Corporate Governance, Risk Assessment and Cost of Debt

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Abstract

This paper examines the impact of corporate governance practices on the reported cost of contracted debt for Australian listed companies. Good governance decreases the variability in cash flows, reduces the probability of default (reduces default risk), increases the quality of value-relevant information disclosed (reduces the information risk) and thereby lowers the cost of debt (Ashbaugh-Skaife, Collins, and LaFond 2006; Sengupta 1998; Bhojraj and Sengupta 2003; Beekes and Brown 2006; Klein 2002; Easley and O'Hara 2004). Similarly our Australian data confirms that cost of debt is positively related to default and information risks. We show that increased corporate governance reduces default and information risk, thereby lowering cost of debt. However, small companies that adopt higher levels of corporate governance do not benefit through lower cost of debt. This raises questions about the merits of universal adoption of costly governance practices. The evidence suggests that there is a lower cost-benefit payoff for smaller firms than larger firms at least in terms of reducing the cost of debt.

Key words: Corporate governance, default risk, information risk, size, cost of debt

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1. Introduction

Recent corporate collapses in the United States (US), United Kingdom and Australia have raised questions about the efficacy of contemporary governance in corporations. Regulators worldwide have responded with requirements for companies to adopt improved corporate governance practices (Aldamen 2010). Corporate governance improves management oversight and increases disclosure and quality of reported financial information (Chen and Jaggi 2000; Eng and Mak 2003) and reduces the information asymmetry between managers and capital providers (Lang and Lundholm 2000; Core, Holthausen, and Larcker 1999). More specifically in the debt contracting context, increased corporate governance via the information effects reduces the cost of debt for companies (Sengupta 1998; Bougheas, Mizen, and Yalcin 2006; Ashbaugh-Skaife et al. 2006; Anderson, Mansi, and Reeb 2004; Bhojraj and Sengupta 2003; Mansi, Maxwell, and Miller 2004).

However implementing corporate governance practices is costly and for small firms it is disproportionately costly. Small companies claim they incur significant administrative costs if they follow the ASX's corporate governance recommendations (Clarke 2006; Murray 2005; Australian Government 1996). Small companies content that they are disadvantaged by the Principles of Good Corporate Governance and Best Practice Recommendations (PGCG) (Nicholas 2003; Hayes 2003) but that they are compelled to adopt these recommendations because non-adoption sends a negative signal to the market (Milligan and Brearley 2003; Costa 2003; Chong 2002). It is an empirical question whether the asserted costs of implementing the recommended governance practices are warranted in terms of the contracting cost-benefit payoff for firms and in particular small firms.

This paper focuses on the impact of corporate governance on reported cost of debt, while controlling for default risk, information risk and size, in the Australian market dominated by intermediated debt. Much of the prior research on the relationship between governance, risk dimensions and cost of debt has analysed US companies; hence much of the literature pertains to markets that are similar to the United States (Ashbaugh-Skaife et al. 2006; Anderson et al. 2004; Mansi et al. 2004; Sengupta 1998; Bhojraj and Sengupta 2003). The United States' debt market, unlike Australia, is heavily reliant on non-intermediated debt (Teplin 2001).[1] In contrast the Australian corporate debt market is dominated by intermediated or private debt and hence has a lower inherent level of information asymmetry in that private lenders have greater contractual right to financial information from corporate customer (Gray, Koh, and Tong 2009) This research focuses on Australian companies and thus extends the extant empirical evidence on the drivers of debt cost to debt markets dominated by intermediated debt. Finally, the paper examines the contentious question of whether small companies that voluntarily adopt costly corporate governance can benefit through lower cost of debt after controlling for the pricing of risk and other cost factors.

We estimate ordinary least squares (OLS) regression models to test the relations between the corporate governance, risk assessment and cost of debt for 205 non-financial companies. The results show that default and information risks impact on the cost of debt and that increased corporate governance lowers these risk dimensions. Furthermore that corporate governance reduces cost of debt even when controlling for default risk and information risk. More importantly, the results show that smaller companies do not incur a lower cost of debt even when higher levels of corporate governance are implemented.

[1] In 2008, corporate bonds issued by non-financial US businesses totalled $3685.3 billion, which represent 20.2% of debt financing for that sector (Federal Reserves Statistical Release 2008). Furthermore, bank loans for the same sector totalled $1647.9 which represents 9% of total debt financing for non-financial US businesses (Federal Reserves Statistical Release 2008).

2. Literature Review and Hypotheses

2.1 Risk Assessment and Debt Contracting

Risk assessment plays an integral role in determining the cost of debt (Bernoth and Wolff 2008; Sengupta 1998; Ashbaugh-Skaife et al. 2006). Previous literature has identified that risk assessment has two core dimensions: default risk and information risk (Ashbaugh-Skaife et al. 2006; Francis, LaFond, Olssona, and Schipper 2004). Cost of debt is heavily influenced by the borrower's level of default risk (Byun 2007; Klock, Mansi, and Maxwell 2005; Anderson et al. 2004; Gray et al. 2009; Ashbaugh-Skaife et al. 2006; Bhojraj and Sengupta 2003). A firm defaults when it is unable to service its debt obligations and expected cash flow is therefore a significant determinant of a company's expected default risk (Scott 1981; Gentry, Newbold, and Whitford 1985; Aziz, Emanuel, and Lawson 1988; Trueman and Titman 1988). Agency conflict between managers and stakeholders both increases the variance in expected cash flows and reduces the mean expected cash flows thereby increasing default risk (Ashbaugh-Skaife et al. 2006; Ashbaugh-Skaife and LaFond 2006; Bhojraj and Sengupta 2003; Jensen and Meckling 1976). This suggests the following hypothesis:

Hypothesis 1: Default risk is positively related to cost of debt.

Recent studies propose that information risk is also priced in debt contracting via the required return demanded by debtholders (Easley and O'Hara 2004; Francis et al. 2004; Lambert, Leuz, and Verrecchia 2007, 2009). Easley and O'Hara (2004) argue that information asymmetry drives information risk which leads to an increased cost of capital. Lambert et al. (2007) argue that information risk reflects the precision of information rather than information asymmetry which increases cost of capital. We define information risk as

variability in both the level and precision of information across investors (Easley and O'Hara 2004; Francis et al. 2004; Lambert et al. 2007, 2009). Information risk, typically proxied by poor accounting quality, impacts the risk assessment for a company via uncertainty about the expected payoffs and this has an adverse effect on cost of debt. The presence of asymmetric information allows some participants in the debt contracting process to have more and better quality information than others. This imbalance in information leads the disadvantaged party to demand a higher return on the investment which results in increasing the borrowers cost of debt. While US empirical research has shown that information risk impact on cost of debt (Francis et al. 2004; Lambert et al. 2007, 2009), the Australian evidence, in a debt market characterised by private debt, is less clear.

Gray et al. (2009) posit that Australia provides a unique setting to study the impact of information risk on cost of capital due to two market factors. Firstly corporate Australia typically relies more heavily on private debt which implies a generally lower information asymmetry. Secondly Australia's continuous disclosure regime which requires listed companies to immediately disclose price-sensitive information to the public as soon as that information is known to the company also reduces information asymmetry. Gray et al. (2009) find that information risk increases the cost of debt (and equity) capital in Australia. However they find that it is the innate risk rather than discretionary risk component of information risk that drives this result. Further evidence is needed to establish the exact nature of the risk factors that are priced in the private debt dominated market such as Australia (and Europe).

We posit that the quality of accounting information lowers information asymmetry and information risk, thereby lowering the required rate of return demanded by investors (Francis et al. 2004). Information risk is hypothesised to positively impact cost of debt.

Hypothesis 2: Information risk is positively related to cost of debt.

2.2 Corporate Governance and Risk Assessment

Corporate governance is a multi-dimensional construct that consists of many systems and processes that elevate the monitoring and control in the firm. Good corporate governance is expected to mitigate agency conflicts and reduce information asymmetry between managers and investors, thereby reducing default risk (Ashbaugh-Skaife et al. 2006). Prior research finds that the company's cash flow position is a primary determinant of default risk (Scott 1981; Gentry et al. 1985; Aziz et al. 1988; Trueman and Titman 1988). Furthermore, agency conflicts increase the likelihood of variance in expected cash flows thereby impacting on the level of default risk (Bhojraj and Sengupta 2003; Ashbaugh-Skaife et al. 2006). Corporate governance increases the monitoring of management which reduces self-seeking managerial behaviour and agency conflicts between managers and stakeholders, thereby reducing the variance in expected cash flows and default risk. We hypothesise an inverse relation between corporate governance and default risk.

Hypothesis 3a: Corporate governance practices are negatively related to default risk.

Corporate governance also reduces information asymmetry, thereby influencing the level of information risk (Strydom, Navissi, Skully, and Veeraraghavan 2009). Information risk is defined as variability across investors in the quantity and quality (or precision) of financial information from the company (Easley and O'Hara 2004; Francis et al. 2004; Lambert et al. 2007, 2009). Diamond and Verrecchia (1991) and Healy, Hutton and Palepu (1999) show that higher levels of reporting quality reduce information asymmetry. Francis et al. (2005) find that information risk, proxied by accruals quality, is priced by the market. More recently, Doyle, Ge and McVay (2007) established a link between weakness in internal

controls and accruals quality. Ashbaugh-Skaife, Collins, Kinney and LaFond (2008) support (Doyle et al. 2007) and conclude that internal control weaknesses reduce accruals quality. Past research also finds that corporate governance improves accruals quality and hence impacts on information risk (Strydom 2008; Strydom et al. 2009; Kent, Routledge, and Stewart 2008). The current study posits that corporate governance increases the level and quality of accounting information and reduces the level of information asymmetry which decreases information risk. Consequently, the study proposes that corporate governance reduces information risk.

Hypothesis 3b: Corporate governance practices are negatively related to information risk.

2.3 Corporate Governance and Cost of Debt

The cost of debt has been found to be related to higher levels of corporate governance. Ashbaugh-Skaife et al. (2006) find that credit ratings for US companies, a proxy for cost of debt, are positively related to corporate governance measures such as financial transparency, board independence, board stock ownership, and board expertise. Additionally, higher credit ratings are negatively associated with blockholders that owned at least five percent of total shares and CEO power on the board. Klock et al. (2005) find that a negative relation exists between the corporate governance index and cost of debt financing for US companies. Other US studies find various aspects of governance such as auditor quality and tenure (Mansi et al. 2004), Big Six auditor choice by young firms (Pittman and Fortin 2004), and board structure (independent boards, larger boards, and fully independent audit committees) (Anderson et al. 2004) are negatively related to debt cost. The presence of large institutional ownership, more independent directors and higher overall quality of disclosure have also been found to impact positively on credit ratings and yields (Bhojraj and Sengupta 2003; Sengupta 1998).

We propose that cost of debt is affected by corporate governance as well as default and information risk. Companies implement corporate governance practices to mitigate agency conflicts amongst stakeholders (Ashbaugh-Skaife et al. 2006; Sengupta 1998; Bhojraj and Sengupta 2003; Beekes and Brown 2006). As a result, creditors obtain decision-relevant information about the company's expected cash flows which contributes to the reduction in expected default risk thereby lowering the cost of debt (Ashbaugh-Skaife et al. 2006; Sengupta 1998; Bhojraj and Sengupta 2003; Beekes and Brown 2006). Additionally, the effect of corporate governance on the quality, transparency and disclosure of accounting information reduces information risk, thereby lowering the required rate of return demanded by debtholders. We therefore hypothesise that corporate governance and cost of debt are negatively related.

Hypothesis 4: Cost of debt is negatively related to corporate governance practices.

2.4 Company Size and Debt Contracting

Much research has found company size is related to the underlying dimensions of the firm including governance. Small companies support dissimilar corporate governance practices to those normally adopted by large companies (Australian Institute of Company Directors 2003; Australian Securities Exchange 2004; Da Silva Rosa, Izan, and Lin 2004; Laing and Weir 1999). The Horwath Corporate Governance report (2004) indicates that small companies implemented PGCG less frequently than large companies. The ASX Corporate Governance Council (2006) find that small companies adopted the PGCG recommendations at a lower rate compared to larger companies. Furthermore, the variation in corporate governance practices amongst different sized companies is reinforced in the PGCG which only mandates an audit committee for the Top 300 companies (Australian Securities Exchange 2007).

Given that corporate governance practices vary across different sized companies, it is expected that this difference will impact on risk assessment and ultimately the cost of debt for small versus large companies. Default risk will be related to size for at least two reasons. Firstly, smaller firms have less bargaining power with creditors to negotiate debt terms or restructure debt. Secondly resource allocation differs between small and large firms (Carter and Van Auken 2006; Headd 2003). Small firms have fewer resources to call on when faced with financial difficulties which adversely impact their ability to cope under the threat of default. As a result, smaller companies are more likely to encounter debt repayment problems relative to larger companies and have less chance of surviving in comparison to larger companies. Consequently, smaller firms are perceived to have higher default risk relative to their large counterparts.

Information risk assessment will also be influenced by company size. Small companies generally operate within a poor information environment with diminished financial transparency and increased information asymmetry amongst stakeholders (Elfakhani and Zaher 1998; Binks, Ennew, and Reed 1992; Lean and Tucker 2001; Brewer 2007). As a result of the high information cost, financial analysts are less apt to follow and report on small companies (Easterday, Sen, and Stephan 2008; Chang, Dasgupta, and Hilary 2006; Brewer 2007). Analysts' neglect of small firms further amplifies the information asymmetry problem, thereby increasing chances of misevaluation (Chang et al. 2006).

The implementation of higher levels of corporate governance practices, especially the financial report and oversight dimensions, is likely to mitigate the inherently higher default and information risks of small companies. Thus the small companies that do adopt higher quality governance are expected to have a lower cost of debt. This suggests that small companies are positioned to gain more from the informational advantages of corporate governance, resulting in a heightened governance, risk assessment and cost of debt effect

relative to larger companies. The benefits of corporate governance also extend to large companies, but it is small companies that can employ the adoption of such practices to manage lenders' perception of its risk and transparency of information. The following hypothesis formally states the relation between company size and cost of debt when higher levels of corporate governance practices are implemented.

Hypothesis 5: Small companies that implement higher levels of corporate governance pay a lower cost of debt.

3. Research Design

3.1 Sample Selection

The sample consists of public companies listed on the Australian Stock Exchange with a 2007 June 30 balance date. The sample year 2007 was selected because it represents the last available year prior to the Global Financial Crises (GFC) of 2008 – 2009. The initial sample frame includes 1,824 listed companies is reduced to 205 companies after applying data and sample constraints.[2] The data is collected from annual reports and database information from AspectHuntley's DatAnalysis and FinAnalysis.

3.2 Cost of Debt

The cost of debt variable *COST* is obtained by analysing each company's annual report. Prior studies, which focus primarily on traded debt issued by US companies, use yield spreads to proxy for cost of debt (Nikolaev and Van Lent 2005; Bhojraj and Sengupta 2003; Boubakri and Ghouma 2006; Klock et al. 2005; Anderson et al. 2004; Shaw 2007; Schauten and Blom

[2] The sample was reduced by the following restrictions: (1) 257 companies from the banking, insurance and financial sectors are excluded; (2) 328 companies without a June 30 balance date are excluded; (3) 618 companies without interest bearing debt are excluded; (4) 16 companies did not report cost of debt in their annual reports; (5) 10 outliers were omitted (see McDonald (1973) and Subramanyam (1996)); (6) 390 companies are excluded due to non available data for ACCRL (information risk variable).

2006; Sengupta 1998). However, unlike the US, Australian companies are less reliant on traded debt and often resort to financial intermediaries to access interest bearing debt (Reserve Bank of Australia 2005). As a result, this study utilises the interest rate information disclosed in the notes to the financial statements to calculate the cost of debt. The cost of debt variable, *COST*, is the reported weighted average interest rate for the company's interest bearing debt.

3.3 Corporate Governance

Corporate governance is a multi-faceted concept that is captured by fourteen individual governance variables drawn from the prior literature and shown in Table 1. The variables are board independence, duality of the role of board chair and chief executive officer, board size, board meeting, the presence of a nomination committee, the presence of a remuneration committee, audit committee independence, financial expertise of the audit committee, audit committee meetings, size of audit committee, audit committee charter, identity of external auditor, blockholders and insider ownership. Consistent with previous literature, the study calculates a corporate governance composite by summarising the fourteen individual corporate governance variables into a single variable (Gompers, Ishii, and Metrick 2003; Defond, Hann, and Hu 2005).

(Table 1 about here)

To compute the corporate governance composite measure all governance variables are transformed to a binary scale by allocating a value of one if the individual corporate governance variable is above the sample median and zero otherwise. The fourteen dichotomous variables are summed to produce a governance composite, *GOV*, which has a maximum value of fourteen and a minimum value of zero (Defond et al. 2005). A value of

fourteen indicates strong corporate governance and a value of zero indicates weak corporate governance.

An alternate corporate governance variable, *GOV2*, is also developed to capture more of the richness in the governance indicators. *GOV2* incorporates all governance information in the underlying indicators where as *GOV* discards corporate governance information that is below the median for each indicator. Similar to the initial corporate governance variable, *GOV2* is calculated by combining the fourteen individual corporate governance variables into a single score. However, each corporate governance variable in *GOV2* is scaled between 0 and 10 where 10 represents the highest score a company can achieve. To compute the score of 0 to 10, the value of each individual corporate governance variable is divided by the highest value for that variable and then the result is multiplied by ten. The scores from each of the fourteen variables are then summed together to produce *GOV2* which ranges from 0 to 140 where 140 is the highest total score a company can achieve. As a result, the scale used to calculate *GOV2* captures greater variability in the data thereby reflecting the heterogeneity in the sampled companies.

3.4 Risk Assessment

Risk is captured via default risk and information risk proxy measures based on prior research. Default risk is represented by *ZSCORE* while accruals quality *ACCRL* is a proxy for information risk. Default risk is estimated using multivariate linear discriminant (MLD) analysis to obtain a predicted *ZSCORE* (Altman 1968, 1983) using data from a matched pair of failed and non-failed Australian companies (matched on size, industry and time period). Following the approach established by Altman (1968, 1983), a five factor model is used to estimate the *ZSCORE*. The estimation of *ZSCORE* is shown in equation 1 while the parameter results are presented in Table 2.

$$ZSCORE_i = \beta_0 + \beta_1 WORKCAP_1 + \beta_2 RETEARN_2 + \beta_3 ROA_3 + \beta_4 LEVERAGE_4 + \beta_5 ASSTURN_5 \quad (1)$$

(Table 2 about here)

To enhance clarity the raw *ZSCORE* is transformed by multiplying the estimated score by negative one. The transformed *ZSCORE* ranges from -2.81 to 3.32 with a high *ZSCORE* representing high default risk and a low or negative score representing low default risk.

We use the Dechow and Dichev (2002) accrual quality model, modified by McNichols (2002) and applied in Francis et al. (2005), as a proxy for information risk. To measure accruals quality change in working capital accruals is regressed on past, present and future cash flow from operations as well as change in revenue and the level of property, plant and equipment as shown in the following regression equation:[3]

$$\Delta WCA_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \beta_4 \Delta REV_{i,t} + \beta_5 PPE_{i,t} + \varepsilon_t \quad (2)$$

Where:

$\Delta WCA_{i,t}$ = Change in current assets - change in cash - change in current liabilities + change in short term debt.

$CFO_{i,t}$ = Cash flow from operations for the ith firm in year t.

$\Delta REV_{i,t}$ = Change in revenue for the ith firm in year t.

$PPE_{i,t}$ = Property, plant, and equipment for the ith company for year t.

ε_t = Firm specific residual for the ith company for year t.

Accrual quality *ACCRL* is calculated by taking the standard deviation of the firm-specific residual (error term) from years t to t - 5. A high variation in the errors indicates accruals in the form of working capital changes map poorly into cash flows, sales and assets which

[3] All variables in equation (2) are scaled by average total assets from year t.

implies lower precision and lower quality disclosure. A low standard deviation or *ACCRL* measure signals high quality of accrual and lower information risk.

3.5 Cost of Debt Model

The impact of governance, default risk and information risk on cost of debt is assessed via the cost of debt model shown in equation 3. The model estimates whether cost of debt is explained by corporate governance and the two risk assessment dimensions while controlling for several firm-specific factors. A summary of variables included in the regression models is provided in Table 3.

$$COST_i = \beta_1 + \beta_2 GOV_i + \beta_3 ZSCORE_i + \beta_4 ACCRL_i + \beta_5 AGE_i + \beta_6 COLLT_i + \beta_7 SIZE_i + \beta_8 INDUSTRY_i + e_i \quad (3)$$

(Table 3 about here)

While size is a control variable in equation 3, evidence suggests a more complex relationship. Small companies exhibit higher levels of information and default risks than large companies which impacts unfavourably on their cost of debt (Elfakhani and Zaher 1998; Binks et al. 1992; Lean and Tucker 2001; Brewer 2007; Minton and Schrand 1999). As a result, the informational advantages of corporate governance could potentially provide smaller companies with greater benefits, in terms of increased financial disclosure and lower agency conflicts, relative to larger companies. Consequently, hypothesis five posits that the impact of corporate governance on cost of debt is expected to differ for smaller companies. To test this hypothesis the study introduces governance-size interaction terms to access the influence of governance on debt contracting variables for small and large companies. The first interaction term *GOV_S* is measured by multiplying *GOV* by the small company dummy variable, *SML*. The variable *SML* equals one if the company belongs to the lowest size

quintile and zero otherwise.[4] The second interaction term *GOV_L* is measured by multiplying *GOV* by *LRG* the large company dummy variable. LRG equals one if company is in the upper size quintile and zero otherwise.

4. Results

4.1 Descriptive Statistics

As shown in Table 4, the mean for *COST* for companies in the sample is approximately 8.04%. Small companies pay on average 8.78% for contracted debt while larger companies pay 6.67%. An ANOVA test suggests that smaller companies pay a significantly higher cost of debt relative to other companies. These results are further substantiated by Tukey's Honestly Significant Difference (HSD) post hoc test which indicates that *COST* varies across small and large companies.

(Table 4 about here)

Descriptive statistics for *GOV*, *ZSCORE* and *ACCRL* are also reported in Table 4. The mean for the corporate governance variable, *GOV*, is 9.51 with smaller and larger companies scoring 6.90 and 11.10 respectively. The means for default risk, *ZSCORE*, is -0.01. Smaller companies have a *ZSCORE* of 1.22 while larger companies report a *ZSCORE* of -0.45. Finally, the information risk variable, *ACCRL*, has a mean of 0.45. The mean for *ACCRL* for small and large companies is 0.75 and 0.26 respectively. An ANOVA and Tukey's (HSD) post hoc test suggest that the means for *GOV*, *ZSCORE* and *ACCRL* are statistically different for small and large companies. The descriptive analysis results indicate that smaller companies have higher default risk and information risk and they also implement lower levels of corporate governance in comparison to other companies.

The control variables used in this study. As reported in Table 4, are company *AGE*, level of

[4] Companies are ranked into quintiles based on their total assets where companies in the upper quintile have the highest total assets and companies in the lowest quintile have the lowest total assets.

collateral (*COLLT*), *SIZE* and *INDUSTRY*.[5] Variations across *SIZE* are detected for the three control variables which suggest that smaller companies are younger and have less collateral relative to other companies.

4.2 Default Risk, Information Risk and Cost of Debt

A positive relationship was hypothesised between cost of debt and the two risk assessment dimensions default risk (hypothesis one) and information risk (hypothesis two). Ordinary Least Square (OLS) regression results for hypothesis one, presented in Table 5, show that default risk and cost of debt are positively related at the 1% significance level. This implies that higher levels of default risk increase the cost of debt which is consistent with results from prior studies that find a positive relation between default risk and cost of debt (Bougheas et al. 2006; Denis and Mihov 2003; Byun 2007; Klock et al. 2005; Anderson et al. 2004). Additionally, company size is negatively related to cost of debt at the 1% significance level which suggests that cost of debt decreases as company size increases.

(Table 5 about here)

Hypothesis two stated there would be a positive relationship between information risk and cost of debt. The results, presented in Table 5, support this hypothesis and show that cost of debt positively is related to information risk at the 10% significance level, indicating that high information risk leads to higher cost of debt. Additionally, *ZSCORE* and *SIZE* are negatively related to *COST* at the 1% significance level which suggest that an increase in default risk and a decrease in size result in a higher cost of debt. This finding supports the results obtained by prior studies that examine the association between information risk and cost of debt. Francis et al. (2005) show that an increase in information risk results in a higher

[5] The industry dummy variables were included as a control and the results are available for the authors on request. There are no significant industry effects of note.

cost of capital. Similar results are reported by Lambert et al. (2009) which finds a positive relation between information risk and cost of debt.

However, Gray et al. (2009) show that information risk increases cost of debt but only the innate portion of information risk. The discretionary portion of accruals is not related to cost of debt (Gray et al. 2009). It is arguable that our default risk measure to some extent captures innate risk or at least drivers of innate risk and that any additional explanatory power associated with our *ACCRL* measure captures information risk associated with discretionary accruals. Hence the evidence here suggests that for our sample of companies both the innate and discretionary accrual aspects of information risk are priced in debt contracting.

4.3 Corporate Governance and Risk Assessment

Hypothesis three posits that corporate governance is negatively related to default risk (H3a) and information risks (H3b). Two regression models are estimated to test the relationships between corporate governance and the two risk dimensions as presented in Table 6. The first model relates default risk to corporate governance and it shows that corporate governance is negatively related to default risk at the 5% significance level. This implies that an increase in corporate governance results in a decrease in default risk. Additionally, company size is negatively related to default risk at the 1% significance level which indicates that default risk is also reduced when the size of the company is increased.

(Table 6 about here)

The second model tests the relation between information risk and corporate governance. The results show that information risk is negatively related to corporate governance at the 5% significance level which indicates that an increase in corporate governance results in a reduction in information risk. Furthermore, information risk is negatively related to company

size at the 1% significance level which suggests that information risk increases when company size decreases.

The study supports hypothesis three (H3a and H3b) which state that corporate governance is negatively related to default risk and information risk. Corporate governance mitigates the agency conflict between managers and other stakeholder, and it also increases financial transparency and disclosure, thereby lowering default and information risks. This is consistent with prior US research that finds corporate governance decreases default risk (Bhojraj and Sengupta (2003) and Ashbaugh-Skaife et al. (2006). This is also consistent with the findings of Kent et al. (2008), Strydom (2008) and Strydom et al. (2009) which state that increased corporate governance practices reduce information risk as measured by accrual quality.

4.4 Corporate Governance and Cost of Debt

The fourth hypothesis focuses on the association between corporate governance and cost of debt. The cost of debt model also controls for default risk and information risk and other variable that have been found to impact on the cost of debt. The regression results, presented in Table 7, suggest that a negative relationship exists between cost of debt and corporate governance at the 10% significance level. This indicates that higher levels of corporate governance reduce cost of debt. Furthermore, default risk and company size are negatively related to *COST* at the 1% and 5% significance level which mean that cost of debt increases when default risk is increased and when company size is reduced.

(Table 7 about here)

Earlier results from hypothesis three indicate that corporate governance reduces default and information risk. Additionally, results from testing hypotheses one and two suggest that

default and information risks increase cost of debt respectively. The result from testing hypothesis four indicates that corporate governance reduces the agency conflict and lowers information asymmetry thereby decreasing default risk, information risk and that combined these factors reduce cost of debt. This result is consistent with findings presented by Byun (2007), Ashbaugh-Skaife et al. (2006), Klock et al. (2005), Pitman and Fortin (2004), Anderson et al. (2004), Bhojraj and Sengupta (2003) and Sengupta (1998) which suggest that corporate governance reduces cost of debt.

An alternate corporate governance variable is introduced to test the robustness of the results. As shown in Table 7, the relation between *GOV2* and *COST* remains negative but it is not statistically significant. A possible explanation rests in the calculation of *GOV2*. The alternate corporate governance variable is measured as a score that ranges from 0 and 140. Unlike *GOV* which has a score of 0 to 14, *GOV2* allows for finer gradation in the data and explicitly captures more company specific information including company size. The data support this argument in that *GOV2* and *SIZE* are significantly correlated (ρ = 0.57) at 1% significance level. This supports removing *SIZE* as a control variable from the cost of debt model. As a result, *GOV2* and *COST* become negatively related at the 5% significance level which supports the original finding that increased levels of corporate governance result in a reduction in cost of debt.

4.5 Company Size and Governance-Cost Relationship

Hypothesis five focuses on the relationship between corporate governance and cost of debt for different sized companies. As shown in Table 8, *GOV* and *COST* continue to maintain a significantly negative relation in the presence of size dummies. However, the relation between *GOV_S* and *COST* is not statistically significant. This result indicates that small companies do not benefit from implementing a higher level of corporate governance.

Additionally, the variables *SML* and *LRG* are used as proxies for small and large companies and as presented in Table 8, the relation between *COST* and *SML* is not statistically significant. A sensitivity test is applied by examining an alternate size classification which centres on the Top 300 companies listed on S&P All Ordinaries index in Australia. The Top 300 companies are mandated to implement specific corporate governance practices such as establishing an audit committee which complies with Corporate Governance Practices and reconditions (CGPR) (Australian Securities Exchange (ASX) Corporate Governance Council 2007). As a result, the Top 300 companies are expected to be larger than other company and are perceived to have a higher level of corporate governance structure relative to other companies. The results in Table 8 show *COST* and *TOP300* to be negatively related at the 5% which suggest that larger companies pay a lower cost of debt, when higher levels of corporate governance is implemented, relative to other companies.

(Table 8 about here)

5.0 Conclusion

The research question posed by the study was whether corporate governance impacts on the cost dimension of debt contracting in a market characterised by intermediated debt such as Australia. The results suggest that corporate governance impacts negatively on the default risk and information risk dimensions of risk assessment and that these three factors combine to reduce cost of debt. However the most important finding is that small companies that implement higher levels of corporate governance do not realise debt contracting benefits in the form of lower cost of debt. These results contribute to the accounting literature by providing evidence that supports the positive role of corporate governance in corporate financing within Australia and possibly in other countries that rely heavily on intermediated

debt. Additionally, the results could provide accounting and finance practitioners and regulators with valuable insight into the complex interactions between corporate governance, risk assessment and debt contracting. More importantly the results suggest that the cost of implementing improved governance may bring little benefit, at least in terms of reduced debt contracting costs, for smaller companies. This suggests that mandating a one-size-fits-all approach to governance is possibly sub optimal and that smaller companies may rightly resist increased governance at least in part due to the proportionally lower cost-benefit trade off that result from implementing costly governance requirements.

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Table 1: List of Individual Corporate Governance Variables

Variable Name	Variable Description
INDP	Proportion of non-executive independent directors on the board.
DUAL	One if the CEO is separate from chair of the board, and zero otherwise.
BDSIZE	Number of directors on the board.
BDMEET	Number of board meetings.
NOM	One if the company has a nomination committee, and zero otherwise.
REM	One if company has a remuneration committee, and zero otherwise.
AUDCHRT	One if the company has an audit committee charter, and zero otherwise.
AUDIND	Proportion of non-executive independent members on the audit committee.
AUDEXP	Proportion of audit committee members with accounting and finance qualifications.
AUDSIZE	Number of directors on audit committee.
AUDMEET	Number of audit committee meetings.
AUDITOR	One if the auditor is a Big Four, and zero otherwise.
BLOCK	Percentage of shares owned by investors owning 5 percent or more of the company's shares.
INSIDER	Percentage of company's shares owned by insiders.

Table 2: ZSCORE Model Parameters

Variable	Canonical Discriminant Function Coefficients
Constant	-0.380
$WORKCAP_1$	0.159
$RETEARN_2$	2.049
ROA_3	3.061
$LEVERAGE_4$	-2.912
$ASSTURN_5$	1.091

Notes:
The model was able to correctly classify 82.1% of the original grouped cases. A decomposition of the *ZSCORE* reveals that it is mainly driven by leverage and asset turnover ratios.
$WORKCAP_1$ = Working capital divided by total assets
$RETEARN_2$ = Retained earnings divided by total assets
ROA_3 = Earnings before interest and tax divided by total assets
$LEVERAGE_4$ = Book value of total debt divided by total assets
$ASSTURN_5$ = Sales divided by total assets

Table 3: Summary of Variables Used in the Analysis

Type	Variable	Definition
Dependent Variable	$COST_i$	Weighted average interest rate for firm i.
Explanatory Variables	GOV_i	Corporate governance score which ranges from 0 to 14, where 14 is the highest score a company can achieve.
	$GOV2_i$	Alternate corporate governance score which ranges from 0 to 140, where 140 is the highest score a company can achieve.
	$ZSCORE_i$	Default risk for firm i.
	$ACCRL_i$	Accruals quality for firm i.
	SML_i	1 if the company belongs to the lower size quintile and 0 otherwise.
	LRG_i	1 if the company belongs to the upper size quintile and 0 otherwise.
	GOV_S_i	Corporate governance-size interaction term measured by multiplying GOV by SML.
	GOV_L_i	Corporate governance-size interaction term measured by multiplying GOV by LRG.
Control Variables	AGE_i	Number of years since incorporation for firm i.
	$COLLT_i$	Total fixed assets by total assets for firm i.
	$SIZE_i$	Log of total assets for the firm i.
	$INDUSTRY_i$	1 if the observation falls within the Y - 1 industries that, and 0 otherwise for firm i.

Table 4: Summary Statistics for Variables Used in the Study

Variables	N	Mean	Median	Standard Deviation	Minimum	Maximum
			All Companies			
COST	205	8.04	7.51	2.43	1.05	20.46
GOV	205	9.51	11.00	3.16	1.00	14.00
ZSCORE	205	-0.01	-0.16	1.36	-2.81	3.32
ACCRL	205	0.45	0.29	0.46	0.04	2.50
AGE	205	28.67	23.00	21.18	2.00	124.00
COLLT	205	0.43	0.37	0.31	0.00	1.18
SIZE	205	8.22	8.08	0.97	6.07	10.87
			Small Companies (Lower Quintile)			
COST	41	9.38	8.78	2.72	5.60	19.52
GOV	41	6.90	7.00	3.10	1.00	12.00
ZSCORE	41	1.22	1.38	1.105	-2.35	3.32
ACCRL	41	0.75	0.61	0.53	0.14	2.20
AGE	41	21.56	17.00	17.23	2.00	101.00
COLLT	41	0.37	0.29	0.28	0.00	1.07
SIZE	41	6.99	7.08	0.386	6.07	7.41
			Medium Companies (Middle Quintile)			
COST	41	7.78	7.47	1.63	6.03	15.92
GOV	41	10.34	11.00	2.39	5.00	14.00
ZSCORE	41	-0.13	-0.16	1.40	-2.80	2.77
ACCRL	41	0.36	0.27	0.36	0.07	1.81
AGE	41	24.80	22.00	16.13	10.00	99.00
COLLT	41	0.41	0.37	0.26	0.04	0.94
SIZE	41	8.08	8.08	0.18	7.80	8.43
			Large Companies (Upper Quintile)			
COST	41	6.77	6.67	1.09	4.49	10.84
GOV	41	11.10	12.00	2.90	2.00	14.00
ZSCORE	41	-0.45	-0.45	0.90	-2.04	2.08
ACCRL	41	0.26	0.19	0.26	0.04	1.41
AGE	41	37.02	29.00	26.29	4.00	124.00
COLLT	41	0.45	0.41	0.32	0.00	1.06
SIZE	41	9.69	9.62	0.41	9.14	10.87

Table 5: Relationship between Cost of Debt and Default and Information Risk

Model 1:

$$COST_i = \beta_1 + \beta_2 ZSCORE_i + \beta_3 AGE_i + \beta_4 COLLT_i + \beta_5 SIZE_i + \beta_6 INDUSTRY_i + e_i$$

Model 2:

$$COST_i = \beta_1 + \beta_2 ACCRL_i + \beta_3 AGE_i + \beta_4 COLLT_i + \beta_5 SIZE_i + \beta_6 INDUSTRY_i + e_i$$

Model 3:

$$COST_i = \beta_1 + \beta_2 ZSCORE_i + \beta_3 ACCRL_i + \beta_4 AGE_i + \beta_5 COLLT_i + \beta_6 SIZE_i + \beta_7 INDUSTRY + e_i$$

Variables	Model 1	Model 2	Model 3
Intercept	**13.886*** **	**14.589*** **	**12.488*** **
	(6.704)	(6.749)	(5.643)
ZSCORE	**0.440*** **		**0.408*** **
	(3.453)		(3.181)
ACCRL		**0.824** **	**0.651* **
		(2.169)	(1.733)
AGE	0.001	-0.002	0.0002
	(0.124)	(-0.259)	(-0.027)
COLLT	-0.697	-0.724	-0.613
	(-1.266)	(-1.289)	(-1.115)
SIZE	**-0.647*** **	**-0.724*** **	**-0.542*** **
	(-3.461)	(-3.778)	(-2.765)
Adjusted R^2	**0.183**	**0.152**	**0.191**
N	205	205	205

Notes: ***, **, * Significance at the 1%, 5%, and 10% level, respectively.
This table presents regression results for the relation between the cost of debt and risk assessment (default risk and information risk). Model 1 shows the relation between cost of debt and default risk. Model 2 presents the relation between cost of debt and information risk. Model 3 also assess the relation between cost of debt and information risk, meanwhile controlling for default risk. The regressions include unreported industry dummy variables. The t-values, given in parenthesis below each estimate are corrected for heteroskedasticity.

Table 6: Relationship between Default and Information Risks and Corporate Governance

$$ZSCORE_i = \beta_1 + \beta_2 GOV_i + \beta_3 AGE_i + \beta_4 COLLT_i + \beta_5 SIZE_i + \beta_6 INDUSTRY_i + e_{it}$$

$$ACCRL_i = \beta_1 + \beta_2 GOV_i + \beta_3 AGE_i + \beta_4 COLLT_i + \beta_5 SIZE_i + \beta_6 INDUSTRY_i + e_{it}$$

	ZSCORE	ACCRL
Intercept	**5.906*** **	**2.317*** **
	(5.496)	(4.214)
GOV	**-0.093*** **	**-0.031** **
	(-2.926)	(-2.320)
AGE	-0.004	0.002
	(-0.812)	(1.161)
COLLT	-0.421	-0.173
	(-1.372)	(-1.385)
SIZE	-0.385	**-0.137*** **
	(-3.502)	(-4.269)
Adjusted R^2	**0.207**	**0.156**
N	205	205

Notes:
***, **, * Significance at the 1%, 5%, and 10% level, respectively.
This table presents regression results for the relation between both default risk and information risk and corporate governance. The regressions include unreported industry dummy variables. The t-values, given in parenthesis below each estimate are corrected for heteroskedasticity.

Table 7: Relationship between Corporate Governance and Cost of Debt

Model 1:

$$COST_i = \beta_1 + \beta_2 GOV_i + \beta_3 ZSCORE_i + \beta_4 ACCRL_i + \beta_5 AGE_i + \beta_6 COLLT_i + \beta_7 SIZE_i + \beta_8 INDUSTRY_i + e_i$$

Model 2:

$$COST_i = \beta_1 + \beta_2 GOV2_i + \beta_3 ZSCORE_i + \beta_4 ACCRL_i + \beta_5 AGE_i + \beta_6 COLLT_i + \beta_7 SIZE_i + \beta_8 INDUSTRY_i + e_i$$

Model 3:

$$COST_i = \beta_1 + \beta_2 GOV2_i + \beta_3 ZSCORE_i + \beta_4 ACCRL_i + \beta_5 AGE_i + \beta_6 COLLT_i + \beta_7 INDUSTRY_i + e_i$$

Variables	Model 1	Model 2	Model 3
Intercept	**12.653*** **	**12.297*** **	**8.898*** **
	(5.700)	(5.513)	(6.428)
GOV	**-0.095***		
	(-1.606)		
GOV2		-0.012	**-0.021** **
		(-1.196)	(-2.280)
ZSCORE	**0.370*** **	**0.396*** **	**0.453*** **
	(2.831)	(3.063)	(3.571)
ACCRL	0.546	**0.611***	**0.780** **
	(1.426)	(1.609)	(2.095)
AGE	0.0005	0.001	-0.003
	(0.058)	(0.110)	(-0.316)
COLLT	-0.730	-0.653	-0.603
	(-1.317)	(-1.181)	(-1.085)
SIZE	**-0.433** **	**-0.426***	
	(-2.077)	(-1.934)	
Adjusted R^2	**0.197**	**0.192**	**0.181**
N	205	205	205

Notes: ***, **, * Significance at the 1%, 5%, and 10% level, respectively.
This table presents regression results for two corporate governance – cost of debt models. The first model uses GOV as a proxy for corporate governance while the second model uses GOV2. The third model also uses GOV2 as a proxy for corporate governance, but it excludes company size. The variable GOV2, which ranges from 0 to 140, allows for a high variability in the data. As a result, the alternate corporate governance variable implicitly captures the heterogeneity in companies corresponding to corporate governance and therefore it could act as a proxy for size. Consequently, SIZE is removed from the analysis to test whether GOV2 contributes to explaining the variability in the data. The regressions include unreported industry dummy variables. The t-values, given in parenthesis below each estimate are corrected for heteroskedasticity.

Table 8: Relationship between Corporate Governance and Cost of Debt for Sized Companies

Model 1:

$$COST_i = \beta_1 + \beta_2 GOV_i + \beta_3 GOV_S_i + \beta_4 GOV_L_i + \beta_5 SML_i + \beta_6 LRG_i + \beta_7 ZSCORE_i + \beta_8 ACCRL_i + \beta_9 AGE_i + \beta_{10} COLLT_i + \beta_{11} INDUSTRY + e_i$$

Model 2:

$$COST_i = \beta_1 + \beta_2 GOV_i + \beta_3 ZSCORE_i + \beta_4 ACCRL_i + \beta_5 AGE_i + \beta_6 COLLT_i + \beta_7 TOP300_i + \beta_8 INDUSTRY + e_i$$

Variables	Model 1	Model 2
Intercept	**9.675*** **	**9.464*** **
	(6.499)	(6.716)
GOV	**-0.131***	**-0.116** **
	(-1.706)	(-2.030)
GOV_S	0.128	
	(0.934)	
GOV_L	-0.014	
	(-0.097)	
SML	-0.606	
	(-0.521)	
LRG	-0.832	
	(-0.517)	
ZSCORE	**0.390*** **	**0.374*** **
	(2.873)	(2.841)
ACCRL	0.541	**0.681***
	(1.409)	(1.815)
AGE	0.0001	-0.001
	(0.041)	(-0.175)
COLLT	-0.807	-0.765
	(-1.450)	(-1.372)
TOP300		**-0.678***
		(-1.726)
Adjusted R^2	**0.199**	**0.192**
N	205	205

Notes: ***, **, * Significance at the 1%, 5%, and 10% level, respectively.
This table presents regression results for corporate governance and cost for different sized companies. The first model focuses on the relation between corporate governance and cost of debt in the presence of governance-size interaction terms. The second model tests the relationship between corporate governance and cost of debt in the presence of an alternate size classification which centres on the Top 300 companies listed on S&P All Ordinaries index in Australia. The regressions include unreported industry dummy variables. The t-values, given in parenthesis below each estimate are corrected for heteroskedasticity.