruptcy
D	1	Payment default

Notes:

Global Rating Scale Source: Presentation made by Chris Dalton, Managing Director, Standard & Poor's Australia & New Zealand, Melbourne Financial Services Symposium, Wednesday 17th March 2004 www.users.bigpond.com/bradleyjon/SP/Standard_Poors.ppt

Standard & Poor's Credit Ratings Definitionshttp://w.0.standardandpoors.com.au/

TABLE 4 - Descriptive Statistics for the Sample of 38 Companies (based on 2003 data)

Measure	Mean	Median	Std Dev	Minimum	Maximum
SPRATE	14.454	15.000	2.818	5.000	19.000
CGSCORE	0.749	0.803	0.177	0.427	0.969
DISCL	0.827	0.929	0.235	0.143	1.000
INDEP	0.720	0.774	0.223	0.309	0.989
AUDIT	0.799	0.804	0.114	0.500	0.977
PROC	0.645	0.500	0.347	0.000	1.000
BDIND	0.493	0.497	0.214	0.000	0.917
ACIND	0.682	0.667	0.264	0.000	1.000
BDSIZE	7.686	7.958	2.427	4.000	14.500
ACSIZE	3.189	3.000	1.337	0.000	6.000
SUST	11.630	2.000	22.488	0.000	82.000
SIZE	8.078	7.951	1.273	4.977	10.675
LEV	0.437	0.266	0.583	0.000	2.650
GROW	0.892	0.966	0.151	0.357	1.000
PER	0.123	0.106	0.088	0.020	0.528

Notes:

SPRATE = Standard & Poor's credit rating for the firm at 30 June 2004

CGSCORE = the proportional score (x/26) on the corporate governance index

DISCL = is the disclosure score from the corporate governance index expressed as a proportion, x/7
INDEP = is the independence score from the corporate governance index expressed as a proportion, x/15
AUDIT = is the external audit score from the corporate governance index expressed as a proportion, x/2
PROC = is the procedure score from the corporate governance index expressed as a proportion, x/2
BDIND = the proportion of independent directors on the Board during the annual report period
ACIND = the proportion of independent directors on the Audit Committee during the annual report period
BDSIZE = the mean number of directors on the Board during the annual report period
ACSIZE = the mean number of directors on the Audit Committee during the annual report period
SUST = total number of pages devoted to sustainability reporting
SIZE = natural log of book value of assets
LEV = book value long term debt/market value common equity end of year
GROW = Measure for growth: Proportion of tangible assets to total assets
PER = ratio of cash flows (EBITDA) to total assets, where EBITDA is earnings before interest, tax, depreciation and amortisation.

All 38 companies in the sample were audited by one of the 'Big 4' audit firms, so any variation in AUDIT score was in respect of the relative proportion of audit/non audit related fees paid to the audit firm during the year. One firm provided no breakdown of audit firm fees, (and therefore scored 1/2 for having a Big 4 audit firm only), otherwise the minimum proportion of audit/non audit fees was 16% and the maximum 95%, with a mean of 61%. Firms were more likely to have a Code of Conduct (31/38 firms or 82%) than a Board Charter explicitly outlining the role of the Board (18/38 or 47%). Many of the companies, however, had introduced a Charter since the 2003 year end or stated that they were reviewing corporate governance procedures in the light of the ASX Principles and intended introducing one for 2004.

3. Analysis

The following model (Model 1) was used to test hypotheses 1 and 2 that a firm's credit rating is positively related to the quality of its corporate governance practices and the voluntary disclosure of sustainability information:

$$SPRATE_{t+1} = \alpha + \beta_1 CGSCORE_t + \beta_2 SUST_t + \beta_3 SIZE_t + \beta_4 LEV_t + \beta_5 GROW_t + \beta_6 PER_t + \mu_t$$

Where year t is 2003, $SPRATE_{t+1}$ is the S & P credit rating for the firm at 30 June 2004, CGSCORE is the proportional score (x/26) on the corporate governance index and SUST is the number of pages devoted to sustainability reporting. Following prior research and the factors suggested by S & P, several control variables were also included. Larger firms and higher performing firms are associated with lower risk and are therefore expected to have a higher credit rating and a lower cost of debt (Sengupta, 1998; Bhojraj and Sengupta, 2003; Anderson et al. 2004; Balatbat et al. 2004). The natural log of book value of assets captures firm size (SIZE). Firm performance (PER) is measured as the ratio of cash flows (EBITDA) to total assets, where EBITDA is earnings before interest, tax, depreciation and amortisation. On the other hand, high leverage and growth firms are associated with higher risk and therefore a higher

cost of debt and a lower credit rating (Sengupta 1998; Bhojraj and Sengupta 2003; Anderson et al. 2004; Balatbat et al. 2004). Book value long term debt/market value common equity measures leverage (LEV). Growth firms (GROW) are captured by the proportion of tangible assets to total assets.

The regression results for this model are shown in Table 5. Corporate governance index scores (CGSCORE) is not significantly related to credit rating. Indeed, it is insignificant in the wrong direction. Further, sustainability disclosures (SUST) are not significantly related to credit rating. The only significant variables were SIZE, LEV and GROW. Size was positively related to credit ratings and leverage negatively correlated, as expected. However growth was positively associated with credit ratings, which is surprising as growth is generally associated with increased risk.

TABLE 5 – Regression Results for the sample of 38 ASX listed companies
(Dependent variable is S & P rating 2004; Other variables based on 2003 annual reports. Figures in parenthesis are t statistics)

Variable	Predicted sign	Model 1	Model 2	Model 3
Intercept		-0.788 (-0.212)	0.128 (0.027)	1.111 (0.315)
CGSCORE	+	-0.317 (-0.152)		
SUST	+	-0.003 (-0.192)	-0.007 (-0.372)	-0.005 (-0.278)
DISCL	+		-1.444 (-0.653)	
INDEP	+		-0.669 (-0.310)	
AUDIT	+		-0.735 (-0.196)	
PROC	+		1.350 (1.059)	
CEO CHAIR	+			-1.576 (-1.666)
BDIND	+			0.433 0.211
BDSIZE	+			-0.092 (-0.468)
SIZE	+	1.277 (4.160)**	1.337 (3.913)**	1.308 (3.305)**
LEV	_	-1.306 (-2.073)*	-1.275 (-1.903)*	-1.519 (-2.378)*
GROW	_	6.889 (2.798)**	6.242 (2.456)*	5.917 (2.362)*
PER	+	-3.022 (-0.730)		

Table 5 continued…				
Adj R2		0.437	0.412	0.459
F		5.780**	4.244**	5.485**

Notes:

*significant at <0.05, ** significant at <0.01; As the sign of the variables is predicted, the p values shown are one tailed

CEOCHAIR = a dichotomous variable, being 1 if the CEO position is separate from the Board Chair (i.e. not the same director), otherwise 0, during the annual report period

Other variable definitions are the same as shown for Table 4

TABLE 6 – Pearson and Spearman Correlations for 38 ASX listed companies (Pearson correlations are above diagonal; p values are shown in parenthesis)

	SPRATE	CGSCORE	SUST	DISCL	INDEP	AUDIT	PROC	CEOCHAIR	BDIND	BDSIZE	SIZE	LEV	GROW	PER
SPRATE		0.049 (0.770)	0.225 (0.175)	-0.169 (0.310)	0.139 (0.406)	0.076 (0.649)	0.020 (0.907)	-0.215 (0.194)	0.152 (0.361)	0.325* (0.046)	0.523** (0.001)	-0.362* (0.026)	0.381* (0.018)	0.053 (0.753)
CGSCORE	0.053 (0.751)		0.196 (0.238)	0.711** (0.000)	0.918** (0.000)	-0.009 (0.957)	0.529 (0.001)	0.587** (0.000)	0.681** (0.000)	0.298 (0.069)	0.244 (0.139)	-0.095 (0.569)	-0.194 (0.243)	0.220 (0.185)
SUST	0.400* (0.013)	0.595** (0.000)		-0.024 (0.886)	0.286 (0.082)	-0.271 (0.100)	0.056 (0.741)	0.023 (0.892)	0.315 (0.054)	0.315 (0.054)	0.409* (0.011)	-0.174 (0.295)	-0.044 (0.793)	0.120 (0.474)
DISCL	-0.096 (0.566)	0.707** (0.000)	0.369* (0.022)		0.406* (0.012)	-0.300 (0.067)	0.528** (0.001)	0.523** (0.001)	0.370* (0.022)	0.055 (0.745)	-0.063 (0.706)	0.125 (0.454)	-0.160 (0.338)	0.062 (0.710)
INDEP	0.154 (0.357)	0.882** (0.000)	0.529** (0.001)	0.415** (0.010)		0.072 (0.668)	0.270 (0.102)	0.453** (0.004)	0.704** (0.000)	0.395* (0.014)	0.391* (0.015)	-0.178 (0.284)	-0.202 (0.225)	0.269 (0.102)
AUDIT	0.115 (0.492)	-0.036 (0.828)	-0.176 (0.290)	-0.329* (0.044)	0.014 (0.935)		-0.031 (0.854)	-0.056 (0.740)	0.016 (0.924)	0.010 (0.951)	0.020 (0.907)	-0.060 (0.720)	0.106 (0.525)	-0.028 (0.869)
PROC	-0.023 (0.893)	0.544** (0.000)	0.187 (0.261)	0.466** (0.003)	0.257 (0.119)	0.034 (0.838)		0.498** (0.001)	0.237 (0.152)	-0.076 (0.651)	-0.143 (0.391)	-0.039 (0.818)	0.031 (0.852)	0.015 (0.931)
CEOCHAIR	-0.277 (0.092)	0.548** (0.000)	0.216 (0.192)	0.376* (0.020)	0.443** (0.005)	-0.077 (0.644)	0.447** (0.005)		0.294 (0.073)	-0.041 (0.807)	-0.003 (0.986)	-0.146 (0.383)	-0.164 (0.326)	0.237 (0.152)
BDIND	0.076 (0.651)	0.707** (0.000)	0.481** (0.002)	0.305 (0.063)	0.771** (0.000)	0.046 (0.783)	0.187 (0.262)	0.294 (0.073)		0.424** (0.008)	0.489** (0.002)	-0.101 (0.546)	-0.287 (0.081)	0.237 (0.152)

Table 6 continued…

BDSIZE	0.308 (0.060)	0.338* (0.038)	0.459** (0.004)	0.114 (0.495)	0.480** (0.002)	0.029 (0.861)	-0.119 (0.477)	-0.050 (0.767)	0.462** (0.004)		0.667** (0.000)	-0.137 (0.412)	-0.139 (0.404)	0.269 (0.102)
SIZE	0.494** (0.002)	0.360* (0.026)	0.595** (0.000)	0.156 (0.350)	0.468** (0.003)	-0.122 (0.466)	-0.107 (0.524)	-0.040 (0.810)	0.507** (0.001)	0.651** (0.000)		-0.032 (0.850)	-0.082 (0.625)	0.174 (0.295)
LEV	-0.115 (0.490)	0.025 (0.882)	-0.039 (0.817)	0.162 (0.330)	0.001 (0.996)	0.030 (0.857)	-0.004 (0.981)	0.102 (0.542)	0.003 (0.985)	0.001 (0.997)	0.084 (0.618)		-0.235 (0.155)	-0.076 (0.650)
GROW	0.347* (0.033)	-0.264 (0.109)	-0.054 (0.748)	-0.206 (0.215)	-0.340* (0.037)	0.167 (0.316)	0.073 (0.663)	-0.236 (0.154)	-0.302 (0.065)	-0.382* (0.018)	-0.174 (0.297)	-0.307 (0.061)		0.091 (0.587)
PER	0.014 (0.932)	0.306 (0.061)	0.152 (0.361)	0.219 (0.187)	0.320 (0.050)	-0.270 (0.101)	0.062 (0.712)	0.325* (0.046)	0.262 (0.113)	0.232 (0.162)	0.155 (0.351)	0.064 (0.704)	-0.148 (0.375)	

Notes:

*significant at <0.05, ** significant at <0.01 (two-tailed)

Variable definitions are the same as shown for Table 4

A correlation matrix showing both Pearson and Spearman's rho correlations is presented in Table 6. Given the small sample size and non-normal distributions for some of our variables, the following discussion focuses on the Spearman's rho results. SUST is significantly positively correlated with CGSCORE and SIZE, and GCSCORE is positively correlated with SIZE. However none of these correlations are high enough to induce multicollenearity problems into the model. Interestingly, SUST is significantly positively correlated ($\rho = 0.400$) with credit rating (SPRATE). However as the results in Table 5 show, this relationship becomes insignificant when firm size is controlled. These results suggest that larger firms have both better credit ratings and corporate governance and sustainability disclosures.

In order to determine whether one particular aspect of the CGSCORE was driving the (lack of) results, it was decided to disaggregate the index into its constituent parts as per the corporate governance index shown in Table 1 (Model 2). DISCL is the disclosure score from the index expressed as a proportion (x/7). INDEP is the independence score (x/15). AUDIT is the external audit score (x/2), while PROC is the procedure score (x/2). In the interest of parsimony, PER was dropped from these regressions. Again the only significant variables were SIZE, LEV and GROW, all with the same signs as the previous models. All the disaggregated CGSCORE elements were insignificant, and all except one still had signs contrary to prediction (i.e. negative). The only corporate governance variable with a positive sign was PROC (the proportion of score for having a Board Charter and a Code of Conduct), but still not a significant influence on credit ratings. Spearman's rho correlations between these variables indicate that INDEP is positively correlated with SIZE (possibly larger companies are able to have an increased Board size and accommodate more independent outside directors thus enabling a more independent governance structure overall). The individual corporate governance indicators also tended to be correlated with each

other: INDEP positively related to DISCL and DISCL positively correlated with PROC. SUST is positively correlated with DISCL and INDEP suggesting that independent boards are more likely to disclose both corporate governance and sustainability information.

CGSCORE was further disaggregated based on individual aspects of corporate governance found to be significant in prior research (Model 3). Ashbaugh-Skaife et al (2006) found credit ratings to be positively related to board independence and negatively associated with increased CEO power (i.e. negatively associated with the CEO and Board Chair being the same person). Anderson et al. (2004) found cost of debt to be inversely related to board size and independence and also audit committee independence, size and meeting frequency. Board and audit committee and independence and size are likely to be correlated, so it was decided to test Board independence, board size and separation of CEO/Board Chair.

Again the variables SIZE, LEV and GROW were significant, all with the same signs as the previous models. BDIND was positive and BDSIZE negative (contrary to expectations for BDSIZE) but both had no explanatory significance regarding the proxy for cost of debt (credit ratings). CEOCHAIR was marginally significant but was negatively related to the credit ratings, in other words having a separate CEO/Board Chair had a negative effect on ratings. CEOCHAIR was not highly correlated with any other variable in this model. BDIND was significantly positively correlated with firm SIZE and therefore might be significant but this is masked by the correlation. BDSIZE was also significantly correlated with firm SIZE. SUST is positively correlated with both BDSIZE and BDIND.

We also tested whether industry type or cross-listing were influential. Specifically it was expected that mining might be higher risk (negative relationship with credit ratings) and real estate might be lower risk (positive relationship with credit ratings), and cross listing might affect corporate governance positively (so improve credit ratings). However results of these additional tests indicate that none of these variables were influential.

Table 7 presents diagnostic tests for each of the regression models shown in Table 5. The Breusch-Pagan-Godfrey test indicates that there is heteroscedasticity for models 1 and 2. These models were therefore re-estimated using White's correction. This yielded results essentially the same as those shown in Table 5. Jarque-Bera test statistics indicate that the residuals for each of our models do not depart from the normal distribution. Durbin-Whatson statistics indicate no autocorrelation of residuals for model 1, while models 2 and 3 fall within the indecision areas indicating possible autocorrelation (Tabachnick & Fidell, 1996).

TABLE 7 – Diagnostic test statistics (figures in parenthesis are probabilities)

Test statistic	Model 1	Model 2	Model 3
Breusch-Pagan-Godfrey	2.491 (0.044)	2.833 (0.019)	1.777 (0.123)
Jarque-Bera	0.307 (0.858)	0.198 (0.906)	0.592 (0.744)
Durbin-Whatson	2.020	1.778	1.596
Ramsey RESET	3.035 (0.064)	3.347 (0.050)	4.013 (0.030)

Ramsey's RESET (regression specification error test) is a general test for misspecification of a model's functional form [Brooks (2002); Gujarati (2003)]. Results of these tests indicate that model 1 is not misspecified, while model 3 is misspecified and model 2 is marginal. A significant F statistic from the RESET test is indicative of non-linear parameters in the model or a relevant variable omitted from the model [Brooks (2002); Gujarati (2003)]. OLS estimation produces biased and inconsistent parameter estimates when non-linear parameters are assumed linear in the model (Kmenta, 1971). Overall, the results of diagnostic tests indicate some potential concerns with models 2 and 3, while model 1 results can be considered reliable.

4. Conclusions and Future Directions

Our results indicate that Australian annual report disclosures about corporate governance practices are not useful for the assessment of default risk. This result is in contrast to prior research conducted in the US that finds significant relationships between some aspects of corporate governance quality and factors associated with the cost of debt. Our results also indicate that Australian annual report disclosures about sustainability practices are not useful for the assessment of default risk when firm size is controlled. It appears that larger firms have both better credit ratings and corporate governance and sustainability disclosures.

There are several potential reasons for the disparity between our corporate governance results and those found in the US. First, the disclosures recommended by the ASX Corporate Governance Principles may be inadequate for the purpose of assessing default risk. They do not provide information about several of the factors found to be significantly related to credit ratings and measures of the cost of debt used in prior research. These include institutional ownership, the presence of blockholders, board stock ownership, and indicators of takeover defences, board expertise, disclosure and accruals quality and earnings timeliness.

Alternatively for 2003, a year prior to the introduction of mandatory reporting by exception required by the ASX Corporate Governance Principles, it may simply be difficult for lenders (and for Standard and Poor's) to make more than a cursory assessment of corporate governance practices or to make comparisons between firms due to lack of disclosure and the non uniformity of where in the annual report any disclosure is made. Future studies may wish to examine data from prior to contemplation of the ASX Principles, perhaps in comparison with a post ASX CG Principles sample, or to conduct a longitudinal study. Recent research in Australia suggests that firms provide quality disclosure only when these requirements are 'black letter' or mandatory (Clarkson et al. 2006).

There have also been changes to sustainability reporting practices over the past few years. The KPMG survey of G250 companies drawn from the Fortune Global 500 List (2007), published in 2008, states that "corporate responsibility reporting has gone mainstream" with a rise in CSR reporting in large companies from 79% presenting a stand-alone report compared to 52% in a similar survey from 2005, and a further 4% of companies incorporating CSR data in their annual reports. KPMG argue this clearly indicates an economic incentive for such corporate reporting. The survey report suggests that volume does

not necessarily equate to quality. Many CSR reports lack integration with the financial data. Most reporting companies appear to have corporate governance and sustainability strategies, but few give details regarding implementation and monitoring of these. Other criticisms include a lack of stakeholder reference and feedback, a comparative lack of environmental and social detailed information, and despite a growing trend in formal assurance, this has still not been widely adopted. Aspects to watch for the future do include supply chain relationships as sustainability issues grow beyond an individual corporation, and the role of corporate governance and CSR reporting in corporate risk management strategy.

Similarly the latest biannual sustainability reporting, transparency and disclosure benchmarking survey from SustainAbility Inc, "Tomorrow's Value", published in conjunction with the United Nations Environment Programme (UNEP) and Standard & Poor's, exposes a shift in corporate attitude to reporting. Firms are beginning to seek strategic advantage in the area of sustainability and see opportunities for value creation rather than simple risk management. Financial markets also value the additional information for investors. Many firms have included sustainability issues in their core business strategy but few appear to be using their influence to lobby for change outside their organisation (SustainAbility 2006). This may of course reflect a lack of real commitment and a wish concentrate on internal "good news".

It seems likely that a similar project to the one reported in this paper, drawn on more recent data, may find more significant results. It is also possible that with a relatively small sample, even though the residual degrees of freedom were never less than 30 in any of the models, the peculiarities of the sample may drive the results. The sample size in this study was limited by the availability of the data – a lack of S & P credit ratings for many Australian firms. In order to increase the sample size, future studies might seek alternatives to credit ratings, such as corporate-debt yield spreads (Anderson et al. (2004)), as the measure for the cost of debt.

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