

Information Risk and Cost of Debt in Emerging Markets: Evidence from Qatar

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ABSTRACT

This study examines the impact of information risk on the cost of debt incurred by companies in Qatar, a vital country within the Gulf Co-operation Council (GCC) and Middle East region. The results suggest that information risk impacts debt pricing in Qatar. More specifically, there is a positive relationship between discretionary accruals and the cost of debt. This suggests that management uses discretionary accruals opportunistically to signal information about the company. However, the findings do not show that the cost of debt is affected by non-discretionary accruals. It is important to note that the reported results differ based on company size. Small companies, in particular, show a negative relationship between discretionary accruals and the cost of debt. This might indicate that discretionary accruals are used by these firms to inform about their performance and as a result creditors react by lowering the cost of debt.

Keywords: Cost of Debt, Discretionary Accruals, Emerging Market, Firm Size, Non-Discretionary Accruals

JEL Classification: M40, M41

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1. Introduction

Accounting information which is summarised in general purpose financial reports is essential to various types of decision makers. In order to price their debts, creditors, in particular, rely on this information by evaluating the credit worthiness of potential borrowers. More specifically, they attempt to use the accounting information for the purpose of forecasting borrowers' future cash flows. This is an attempt to gain insight into the borrower's ability to service the debt (Bharath, Sunder, & Sunder, 2008). One of the items considered for this exercise by creditors is information risk, which refers to the variability and precision of accounting information (Easley & O'Hara, 2004; Francis, LaFond, Olsson, & Schipper, 2005; Lambert, Leuz, & Verrecchia, 2007, 2012). An aspect of this risk centers on the notion of accrual accounting, where discretionary accruals are considered as indicators of irregularities in the accounting and reporting processes and thus is perceived as lower quality information. The current study raises the question of whether information risk impacts the cost of debt. Past studies that examine this important relationship (Aldamen & Duncan, 2013; Easley & O'Hara, 2004; Francis et al., 2005; Lambert et al., 2007, 2012) produce conflicting evidence that calls into question whether the information risk-cost of debt interphase is universal across all countries.

One of the most current studies that address this salient relationship is Aldamen and Duncan (2013) who examine companies listed on the Australian Stock Exchange. Their study shows that the cost of debt increases in the presence of higher innate accruals. This finding is consistent with Gray, Koh, and Tong (2009) (conducted in Australia) and Francis et al. (2005) (conducted in the United States) who both find a positive relationship between the cost of debt and innate accruals. However, Aldamen and Duncan (2013) find that discretionary accruals reduce the cost of debt. The rationale for the negative relationship is that discretionary accruals signal performance information which ultimately reduce information risk thereby, lowering the cost of debt (Aldamen & Duncan, 2013). Nevertheless, it is important to stress the fact that most of the prior studies (Aldamen & Duncan, 2013; Easley & O'Hara, 2004; Francis et al., 2005; Lambert et al., 2007, 2012) that examine information risk and the cost of debt were undertaken in developed markets where information asymmetry might be lesser of an issue vis-à-vis other markets. The current study addresses this matter by exploring how information risk and the cost of debt interact in the small but emerging

market of Qatar, home to one of the most rapidly growing markets in the Middle East.¹

This study examines 19 out of the 42 publicly listed companies on the Qatar Stock Exchange for the period between 2007 and 2012, resulting in 104 firm-years. The findings reveal that accounting information plays a role in debt pricing in Qatar. In particular, this study finds that discretionary accruals are positively related to the cost of debt. A possible explanation for this is that management uses discretionary accruals opportunistically in order to manage the company's earnings information. The results, however, do not show the same impact for companies of different sizes. Results for small companies show a negative relationship between discretionary accruals and the cost of debt. This occurrence may be due to the fact that management uses discretionary accruals to signal information about performance and as a result the market reacts by lowering the cost of debt.

The findings from the current study contribute to the ongoing debate about the impact of information risk on cost of debt. A clearer understanding of the topic at hand is rooted in the fact that markets across the globe are different and they seem to have idiosyncrasies that need to be acknowledged. To that effect, a secondary contribution of this study is its focus on an emerging market, which possesses inimitable features that are unparalleled in developed markets. Ebaid (2011) argues that thin and emerging capital markets have fewer listed companies, less matured investors, less efficient processing of information and weaker disclosure requirements. Ali and Hwang (2000) examined the value relevance of accounting information in a number of countries. They find that accounting information is less relevant in countries where borrowing is dominated by bank debt relative to public debt. They also show that countries where private sector bodies are not involved in the standard-setting process, often place lesser importance on accounting information.

Qatar represents a unique country for investigating the relationship between information risk and the cost of debt. It has a market that is grossly understudied mainly because until the mid-1990s, Qatar was not considered a significant player in the region. In the last decade, however, Qatar has emerged to become one of the key economies in the Middle East due to its oil and gas reserves which represent 13

¹ In 2014, MSCI Emerging Markets Index upgraded Qatar's status from a frontier market to an emerging market.

per cent of the world's total (Central Intelligence Agency, 2013). The importance of Qatar as a country is characterised by its growth rate and gross domestic product (GDP) per capita which are listed as among the highest in the world (Central Intelligence Agency, 2013). Nevertheless, the major distinction of the Qatari market rests in its unique financial environment. To date, Qatar has not developed its own accounting standards, nor does it have, in place, a standard-setting entity. Despite the country's economic success, the accounting system lags behind and remains relatively underdeveloped (Al-Khater & Nasser, 2003). Although companies in Qatar are required to adopt internationally approved standards to account for their financial activities (State of Qatar's Ministry of Economy and Commerce, 2002), information about specific accounting practices remains intermittent (Alattar & Al-Khater, 2008). The only exceptions are financial institutions listed on the Qatar Stock Exchange, which are required to specifically implement International Financial Reporting Standards (IFRS) (Dew, Anthony, & Jonathan, 2002).

The way people perceive information that is presented in annual reports in Qatar is perhaps, one of the most important features that separate Qatar from other markets. Alattar and Al-Khater (2008) examine users' views on corporate annual reports in Qatar and find that the cash flow statement is considered more important than the income statement. In their survey on users of accounting information, Alattar and Al-Khater (2008) find that the respondents' preference for liquidity outweighs that of profitability. The current study explores the Qatari market from an angle which deals with the value placed on accounting information with respect to debt pricing. More importantly, the main aim is to shed light on this relatively unfamiliar emerging market by contributing to its exceptionally limited accounting research findings. The remainder of the paper proceeds as follows. Section 2 reviews prior literature and theoretical foundation focusing on the relationship between information risk and the cost of debt. Section 3 describes the research design. Section 4 presents the results of the analyses undertaken in the study and Section 5 discusses the results and concludes.

2. Literature Review and Hypotheses

Risk assessment has always played a significant role in determining the cost of capital. Traditional models such as capital asset pricing model (CAPM), which is used for equity pricing, assume that only systematic

risk should be considered and that other firm-specific risks should be ignored. However, literature has recently turned its attention to other factors such as information asymmetry in an attempt to explain equity pricing (El Ghouli, Guedhami, Pittman, & Saadi, 2013; Habib, 2005; Hughes, Liu, & Liu, 2007). This move suggests that ownership dispersion can result in adverse selection costs which impact the liquidity of firm shares. This situation causes capital to be issued at a discount, thereby increasing the cost of capital. Hughes et al. (2007) examine the relationship between asymmetric information and the cost of capital. They find that when holding total information constant, differences in perception of systematic factors between investors that have varying information, lead to a higher cost of capital. Armstrong, Core, Taylor, and Verrecchia (2011) show that information asymmetry increases the cost of capital when markets are imperfect. In contrast, when markets are perfectly competitive, asymmetrical information has no added effect.

The implications of information asymmetry have been examined in the context of debt pricing. Wittenberg-Moerman (2009) studies the impact of information asymmetry on the cost of debt and maturity in a syndicated loan market. The underlying assumption is that investors demand additional returns to be persuaded to keep investments with high levels of information asymmetry. The results show that higher information asymmetry results in higher interest rates. Furthermore, borrowers who trade loans with high information asymmetry will most likely expect their future loans to have a relatively short maturity period. Easley and O'Hara (2004) examine how variability in information amongst investors impacts the level of required return. The results suggest that investors with less information expect to be compensated with higher returns on their investments and that higher information risk leads to higher cost of capital.

Another aspect of information risk that is becoming particularly important for debt pricing is the quality of the accounting information provided. Lambert et al. (2012) study information risk from the angle of information precision rather than information asymmetry. They examine the relationship between information risk and cost of capital and find that lower information precision increases cost of capital. Aldamen and Duncan (2013) examine the relationship between accruals quality and cost of debt. They split accruals into innate and discretionary components in order to identify the underlying effect that information risk could have on debt pricing. Their results indicate that both innate and discretionary accruals are negatively related to cost of debt. The

finding contrasts with prior studies which find discretionary accruals to be positively related to the cost of debt. Gray et al. (2009) explore the association between accruals quality and the cost of capital in Australia. They find that poor accruals quality increases the cost of debt and equity. Higher levels of accruals quality lead to a lower risk and ultimately, lower cost of capital. Furthermore, when partitioning accruals quality into discretionary and innate components, the results indicate that discretionary accruals and the cost of debt are not associated. However, innate accruals are seen to impact on the cost of debt.

Bharath et al. (2008) examine the role accounting quality plays in debt contracts. They find that accounting quality influences the borrower's decision in using private or public debt for financing. Their results further suggest that borrowers with poor accounting quality tend to incur a higher cost of debt. Lambert et al. (2007) study the influence of accounting information on the cost of capital and they find that the quality of accounting information impacts the company's risk position which then influences its distribution of future cash flows. Francis et al. (2005) examine the impact of accruals quality on the cost of debt in the United States (US). They argue that poor accruals quality firms have higher cost of capital given that accruals quality is a priced risk factor. They also suggest that innate and discretionary accruals have indistinguishable effects on the cost of capital. Their results show that firms with low accruals quality have higher cost of debt. However, discretionary accruals are reported to effect less on the cost of debt.

The current study examines the impact of information risk on the cost of debt in Qatar. It assumes the premise that higher accounting quality provides a clearer view of operational information, thereby reducing information risk. Furthermore, it is posited that the quality of accounting information influences expectations about future payoffs in debt contracting situations (Bharath et al., 2008). In such situations, creditors use accounting information to form expectations about borrowers' future cash flows and their ability to repay the principal and interest on the loans (Bharath et al., 2008). It appears that an increase in information risk leads to heightening variances in expected cash flows which then impacts negatively on the cost of debt (Bharath et al., 2008).

Studies have partitioned information risk into discretionary and non-discretionary components (Dechow & Dichev, 2002; Francis et al., 2005). The discretionary part is the risk resulting from management's accounting choices which are unrelated to the business structure or the operating environment of the firm (Francis et al., 2005; Gray et al., 2009). This ability by the management to influence accounting

information could lead to variability in the level and precision of that information. More specifically, it is assumed that the management is driven by opportunistic motives (Guay, Kothari, & Watts, 1996), which ultimately impact the amount and accuracy of accounting information in a negative way. However, the non-discretionary part of information risk is related to a company's operating and economic environment and they are independent of the management's selection of accounting treatments (Francis et al., 2005). Given the context of the study, the focus is on information risk resulting from the management's choices. Based on the findings of prior studies and the expectation presented in the current study, it is proposed that discretionary accruals influence the cost of debt. The hypothesis is thus stated as follows:

H₁: Higher levels of discretionary accruals increase cost of debt.

The proposed relationship between the cost of debt and discretionary accruals is expected to vary depending on company size. Prior studies highlight the many differences present in large and small companies and how they influence relationships in the business world. Kim, Liu, and Rhee (2003) explore the effect of company size on earnings management. Their study investigates small, medium, and large companies in the US and finds that companies of all sizes engage in earnings management. Company size is significant in explaining the company's motivation behind managing its earnings. Their results also suggest that medium-size to large companies engage in earnings management so as to avoid reporting earning decreases whereas small companies manage their earnings so as to avoid reporting losses. In examining the relationship between corporate governance and debt pricing, Aldamen and Duncan (2012b) find that small companies with higher levels of corporate governance do not experience benefits in terms of lower debt prices.

Smaller firms generally lack high quality information relative to larger firms which reduces transparency and increases information asymmetry (Aldamen, 2010; Binks, Ennew, & Reed, 1992; Brewer, 2007; Elfakhani & Zaher, 1998; Lean & Tucker, 2001). This poor information environment provides disincentive for analysts to follow and report on these companies, thereby perpetuating misinformation and lack of transparency (Aldamen, 2010; Brewer, 2007; Chang, Dasgupta, & Hilary, 2006; Easterday, Sen, & Stephan, 2009). Aldamen and Duncan (2012b) outline additional differences between small and large firms. Firstly,

unlike larger firms, smaller firms face credit bargaining constraints in terms of loan amounts, durations and restructuring. Secondly, smaller firms often have fewer resources to see them through difficult financial periods relative to larger firms. This restriction can exacerbate the probability of default risk for smaller companies thus impacting negatively on their prospects to obtain debts at a reasonable price. The current study also anticipates company size to influence the quality of accounting information. Smaller companies are expected to have greater information asymmetry and lower quality of accruals vis-à-vis larger companies. The size effect on the discretionary accruals-cost of debt interphase is formally stated in the following hypothesis:

H₂: The relationship between discretionary accruals and cost of debt is different for large and small companies.

The following section details the sample selection criteria and research methods used to empirically test the above hypotheses.

3. Research Design

3.1 Sample Selection

The sample for this study consists of listed companies on the Qatar Stock Exchange for the period between year 2007 to year 2012. The exchange has a total of 42 listed companies. However, banking and insurance companies are excluded from the sample due to their financial nature which requires them to approach cost of debt differently than other companies. Upon the exclusion, the final sample stood at 19 companies which are from the service and industrial sectors. After removing missing observations, a total of 104 firm-years are accounted for in the sample. The period between 2007 to 2012 is selected because it includes the period covering the Global Financial Crisis (GFC) which had a profound impact on debt markets worldwide (Bancel & Mittoo, 2011). The time period prior to 2007 is not considered as it would result in excluding many more companies due to survival bias.

To examine whether differences exist among companies varying in sizes, the sample is split into two subsets. The first subset includes 52 firm-years that belong to small firms while the second subset includes 52 firm-years that belong to large firms. To distinguish the firm size, the median of natural log (hereinafter termed "log") of total assets is used to separate the two subsets. Companies with a log of total assets below the

median are classified as small companies whereas companies with log of total assets greater than the median are classified as large companies.

3.2 Cost of debt

In an attempt to calculate the cost of debt, prior studies, particularly those in the US use the difference between the yield to maturity on a debt issue less the yield on US treasury bonds (Anderson, Mansi, & Reeb, 2004; Bhojraj & Sengupta, 2003; Klock, Mansi, & Maxwell, 2005; Sengupta, 1998). Unlike the US, Qatari companies rely more heavily on loans from financial intermediaries rather than issuing debt securities (such as corporate bonds). In that regard, this study assumes that interest expense is the appropriate proxy for the cost of debt rather than the yield to maturity. Following seemingly comparable calculations by Pittman and Fortin (2004) and Piot and Missonier-Piera (2009), the cost of debt is calculated as interest expense divided by average total liabilities. The following is the calculation of cost of debt:

$$COST_{i,t} = \frac{INTEXP_{i,t}}{LIAB_{i,t}}$$

Where:

$INTEXP_{i,t}$ = Interest expense for firm i in year t .

$LIAB_{i,t}$ = Average total liabilities for firm i in year t .

3.3 Information Risk

Information risk is measured as the level of discretionary accruals hereby seen as the difference between total accruals and non-discretionary accruals using a cross sectional version of the modified Jones model (Bartov, Gul, & Tsui, 2000; Dechow, Sloan, & Sweeney, 1995; DeFond & Jiambalvo, 1994; Subramanyam, 1996). The accruals model separates total accruals into discretionary accruals (DACL) and non-discretionary accruals (NDACL). The calculation is performed in two steps. The first step is to estimate an expectation model where non-discretionary accruals are the function of change in revenue and are adjusted for change in accounts receivable and the level of plant, property and equipment. The following is the model used to calculate NDAACL.

$$NDACL_{i,t} = \hat{\beta}_1 [1 / A_{i,t-1}] + \hat{\beta}_2 [(\Delta REV_{i,t} - \Delta REC_{i,t}) / A_{i,t-1}] + \hat{\beta}_3 [PPE_{i,t} / A_{i,t-1}] \quad (1)$$

$$TACL_{i,t} / A_{i,t-1} = \beta_1 [1 / A_{i,t-1}] + \beta_2 [\Delta REV_{i,t} / A_{i,t-1}] + \beta_3 [PPE_{i,t} / A_{i,t-1}] + \varepsilon_{i,t} \quad (2)$$

Where $\hat{\beta}_1$, $\hat{\beta}_2$ and $\hat{\beta}_3$ are fitted coefficients from equation 1. They are produced by using the following model which included all of the 104 firm-years.

Where,

$TACL_{i,t}$ = Total accruals for firm i in year t .

Total accruals are measured as change in current assets - change in cash - change in current liabilities + change in short-term debt + depreciation and amortisation expense.

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

$\Delta REC_{i,t}$ = Change in accounts receivable for firm i in year t .

$A_{i,t-1}$ = Total assets for firm i at the end of the previous year.

$PPE_{i,t}$ = Property, plant, and equipment for firm i in year t .

ε_i = Firm specific residual for firm i in year t .

The second step is to calculate DACL which is measured by the difference between TACL and NDACL. The following equation shows the calculation for DACL.

$$DACL_{i,t} = TACL_{i,t} - NDACL_{i,t}$$

Where,

$DACL_{i,t}$ = Difference between total accruals and non-discretionary accruals for firm i in year t .

3.4 Control Variables

This study, similar to prior literature, controls for the possibility of default risk, leverage, profitability and firm size (Anderson et al., 2004; Ashbaugh-Skaife, Collins, & LaFond, 2006; Pittman & Fortin, 2004). Additionally, since the study focuses on debt pricing before and after

2008, it is also appropriate to explore the impact of the GFC period on the relationship between information risk and cost of debt. Default risk is represented by the times-interest-earned ratio. Companies with high income relative to interest expense can be expected to access higher amounts of debt and borrow at a lower rate. This study measures times-interest-earned as net income divided by interest expense.

Leverage, which represents the variation in the company's capital structure, is expected to impact cost of debt. As companies borrow more, they will most likely pay more interest relative to other companies. Leverage is measured as the ratio of total liabilities to total equity. Profitable companies are expected to better service their debts relative to other companies (Pittman & Fortin, 2004). Thus it is expected that profitability may reduce the cost of debt. To proxy for profitability, this study uses return on assets, measured as net income divided by total assets. Exposure to the GFC is captured by using a categorical variable which equals one if the firm-year is post-GFC period (2009 and after) and zero if otherwise. Firm size is also an important variable that is expected to influence the relationship between discretionary accruals and cost of debt due to credit bargaining and restructuring constraints, as well as availability of financial resource (Aldamen & Duncan, 2012b). Similar to Aldamen and Duncan (2012a), this study measures firm size as the log of total assets.

3.5 Univariate Analysis

One of the objectives of this study is to examine the differences seen in information risk and cost of debt across different sized companies. To achieve this, Analysis of Variance (ANOVA) is employed to check for significant differences in means across small and large companies.

3.6 Multivariate Analysis

This study estimates an ordinary least square (OLS) regression, as seen in Model 1, so as to test the relationship between information risk and the cost of debt. The objective of this estimation is to assess whether or not the cost of debt is influenced by discretionary accruals while controlling for several factors such as default risk, leverage, profitability, exposure to the GFC period and firm size.

To test the robustness of the result, this study employs two additional OLS models. In Model 2, discretionary accruals are replaced with non-discretionary accruals so as to highlight the impact of

discretionary accruals vis-à-vis non-discretionary accruals. In Model 3, both discretionary and non-discretionary accruals are included in the same model in order to control for the impact of non-discretionary accruals on the proposed relationship. The models and variable definitions are as follows:

$$COST_{i,t} = \beta_0 + \beta_1 DACL_{i,t} + \beta_2 TIMES_{i,t} + \beta_3 DTE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 GFC_{i,t} + \beta_6 SIZE_{i,t} + \varepsilon_{i,t} \quad (\text{Model 1})$$

$$COST_{i,t} = \beta_0 + \beta_1 NDACL_{i,t} + \beta_2 TIMES_{i,t} + \beta_3 DTE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 GFC_{i,t} + \beta_6 SIZE_{i,t} + \varepsilon_{i,t} \quad (\text{Model 2})$$

$$COST_{i,t} = \beta_0 + \beta_1 DACL_{i,t} + \beta_2 NDACL_{i,t} + \beta_3 TIMES_{i,t} + \beta_4 DTE_{i,t} + \beta_5 ROA_{i,t} + \beta_6 GFC_{i,t} + \beta_7 SIZE_{i,t} + \varepsilon_{i,t} \quad (\text{Model 3})$$

Where,

- $COST_{i,t}$: Cost of debt for firm i in year t .
- $DACL_{i,t}$: Discretionary accruals for firm i in year t .
- $NDACL_{i,t}$: Non-discretionary accruals for firm i in year t .
- $TIMES_{i,t}$: Times-interest-earned ratio for firm i in year t .
- $DTE_{i,t}$: Debt to equity ratio for firm i in year t .
- $ROA_{i,t}$: Net income divided by total assets for firm i in year t .
- $GFC_{i,t}$: One if the t period for firm i is 2009 and above, and zero if otherwise.
- $SIZE_{i,t}$: Natural log of total assets for firm i in year t .

To examine whether the relationship between discretionary accruals and the cost of debt is different across small and large companies, this study uses the regression Models (1), (2) and (3). However, since the sample is partitioned based on size, the models do not include firm size as a control variable.

4. Results

4.1 Descriptive Statistics

Descriptive statistics for all companies in the sample are presented in Panel A, Table 1. As shown in the table, cost of debt has a mean of 2.5

per cent with the maximum percentage of 8.8 per cent. This measure captures the relative cost of debt which different companies incur but it does not reflect the actual interest rate. The results also show that the average for discretionary accruals is -0.009 while the average for non-discretionary accruals is 0.001.

Table 1: Descriptive Statistics

	N	Mean	Median	Std. Deviation	Minimum	Maximum
Panel A: All Firms						
<i>COST</i>	104	0.025	0.019	0.019	0.000	0.088
<i>DACL</i>	104	-0.009	0.010	0.381	-2.312	1.000
<i>NDACL</i>	104	0.001	0.000	0.008	-0.020	0.049
<i>TIMES</i>	104	20.791	14.382	24.292	-4.396	100.000
<i>DTE</i>	104	2.783	0.776	5.369	0.067	28.248
<i>ROA</i>	104	0.075	0.057	0.060	-0.043	0.262
<i>GFC</i>	104	0.702	1.000	0.460	0.000	1.000
<i>SIZE</i>	104	8.240	8.372	1.105	6.003	9.923
Panel B: Small Firms						
<i>COST</i>	52	0.023	0.018	0.016	0.000	0.059
<i>DACL</i>	52	0.057	0.010	0.226	-0.559	1.000
<i>NDACL</i>	52	0.003	0.000	0.011	-0.010	0.049
<i>TIMES</i>	52	16.246	9.972	18.929	-1.768	85.977
<i>DTE</i>	52	2.205	0.937	3.863	0.098	20.457
<i>ROA</i>	52	0.073	0.057	0.063	-0.043	0.262
<i>GFC</i>	52	0.750	1.000	0.437	0.000	1.000
<i>SIZE</i>	52	7.260	7.347	0.591	6.003	8.368
Panel C: Large Firms						
<i>COST</i>	52	0.027	0.022	0.022	0.000	0.088
<i>DACL</i>	52	-0.076	0.011	0.483	-2.312	0.636
<i>NDACL</i>	52	-0.001	0.000	0.004	-0.020	0.006
<i>TIMES</i>	52	25.335	16.064	28.130	-4.396	100.000
<i>DTE</i>	52	3.361	0.670	6.528	0.067	28.248
<i>ROA</i>	52	0.077	0.064	0.058	-0.037	0.179
<i>GFC</i>	52	0.654	1.000	0.480	0.000	1.000
<i>SIZE</i>	52	9.220	9.255	0.397	8.375	9.923

Notes: *COST* = Cost of debt, *DACL* = Discretionary accruals, *NDACL* = Non-discretionary accruals, *TIMES* = Times-interest-earned ratio, *DTE* = Debt to equity ratio, *ROA* = Return on assets ratio, *GFC* = One if the *t* period of the firm is 2009 and above, and zero if otherwise (since *GFC* is a categorical variable, the mean in this table represents the ratio of the periods above 2009 to other periods), *SIZE* = firm size.

Statistics for the control variables are also shown in Table 1. Mean times-interest-earned for the sampled companies is almost 21, which indicates that the net income covers interest expense 21 times. As for the ratio of debt to equity, the descriptive statistics show it to be 2.783 which suggests that, on average, Qatari companies rely more on debt capital than on equity capital to finance their operations. The return on asset ratio is shown to be around 7.5 per cent which suggests that, on average, Qatari companies can be considered relatively profitable. The dichotomous variable, GFC, shows that 70 per cent of all data points are between the period 2009-2012. This indicates that the majority of firm-year information comes from the post GFC period. Finally, the results show that the mean for the log of total assets is 8.240.

Table 2: Differences in Variables Based on Size

Variable	Firm Size	Mean	Std. Deviation	ANOVA
				F
<i>COST</i>	Small	0.023	0.016	1.558
	Large	0.027	0.022	
	All	0.025	0.019	
<i>DACL</i>	Small	0.057	0.226	3.235*
	Large	-0.076	0.483	
	All	-0.009	0.381	
<i>NDACL</i>	Small	0.003	0.011	3.882**
	Large	-0.001	0.004	
	All	0.001	0.008	
<i>TIMES</i>	Small	16.246	18.929	3.736*
	Large	25.335	28.130	
	All	20.791	24.292	
<i>DTE</i>	Small	2.205	3.863	1.209
	Large	3.361	6.528	
	All	2.783	5.369	
<i>ROA</i>	Small	0.073	0.063	0.148
	Large	0.077	0.058	
	All	0.075	0.060	
<i>GFC</i>	Small	0.750	0.437	1.139
	Large	0.654	0.480	
	All	0.702	0.460	

Notes: ***, **, and * denote significance at the 1%, 5% and 10% levels respectively.

Small = Companies with log of total assets that are below the median.

Large = Companies with log of total assets that are greater than the median

Refer to the notes in Table 1 for definition of variables.

Panels B and C in Table 1 present the descriptive statistics from small and large companies respectively. Cost of debt for small companies is 0.023 while for large companies it is 0.027. However, the ANOVA results presented in Table 2 suggest that the differences in cost of debt between small and large companies are not statistically significant. The results also show that discretionary accruals are lower for larger firms relative to smaller firms. ANOVA results also indicate that these differences are significant but only at the 10 per cent level. In fact, the other two variables which exhibit statistically significant differences between the size subsets are non-discretionary accruals and times-interest-earned. Larger companies have lower non-discretionary accruals than their smaller counterparts, with differences which are significant at the 5 per cent level. In addition larger firms have greater times-interest-earned ratio vis-à-vis smaller firms. It is important to note that this difference is significant only at the 10 per cent level.

4.2 Regression Results

Since the primary model estimated in this study is OLS regression, the various regression assumptions are tested to ensure the validity of the results. A major concern is whether the error terms are normally distributed. The Jarque-Bera normality test suggests that the assumption of normality cannot be rejected. The second concern is the presence of serial correlation especially due to the times-series nature of the data. This study uses Breusch-Godfrey Serial Correlation LM Test and it shows that serial correlation is a major problem which requires adjustment before further analysis can be undertaken. The data is thus adjusted by using Newey-West fixed heteroscedasticity and autocorrelation consistent (HAC) standard errors. White's heteroscedasticity test is conducted and it shows no indication of heteroscedasticity. For the purpose of inspecting the likelihood of multicollinearity, the variance inflation factors (VIF) for the different variables are examined. The results show that no particular variable has a VIF of over 2.5. This implies that multicollinearity is not an issue.

The OLS regression results for the relationship between information risk and cost of debt are reported in Table 3. Results for all 104 firm-years are indicated under "ALL", the 52 firm-years that represent small companies are indicated under "SMALL", and the 52 firm-years that represent large companies are indicated under "LARGE". The results for Model 1 under "ALL" show that the coefficient for discretionary

accruals is positive at 1 per cent significance level. This in fact proposes a positive relationship between discretionary accruals and cost of debt, a finding, which is in line with Francis et al. (2005). However, it contradicts Aldamen and Duncan (2013) who show that discretionary accruals decrease cost of debt, and with Gray et al. (2009) who find no relationship between discretionary accruals and cost of debt variables. Results under Model 2 for "ALL" companies indicate that the coefficient for non-discretionary accruals is not significantly related to cost of debt. This finding suggests that information risk which is inherently found in a company's business model does not influence the pricing of debt. This result is contradictory to the findings reported by Gray et al. (2009) and Francis et al. (2005) who show that innate accruals quality lowers cost of debt. Finally, the results shown in Model 3, under "ALL" indicate that positive relationship between discretionary accruals and cost of debt persists even when controlling for non-discretionary accruals. Overall, the results shown in Models 1 and 3 support the hypothesis presented earlier which states that a positive relationship exists between information risk and the cost of debt.

The control variables for the three models under "ALL" offer a unique insight into their relationship with cost of debt. The variable, *TIMES*, is negatively related to cost of debt at the 1 per cent significance level in all the three models. This suggests that an increase in interest coverage is met with lower cost of debt. Furthermore, the variable, *SIZE*, is positively related to cost of debt at the 5 per cent significance level as shown in all three models. This finding corresponds to the slight difference in cost of debt shown in the descriptive statistics for large and small companies. Additionally, the *GFC* variable is negatively related to cost of debt. However, the significance of this relationship is at the 5 per cent significance level for Model 1 and at the 10 per cent significance level for Models 2 and 3. This suggests that cost of debt is lower for the period following 2009, or post-GFC. The *DTE* and *ROA* variables register a positive relationship with cost of debt at the significance level of 10 per cent.

The OLS regression results for the different size subsets are also presented in Table 3 under "SMALL" and "LARGE". The overall results for large companies are very similar to those reported for the entire sample. Discretionary accruals continue to be positively related to cost of debt, which suggests that cost of debt, for large companies, increases in the event of an increase in information risk. However, the results are different for small companies. In Model 1, the coefficient

Table 3: Relationship between Information Risk and Cost of Debt

Variables	Expected Sign	ALL								
		SMALL			LARGE					
		MODEL 1	MODEL 2	MODEL 3	MODEL 1	MODEL 2	MODEL 3	MODEL 1	MODEL 2	MODEL 3
DACL	+	0.180 (2.875)***	0.080 (0.637)	0.187 (2.941)***	-0.157 (-1.912)*	-0.211 (-3.534)***	0.319 (2.440)**	0.278 (2.090)**		
NDACL	+			0.092 (0.793)		0.382 (2.740)***		-0.150 (-1.358)		
TIMES	-	-0.554 (-5.910)***	-0.586 (-5.642)***	-0.534 (-5.686)***	-0.588 (-3.353)***	-0.435 (-2.672)***	-0.524 (-4.257)***	-0.645 (-5.386)***	-0.552 (-4.463)***	
DTE	+	0.197 (1.792)*	0.129 (0.986)	0.198 (1.753)*	0.193 (1.765)*	0.232 (2.158)**	0.248 (2.038)**	0.141 (1.270)	0.258 (2.134)**	
ROA	-	0.197 (1.906)*	0.234 (2.076)**	0.184 (1.758)*	0.142 (0.824)	0.025 (0.142)	0.261 (2.074)**	0.364 (3.038)***	0.266 (2.135)**	
GFC	+	-0.194 (-2.133)**	-0.171 (-1.723)*	-0.178 (-1.809)*	-0.004 (-0.033)	0.107 (0.977)	-0.303 (-2.873)***	-0.310 (-2.862)***	-0.309 (-2.954)***	
SIZE	-	0.222 (2.381)**	0.232 (2.365)**	0.242 (2.500)**						
N		104	104	104	52	52	52	52	52	
Adj. R ²		0.340	0.320	0.342	0.316	0.433	0.437	0.407	0.447	
F-Stat		9.858	9.073	8.632	5.702	7.503	8.916	7.990	7.874	

Notes: ***, **, and * denote significance at the 1%, 5% and 10% levels respectively. Coefficients reported with t-values below. Model 1, 2 and 3 differ in terms of the information risk variables. Model 1 includes discretionary accruals, Model 2 includes non-discretionary accruals, Model 3 includes both discretionary and non-discretionary accruals. The Jarque-Bera normality test suggests that assumption of normality cannot be rejected. The data were adjusted for heteroscedasticity and autocorrelation consistent (HAC) standard errors using Newey-West technique. The Variance Inflation factor (VIF) estimation suggests that the data does not suffer from multicollinearity. Refer to the notes in Table 1 for definition of variables.

for discretionary accruals variable is negative and significant at the 10 per cent level, which suggests a slightly negative relationship between discretionary accruals and cost of debt. Although this contradicts the findings of Aldamen and Duncan (2013), the significance of the relationship that is reported in Table 3 is very weak. Interestingly, the relationship between non-discretionary accruals and cost of debt under "SMALL", as shown in Model 2, is positive and significant at the 1 per cent significance level. This result also persists in Model 3 when both discretionary accruals and non-discretionary accruals are used.

The relationship between the control variables and cost of debt for the different models under "SMALL" and "LARGE" do not differ greatly from those reported under "ALL". The coefficient signs remained constant but the significance levels changed. It is clear from Table 3 that TIMES remains negatively related to cost of debt under all models for the different sized companies. Furthermore, the relationship is significant at the 1 per cent significance level. Although the variable DTE is largely insignificant under "ALL", its relationship with cost of debt becomes more evident under "LARGE" where it is positive at the 5 per cent significance level. It is important to note that while the significance level for the relationship between cost of debt and the control variables ROA and GFC increases under "LARGE", it disappears completely under "SMALL".

Similar to the findings of Kim et al. (2003), the results of this study support the expected differences between small and large firms. In small firms, cost of debt is negatively related to discretionary accruals but positively related to non-discretionary accruals. As a result, the second hypothesis which states that differences exist in the relationship between information risk and cost of debt for different sized companies is supported.

5. Discussion and Conclusion

This study examines the impact of information risk on the cost of debt in companies based in Qatar which is a vital country within the Gulf Cooperation Council and Middle East region. The premise of this study states that higher accounting quality provides a clearer view of operational information, thereby reducing information risk. It is also posited that cost of debt is sensitive to varying types of risk, one of which is information risk. This study proposes that cost of debt increases in the presence of information risk, thus making quality of

accounting information an important element in debt pricing. Although the relationship between information risk and cost of debt has been investigated in past studies, it is argued that the location in which the current study is undertaken is extremely critical due to the unprecedented economic growth which Qatar has witnessed in the last decade. Nonetheless, what is more important is the nature of the Qatari market which exhibits distinct differences as compared to developed markets. The findings of this study which focuses on 19 service and industrial companies for the period between 2007 to 2012, suggest that information risk, proxied by accruals quality, impacts debt pricing in Qatar.

In accordance with the hypothesis that there is a positive relationship between discretionary accruals and the cost of debt, the findings of this study show that an increase in discretionary accruals contributes to rising cost of debt. A possible explanation for this lies with the description of discretionary accruals as provided by Guay et al. (1996). They propose that discretionary accruals include both performance and opportunistic elements. The former stresses on the positive role which discretionary accruals play in conveying information to the market. Prior studies that examine the performance enhancing aspects of earnings management suggest that companies tend to provide private information to stakeholders in an effort to improve communications between management and all other parties (Jiraporn, Miller, Yoon, & Kim, 2008; Lin, 2011; Siregar & Utama, 2008). The opportunistic element is the element most often associated with information risk. It influences the level of information that different stakeholders possess, thus increasing information asymmetry (Aldamen & Duncan, 2013; Guay et al., 1996). The findings of this study support the opportunistic element of discretionary accruals which implies that markets react adversely to an increase in discretionary accruals, thereby requiring a higher price for the debt.

A central motivation for this study is the conflicting international evidence regarding information risk and cost of debt. The results of this study support Francis et al. (2005) who show that discretionary accruals increase cost of debt in companies located in the US. It is important to note that in the US, public debt is the predominant debt financing approach (Aldamen, 2010) while in Qatar only private debt is available. Nevertheless, the impact of discretionary accruals on cost of debt seems to be similar across the two distinctly different markets. The findings of this study contradict the results of Aldamen and Duncan (2013) who show that in an Australian setting, discretionary accruals lower cost of

debt. Although both this study and Aldamen and Duncan (2013) examine markets that obtain debt capital through financial intermediaries rather than public debt (Aldamen, 2010), obvious differences between the Australian and Qatari markets persist.

The results of this study also show that the relationship between information risk and cost of debt is different for small companies as compared to large companies. Unlike the reported results for the entire sample, discretionary accruals are negatively related to cost of debt for small companies. Prior studies suggest that discretionary accruals could be related to management manipulation, especially in a situation that could lead to a violation of debt contracts (Hakim & Zeghal, 2006). The initial prediction of this study is that small companies use discretionary accruals opportunistically. This prediction is, in part, motivated by the overall poor information environment found in small firms that encourages the perpetuation of opportunistic behaviour by management and leads to further deterioration in information quality. However, the results of this study display the existence of a different situation, especially when it comes to controlling for non-discretionary accruals. According to the accruals classification discussed by Guay et al. (1996), certain companies use discretionary accruals to express positive aspects of the company. It is possible that small firms use discretionary accruals to disseminate private information to the market and in turn, the market lowers the cost of debt that is required by these companies.

Granted that these findings contribute to the ongoing debate about information risk and cost of debt, the ultimate direction of the relationship under examination, as shown in the current and prior studies, remains unresolved. It is important to note that the unique contribution of this study is the fact that it focuses on a rarely examined emerging market that possesses certain characteristics seldom found in developed market. In Qatar, the financial reports of all firms listed on the stock exchange suggest that the firms obtain debt capital from financial intermediaries such as banks. Although publicly listed companies in developed economies also seek private borrowing, the majority of them are relatively small in size (Berger & Udell, 1995). This type of borrowing allows for a special relationship to develop between borrowers and lenders that is otherwise known as relationship lending (Berger & Udell, 2002; Ogura & Yamori, 2010; Petersen & Rajan, 1994). Through this unique relationship, banks are allowed access to the borrowers' private information that is often unavailable in financial statements (Bhattacharya & Chiesa, 1995; Yosha, 1995). From a debt contracting

stand point, banks and other financial intermediaries are able to obtain sufficient information about the borrower's ability to service the debt (Berger & Udell, 1995, 2002). Petersen and Rajan (1994) suggest that firms which have a close relationship with their lenders tend to have greater access to funds, thereby incurring lower cost of debt.

In a Middle Eastern emerging market such as Qatar's where there are only 42 listed companies which operate within a relatively weak financial infrastructure and regulatory framework (Pedrosa-Garcia, 2013), other factors such as relationship lending can impact significantly on all facets of debt contracting. Rocha, Farazi, Khouri, and Pearce (2011) find that countries in the Middle East and North Africa (MENA) region, with weak financial infrastructure tend to rely on relationship lending to reduce information asymmetries. Emine (2012) examines the development of small and medium enterprises (SMEs) in the Arab region and finds that SMEs have made significant improvements in their borrowing practices but they still rely on relationship lending to access debt capital. Based on the results of the current study and the implicit importance given to relationship lending by prior studies, it is recommended that future research examines relationship lending within a debt contracting context in Qatar.

This study's examination of information risk and cost of debt is beneficial for academics and practitioners alike. As noted earlier, the Qatari market is relatively unknown and grossly understudied. The lack of academic research projects in accounting related topics in Qatar can adversely impact the advancement of the accounting profession. This is particularly so, when a well-developed accounting system is lacking. Practitioners, on the other side of debt contracts are surely interested in the drivers of debt pricing in the Qatari emerging market. Auditors, financial accountants and regulators should also take cognisance that the results of this study suggest that accounting quality plays an important role in determining cost of debt. In addition, the results clearly show that accounting information impacts on small and large firms differently.

This study is limited by two interlinked factors. Firstly, the small sample size used in the analysis might impact the validity of the results. This concern is compounded by the fact that prior studies that examine accruals quality and the cost of debt use significantly greater sample sizes relative to that of the current study's. Secondly, the disclosed information listed in the sampled companies' financial reports does not provide ample details about the nature or cost of debt information besides interest or finance cost. This disclosure constraint, in terms

of the nature and breakdown of certain liabilities, impedes the use of more rigorous cost of debt measures which are similar to the one used by Aldamen and Duncan (2013). It is important to note that the two limiting factors are intrinsically linked to small emerging markets which often have a limited number of listed firms and tend to have somewhat modest disclosure regimes. Nevertheless, an understanding of emerging markets, with all of the concerns and limitations that come with that undertaking, is worthwhile as it provides insights into countries and markets which are rarely studied. In other words, the results help in advancing the collective knowledge of global accounting practices and implications.

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