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Corporate governance mechanisms and cost of debt

Evidence of family and non-family firms in Oman

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Abstract

Purpose – The purpose of this study is to determine whether there is any difference in the association among the board of directors, audit committee effectiveness and the cost of debt between the family- and non-family-owned companies in the Sultanate of Oman.

Design/methodology/approach – This study uses a panel data set that has multiple observations on the same economic units. Each element has two subscripts: the group identifier, *i* (68 companies listed on the Muscat Securities Market), and within the group index denoted by *t*, which identifies time (2005-2011). The regression model of this study is based on the random effects model, which, according to the Hausman and Breusch-Pagan (LM) (Breusch and Pagan, 1980) tests, is an appropriate model.

Findings – This study finds that the association between a board of directors' effectiveness and cost of debt is negative and significant for the full sample and non-family firms. This relationship, however, is weak and not significant for family firms. Additionally, this study indicates that audit committee effectiveness has a significant effect on the cost of debt based on the full sample and family firms, but is not significant for non-family firms.

Originality/value – This study examines firms in the Sultanate of Oman, where family ownership control is common. Based on a framework conceptualized according to the agency theory, using data from Oman enables a comparison between family and non-family firms with respect to the effect of the board of directors' and audit committee's characteristics as a composite measure. This composite measure captures their combined effect on the propensity of the cost of debt.

Keywords Oman, Cost of debt, Board of directors' and audit committee effectiveness, Family and non-family firms

Paper type Research paper

1. Introduction

Family firms constitute the most fundamental business form of organizational structure in both developed and developing countries. Several studies have identified the difference between these countries in holding family firms; for instance, using 27 countries from around the world, *La Porta et al. (1999)* find that family firms are the most common type of economic organization in these countries. In a study of 675 firms listed in 11 European countries, *Barontini and Caprio (2006)* find that the firms controlled by families account for 53 per cent of the sampled companies. In a study of 403 companies among the S&P 500 industries in the USA (USA), *Anderson et al. (2003a)* determine that more than one-third of these companies are family firms. Of 2,980 listed companies in nine countries in East Asia, *Claessens et al. (2000)* claim that companies controlled by



families account for 66 per cent of the companies studied. In addition, of 304 listed companies in four Arab countries, *Omran et al. (2008)* find that the firms controlled by families account for 68 per cent of the sampled companies.

Although family-owned corporations have a considerable presence among publicly traded corporations, family-owned firms are different from non-family firms. According to the agency theory, family owners expend more effort to monitor managers than other types of large shareholder. This suggests that as compared to non-family companies, the Type I agency problem (manager-owner) may be less prevalent in family firms, due to less information asymmetry existing among manager-owners (*Anderson et al., 2004*). However, the Type II agency problem is perceived to be more severe in family firms because family owners may have both the incentive and the ability to extract private benefits at the expense of minority shareholders, which is harmful to firm value (*Cheung et al., 2006*).

In addition, ownership and control in family firms are not separated. In other words, family owned firms have both a large share of equity and a large share of executives in their companies. In non-family firms, ownership is dispersed among small shareholders, and the monitoring role is concentrated among professional managers. Consequently, this difference has led to different styles of management, levels of motivation among the founders, family values and decision-making processes (*Daily and Dollinger, 1992; Chua et al., 2003*). Therefore, based on the difference between family- and non-family-owned firms with Type I and Type II agency problems, and the difference in ownership and control, the influence of the board of directors' and audit committee effectiveness on the cost of debt is expected to be different for family and non-family firms.

Corporate governance is one of the key factors that determine the health of a firm's system and its ability to survive economic shocks. Therefore, good corporate governance contributes to sustainable economic development by enhancing the performance of companies and increasing their access to outside capital (*Sarbah and Xiao, 2015*). Although various management issues in family firms have been analyzed, there are still aspects left for research. Important issues that remain include the relationship between family control and corporate governance structures and the influence of generation on these governance mechanisms (*Duller, 2012*).

Bhojraj and Sengupta (2003) argue that corporate governance mechanisms are a way to protect shareholders' interests, such as in obtaining external funds at a lower cost. Several studies on the cost of debt have empirically linked, though with mixed results, the cost of debt with the individual characteristics of corporate governance mechanisms (*Bhojraj and Sengupta, 2003; Anderson et al., 2004; Piot et al., 2007; Ertugrul and Hegde, 2008; Fields et al., 2010; Lorca et al., 2011*). This approach has been criticised by recent corporate governance literature for its lack of coverage concerning the quality of corporate governance mechanisms (*Fallatah and Dickins, 2012; Ramly, 2013*). The composite measure of corporate governance mechanisms is seen as being preferable to reduce agency costs and protect the interests of all shareholders. For example, *Ward et al. (2009)* indicate that the reason prior research finds somewhat mixed results is that these studies look at individual governance mechanisms in isolation when addressing agency problems. They ignore the idea that the effectiveness of a single mechanism depends on the effectiveness of other mechanisms as a part of interdependency.

In addition, the effectiveness of corporate governance mechanisms depends on the institutional structure of companies and countries, such as ownership structure (*Young*

et al., 2008). For example, in companies that are owned or controlled by large shareholders, even with an effective board of directors, the cost of debt cannot be reduced (Bhojraj and Sengupta, 2003) because the board members may be appointed as a kind of legal fiction (Kosnik, 1987). Bennett *et al.* (2003) indicate that different concentrations in ownership have different abilities to monitor the management team and protect the interests of minority shareholders, because there is a disparity in the monitoring costs incurred and the incompatible monitoring power held by different types of controlling shareholder.

The present study considers the business environment in the Sultanate of Oman, which is characterized by the absence of a well-developed bond market and a phenomenally high cost of borrowing by international standards (Rao *et al.*, 2007). Furthermore, the financial markets in Oman remain less developed, and the regulations and corporate control are still weak (Chahine and Tohme, 2009). In addition, firms in the Sultanate of Oman are characterized by high rates of private and individual ownership coupled with weak legal protection of minority shareholders (Omran *et al.*, 2008). Within this weak regulatory framework, the role, structure and composition of the board of directors and audit committee varies between family businesses and non-family businesses. Thus, the influence of the board of directors' and audit committee effectiveness on the cost of debt is expected to be different for family and non-family firms.

We contribute to the literature by extending the scope of previous studies concerning the cost of debt by considering the business environment in the Sultanate of Oman, where family ownership and control are more common. Additionally, this study contributes by considering the effect of the characteristics of the board of directors and audit committee (independence, size, meetings, directorships and expertise) as a composite measure to capture the combined effect of these features on the propensity of the cost of debt based on a framework conceptualized according to the agency theory. Finally, based on the difference between family- and non-family-owned firms with Type I and Type II agency problems, and the difference in ownership and control, this study further contributes to the literature by examining the influence of the board of directors' and audit committee effectiveness on the cost of debt, which is expected to be different for family and non-family firms.

This study uses panel data for companies listed on the Muscat Securities Market for the period 2005-2011. The study finds that the association between board of directors' effectiveness and cost of debt is negative and significant for the full sample and non-family firms, while this relationship is not significant for family firms. Additionally, this study indicates that there is a significant negative association between audit committee effectiveness and the cost of debt based on the full sample and family firms.

2. Previous literature

2.1 Corporate governance mechanisms

The importance of good corporate governance for improving the competitiveness of the capital market sector and attracting foreign investors to the local market has been increasingly recognised by the Omani Government (Al-Busaidi, 2008), thereby achieving better corporate performance and enhancing a better relationship with all stakeholders (Shankaraiah and Rao, 2004). In 2001, the Capital Market Authority (CMA) of Oman issued the code of corporate governance. As a result, Oman was the first

country in the Gulf Cooperation Council (GCC) to have issued a code of corporate governance, which was fully implemented by Omani listed companies in 2004. The code sets out the mechanisms for the composition and functions of the board of directors, audit committee, external auditors, internal control, related party transactions, corporate governance report and executive management (*Corporate Governance Code and Principles-Oman, 2002*).

Corporate governance mechanisms have been identified in previous studies (*Bhojraj and Sengupta, 2003; Abor, 2007*) as influencing the capital structure decisions of firms. According to *Piot et al. (2007)*, the main difference between debt and equity is that debtholders have no effective control over the use of the funds provided. These funds may be diverted from their original purpose by the managers of companies, many of whom are opportunistic in serving their own interests or those of shareholders (conflict between managers and stakeholders). Selfish managerial behaviour can take many forms, including shirking, consumption of perquisites, overcompensation and empire building. These behaviours increase the risks faced by external agencies and stakeholders and diminish the expected value of the cash flows of the company and its external stakeholders.

A conflict of interest also arises from the inconsistency between the controlling and non-controlling shareholders (conflict between majority and minority shareholders). This type of agency problem actually appears in companies with high family ownership. According to *Ali et al. (2007)*, in countries where there is a lack of protection for minority shareholders, the agency problem in companies with high family ownership is no longer the problem between the management and owner but one between larger shareholders and smaller shareholders. The other type of conflict arises between shareholders and debtholders. For example, shareholders may confiscate wealth from debtholders by undertaking risky new projects that will allow them to capture most of the gains, while debtholders bear most of the cost (*Jensen and Meckling, 1976*).

Accordingly, family-controlled firms are likely to face different agency problems from those of non-family-controlled firms. The phenomenon of family ownership concentration results in two distinct groups of shareholders, that is, majority and minority shareholders. As a result of these two groups of shareholders, family-controlled firms are more likely to suffer from the Type II agency problem (conflict between majority and minority shareholders) than the Type I agency problem (conflict between managers and shareholders) (*Anderson et al., 2004*). Controlling shareholders have an opportunity to maximize their private benefits by expropriating minority shareholders (*Cheung et al., 2006*). Thus, some managerial actions in family-controlled firms may not be in the best interests of outside (minority) shareholders.

As these agency costs increase, the premium that debtholders require increases (*Pittman and Fortin, 2004*). *Bhojraj and Sengupta (2003)* and *Byun (2007)* contend that the quality of corporate governance systems in firms can result in a lower cost of debt capital, through a reduction in the risk of default due to reduced agency problems and better monitoring of management actions. In addition, higher corporate governance quality in companies leads to enhancing the quality of their financial reporting, transparency and disclosure of accounting information, which lowers the required rate of return demanded by debtholders (*Ashbaugh-Skaife et al., 2006; Sengupta, 1998*;

Aldamen and Duncan, 2012). Therefore, the role of the board of directors and audit committee, as the main internal mechanism of corporate governance, is important to provide the key monitoring of these agency costs, as discussed below.

2.1.1 Board of directors, family firms and cost of debt. Lefort and Urzua (2008) indicate that the board of directors is an essential internal governance mechanism that provides the main control over agency costs and deals with the problems relating to the management of the organization. The role of the board is to improve firm efficiency in such a way that both creditors and shareholders will benefit, thereby reducing the cost of loans and/or their covenant requirements (Fields *et al.*, 2010; Lorca *et al.*, 2011). Specifically, board quality leads to the validity of accounting statements, which causes banks to have greater faith in internal governance mechanisms and, thus, reduce borrowing costs. In addition, companies with high board quality can achieve a low cost of debt through a reduction in the default risk due to the reduced agency problems and improved monitoring of managerial actions, and they are likely to provide credible financial reports (Bhojraj and Sengupta, 2003; Anderson *et al.*, 2004; Piot *et al.*, 2007; Ertugrul and Hegde, 2008).

However, the role, structure and composition of the board of directors differ between family firms and non-family firms. Generally, these structures are determined by the business size, complexity and maturity of the owning family (IFC Corporate Governance, 2013). In the early years of their existence, the majority of family businesses create a board of directors to comply with legal requirements. These are known as “paper boards”, whose purpose is primarily limited to approving the financial business, dividends and other procedures that the law requires via the board of directors (Kosnik, 1987).

Some studies have found that family firms have a slightly smaller board of directors and fewer independent directors than non-family firms (Chen *et al.*, 2008). In family firms, it is also normal to see the same people serving as the manager and on the board of directors, as well as becoming owners of the company. Such a governance structure adds little value to the family business, which can lead to conflict and inefficiency in the company, particularly regarding the oversight of strategic decisions (IFC Corporate Governance, 2013).

Prior research on the cost of debt has empirically linked the cost of debt with board characteristics in an individual investigation. For instance, in the USA, Anderson *et al.* (2004) examine the influence of board independence, size and diversity on the cost of debt. This study finds a negative relationship between board size, independence and cost of debt and fails to find a relationship between board diversity and cost of debt. Ertugrul and Hegde (2008) examine three board structures (size, independence and tenure) and find a negative relation with the cost of debt.

Similarly, Fields *et al.* (2010) examine the relationship between cost of debt and board quality (board size, board independence, the presence of an advisory board member, board experience, female board members, director’s pay and director ownership). Although this study finds a negative effect for board size, independence and cost of debt, it fails to find a relationship between the cost of debt and other board quality features. In France, Piot *et al.* (2007) find a negative effect for board independence and cost of debt. Additionally, in Spain, Lorca *et al.* (2011) examine different board attributes (size, independence, duality, activity, multiple directorships and director ownership) with cost

of debt. This study fails to find a relationship for these board characteristics and cost of debt, except for a negative effect of board activities and director ownership.

2.1.2 Audit committee, family firms and cost of debt. The audit committee is an important element of corporate governance and is concerned with establishing and monitoring the accounting processes to provide relevant and credible information to the firm's stakeholders (Pincus *et al.*, 1989; Beasley, 1996). Anderson *et al.* (2004) argue that the quality of audit committees is to ensure the soundness and quality of internal accounting and control practices. The audit committee also serves to monitor external auditor independence from senior management, which enables the debtholders to trust the financial information provided. Hence, the premium that debtholders require decreases and, hence, reduces the cost of debt.

However, the effectiveness of the audit committee can be jeopardized by the presence of too many family members (Bettinelli, 2010). Agency theory predicts that family firms will have less demand for an effective audit committee because controlling families want to take advantage of minority shareholders. Focusing on a sample of 523 Hong Kong firms for the period of 1999-2000, Jaggi and Leung (2007) find that audit committees play a significant role in constraining earnings management even when ownership is concentrated in the hands of fewer people. However, they find that the effectiveness of audit committees is significantly reduced when family members are present on corporate boards, particularly when family members dominate these boards. In addition, Wong (2011), based on 385 Hong Kong listed firms, confirms that family firms are associated with less audit committee independence and financial expertise.

A few studies examine the effect of the audit committee on the cost of debt; for example, in the USA, Anderson *et al.* (2004) examine the influence of audit committee features (independence, size, meeting and expertise) on the cost of debt. This study finds that increased independence, size, financial expertise and meeting frequency of the audit committee are associated with a lower cost of debt financing. Likewise, Piot *et al.* (2007) examine the existence of an audit committee and cost of debt in the context of companies listed in France. The results show that the existence of an audit committee does not affect the cost of debt. Lorca *et al.* (2011) examine the same relationship in the context of Spanish companies. Their results indicate that there is no relationship between audit committee independence and cost of debt.

The relevant literature reviews above have shown contrasting findings of the individual characteristics of the board of directors and audit committee with the cost of debt. This approach has been criticized in recent literature for its inability to represent the quality of the board of directors or the audit committee. Past studies by O'Sullivan *et al.* (2008), Hoitash *et al.* (2009), Goh (2009), Ishak and Al-Ebel (2013), Fallatah and Dickins (2012), Lary and Taylor (2012), Aldamen and Duncan (2012) and Ramly (2013) combine a number of characteristics as a proxy for governance factors to produce a combined score for corporate governance. Applying the same reasoning, this study examines the board of directors' and audit committee characteristics (independence, size, frequency meetings, expertise and directorship), as a composite measure, to capture their combined effect on determining whether or not they are associated with the cost of debt for companies listed on the Muscat Securities Market.

In addition, the contrasting findings above ignore the influence of the institutional structure of companies and countries, such as ownership structure. According to Desender (2009), the effectiveness of the board of directors and audit committee depends

on the institutional structure of companies and countries, such as ownership structure. For example, [Bhojraj and Sengupta \(2003\)](#) and [Kosnik \(1987\)](#) show that companies with concentrated family ownership could not obtain the optimum cost of debt even with an effective board of directors, because the board of director members are appointed to comply with legal requirements. Several studies have shown a difference in firm performance between family and non-family firms ([Anderson et al., 2003b](#); [Villalonga and Amit, 2006](#); [Miller et al., 2007](#); [Chahine, 2007](#); [Ibrahim and Abdul Samad, 2011](#); [Ong and Gan, 2013](#)). However, the empirical results for the performance between family and non-family owned firms are mixed. For example, [Anderson et al. \(2003a\)](#) and [Villalonga and Amit \(2006\)](#) show that family firms perform better than non-family firms, while [Miller et al. \(2007\)](#) indicate that firms that are owned and controlled by families or employ relatives as managers never exhibit superior performance. A study by [Chahine \(2007\)](#) on the Gulf Cooperation Council (GCC) countries finds that private investor ownership business and personal relationships dominate the financial preferences and, therefore, have a negative effect on bank value. Therefore, it is important to study family-owned firms because, as compared to non-owned firms, they are common among public firms in both developed and developing countries.

This study attempts to extend these prior studies by examining whether there is any difference in the association between the board of directors, audit committee effectiveness and cost of debt between family- and non-family-owned companies in the Sultanate of Oman where family-based ownership control is widespread and the legal protection of minority shareholders is weak ([Omran et al., 2008](#)). Within this weak regulatory framework, the controlling family can expropriate minority shareholders by appointing closely related directors. This practice might reduce the effectiveness of the corporate governance mechanisms that influence debt decision and, consequently, the cost of such debt. Based on the above arguments and previous studies, this study expects that the influence of the board of directors' and audit committee effectiveness on the cost of debt is weaker in family firms than in non-family firms.

3. Methodology

3.1 Data sources and sample selection criteria

The population of this study consists of financial and non-financial firms that were listed on the Muscat Securities Market (www.msm.gov.om/default.aspx) over the period 2005-2011. Indeed, these years were chosen for several reasons. The provisions of the code of corporate governance of the Sultanate of Oman were fully implemented in 2004; therefore, this study starts with the sample period of year 2005 to ensure the availability of the governance data in the annual reports and to ensure the uniformity of corporate governance practices of all Omani companies. In addition, during the period 2005-2011, several events occurred, such as the global financial crisis in 2008 and the Dubai debt crisis in 2009, which caused many of the capital markets, including MSM, to suffer from the consequences. Thus, it is expected that the regulators and companies learned many lessons from these crises, especially with respect to the borrowing system and shareholder protection. Finally, the annual reports for the seven years from 2005 to 2011 are the latest sources of information available at the time this study was initiated.

The total number of companies listed on the Muscat Securities Market was 116 at the end of 2011. Due to the differences in the regulatory requirements, and the characteristics of their financial reports, which are different from those of non-financial

firms, 31 banks and other financial institutions were excluded from the population (Lorca *et al.*, 2011; Byun, 2007; Kim *et al.*, 2009). In addition, due to unavailable online financial reporting for some companies, six companies with missing data were excluded from the sample population. Moreover, because some of the companies source their financing internally via the shareholders, 11 companies with no loans were also excluded from the population. The final sample of this study for a single year is 68 firms. More specifically, this study uses a balanced panel data set, which has multiple observations of the same economic units. Each element has two subscripts: the group identifier, i (in this case, 68 companies), and within the group index denoted by t , which identifies time (in this case, 2005-2011). Based on the balance panel data set approach, each year from 2005-2011 has a sample size of 68 firms. The total number of observations for the entire time period is 476 (68 firms for seven years).

3.2 Empirical model

This study uses a panel data set, which has multiple observations on the same economic units. Each element has two subscripts: the group identifier, i (in this case, 68 companies), and within the group index denoted by t , which identifies time (in this case, 2005-2011). Based on the above sample, this study starts by reporting the descriptive statistics for the full sample of 476 firms, the family sample of 287 firms and the non-family sample of 189 firms. Descriptive analysis provides more descriptive information that enables the data to be understood and interpreted more appropriately. Using the means from randomly drawn samples, the independent two-sample t -test is used to test whether the population means are significantly different between the family and non-family firms. Additionally, this study uses the following regression for the cost of debt:

$$COD_{it} = a_0 + \beta_1 BoDEF_{it} + \beta_2 ACEF_{it} + \beta_3 FS_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} \\ + \beta_6 BIGA_{it} + \beta_7 ICR_{it} + \varepsilon_{it}$$

Where i represents company, t is time period, COD is cost of debt, $BoDEF$ is board of directors' effectiveness, $ACEF$ is audit committee effectiveness, FS is firm size, LEV is leverage, ROA is return on assets, $BIG4$ is auditor reputation, ICR is interest coverage rate and ε is the error term.

3.3 Panel data estimation

The cost of debt model in the previous equation is first estimated by using ordinary least squares (OLS), which treats all the observations for all the time periods as a single sample. The OLS model ignores the panel nature of data and assumes that ε_{it} has no serial correlation. However, panel data may have group effects, time effects or both. These effects are either fixed or random. A fixed effects model assumes differences in intercepts across groups or time periods, whereas a random effect model explores differences in error variances. For a given observation, an intercept varying over units results in the structure:

$$COD_{it} = a_0 + \beta_1 BoDEF_{it} + \beta_2 ACEF_{it} + \beta_3 FS_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} \\ + \beta_6 BIGA_{it} + \beta_7 ICR_{it} + (u_i + \varepsilon_{it})$$

Where u_i is the individual-level effect and ε_{it} is the disturbance term. The u_i is either correlated or uncorrelated with predictor variables. The u_i is always assumed to be uncorrelated with ε_{it} . If the u_i is uncorrelated with the predictor variables, then it is known as the random effects model, but if the u_i is correlated with the predictor variables, then it is known as the fixed effects model. The Hausman test is used to differentiate between the fixed effects model and the random effects model. This test uses the difference between the two estimated covariance matrices (which is not guaranteed to be positively definite) to weigh the difference between the fixed effects model and the random effects model vectors of slope coefficients. In contrast, the Breusch-Pagan (LM) test (Breusch and Pagan, 1980) uses the OLS model as the null hypothesis and the random effects model as the alternative.

3.4 Measurement of the variables

The dependent variable of this study is the cost of debt, which is calculated as the interest expenses for the year divided by the average of the total short-term and long-term debt (Lorca *et al.*, 2011; Piot *et al.*, 2007; Kim *et al.*, 2009; Pittman and Fortin, 2004).

The definition of a family business is still subject to debate among researchers. For example, Anderson *et al.* (2003a) define a family firm as either individuals or groups of founders or any close family relationship among the owners, directors or blockholders. On the other hand, Maury (2006) describes family ownership as the degree of family presence on the board in addition to regarding to exerting dimensions of family power. Furthermore, Astrachan *et al.* (2002) define a family firm as consisting of three main dimensions – power, experience and culture of the family. However, Adams *et al.* (2009) and McConaughy *et al.* (1998) explain family-owned firms on the basis of family control and voting rights. From the above definitions, this study defines family firms in the Sultanate of Oman as private institutions that take the name of a family as well as individuals that have the same family name or any close family relationship among the owners. Accordingly, family ownership in this study is measured as a percentage of shares owned by family shareholders who own 5 per cent [1] or more of a firm in respect of the total number of shares issued (Chahine, 2007; Al-Musalli and Ismail, 2012). Therefore, to separate between family and non-family firms, this study uses a dummy variable by assigning a value of 1 for family firms if the major family shareholders own a stake of 5 per cent or more of firm shares and 0 otherwise for non-family firms.

Board of directors' and audit committee effectiveness are measured as a composite measure. Four characteristics of the board are used to measure effectiveness:

- (1) Board size, which is measured as the total number of directors available on the board (Anderson *et al.*, 2004); a large size board can help the company to reduce the state of dependence and uncertainty exterior and provide a broader set of knowledge and managerial experience (Pfeffer and Salancik, 2003).
- (2) Independent directors measured as a proportion of the independent directors to total directors on the board (Lorca *et al.*, 2011). Byrd and Hickman (1992) point out that an independent director contributes expertise and objectivity, which minimizes managerial entrenchment and expropriation of firm resources.
- (3) Board of director meetings, which is measured as the number of meetings held by the board during the year (Rahman and Ali, 2006). Garcia and Ballesta (2009)

consider the number of board meetings to be a good proxy for the directors' monitoring effort.

- (4) Directorships measured as the total seats held by directors divided by the total number of directors (Ahmed and Duellman, 2007). Lipton and Lorsch (1992) argue that multiple directorships can adversely affect the ability of the directors to monitor the management, as they are distracted by the affairs of other organizations.

For each characteristic, a value of 1 is assigned when the measure is equal to or above the sample median and 0 otherwise. These values are then summed to obtain a composite score ranging between "0 and 4", with a higher score indicating the higher effectiveness of the board (Dhaliwal *et al.*, 2008; Hoitash *et al.*, 2009; Ishak and Al-Ebel, 2013).

In addition, to determine the effectiveness of the audit committee, the following measures are used:

- Audit committee size, which is measured as the number of directors on the audit committee (Goh, 2009). An audit committee of sufficient size can help the committee to discharge its duties without overloading (DeZoort *et al.*, 2002).
- Independent directors on the committee, which is measured as the proportion of independent directors on the audit committee (Krishnan and Visvanathan, 2008). Fama and Jensen (1983) state that the outside directors of an audit committee have an incentive to develop a reputation as experts in decision control, and therefore, their existence on the board will enhance the internal control mechanism.
- Audit committee meetings, which is measured as the number of meetings held by the audit committee per year (Raghunandan and Rama, 2007). Menon and Williams (1994) consider frequent audit committee meetings as a signal for audit committee diligence.
- Financial expertise for audit committee members, which is measured as the proportion of audit committee members with qualifications or experience in accounting or finances (Krishnan and Visvanathan, 2008).

DeZoort *et al.* (2002) argue that the knowledge of audit committee members in functional areas, such as auditing, accounting and finance, is regarded as a critical characteristic of audit committee effectiveness. For each of the components (except audit committee independence), this study calculates the sample median. It assigns the value of 1 for high-quality indicators (i.e. companies above the sample median for size, financial expertise and number of meetings). For audit committee independence, it assigns the value of 1 if all the members of the audit committee are independent as required by the code of corporate governance in Oman and 0 otherwise. These values are then summed including the value of independent members in the audit committee to obtain a range of scores.

This study includes control variables that have been shown to have a significant impact on borrowing cost (Anderson *et al.*, 2003a, 2003b, 2004; Lorca *et al.*, 2011; Ballesta and Meca, 2011). This study includes firm size as one of the main control variables measured by the natural logarithm of total assets (Ghosh and Sirmans, 2005). Generally, larger firms have lower risk and are expected to have economies of scale regarding the cost of debt (Blackwell *et al.*, 1998). Leverage is calculated as the percentage of total debt

to total assets for the differences in the financial structure of firms and is used as a proxy for default risk (Fields *et al.*, 2010). Firms with greater debt intensity present higher risk to debt providers and, thus, are expected to have a higher cost of debt. This study includes return on assets by dividing the net profit to total assets as an indicator of a firm's financial performance (Haniffa and Hudaib, 2006). Following Lorca *et al.* (2011), this study uses Big 4 (Deloitte, PwC, Ernst & Young and KPMG) as the proxy for auditor reputation, and it is measured by assuming a value of 1 when the firm has a big 4 auditor and 0 otherwise. Interest coverage rate, which is calculated as the ratio of operating profit over interest expense for the period, is used as a proxy for default risk (Anderson *et al.*, 2004); lower (ICR) values reflect a greater risk of default. Table I shows the operational measurement of the variables.

4. Results and discussion

4.1 Descriptive statistics

Table II presents the descriptive statistics for the full and separate sample for family and non-family firms in the Sultanate of Oman. It reports the values of the means and the *t*-statistics that test the differences between the means of these variables for family and non-family firms. The descriptive statistics show a mean value of the cost of debt for the full sample of 6.2 per cent with a minimum of 1.2 and a maximum of 12.9 per cent, while the mean value of the cost of debt for family and non-family are 6.4 and 6 per cent, respectively. The results show that the cost of debt is statistically significantly different between family and non-family firms. This indicates that the cost of debt in family firms is higher as compared to non-family firms.

Variables	Acronym	Measurement
Cost of debt	COD	Interest expenses for the year divided by the average of total short-term and long-term debt
Board of directors' effectiveness	BoDEF	Sum of the scores of the four individual characteristics of the board of directors (board size, independence, meetings and directorship) to create an overall score. The score of 4 means all the four characteristics are above the sample median, while the score of 0 means all the four characteristics are equal or lower than the sample median
Audit committee effectiveness	ACEF	Sum of the four individual characteristics of audit committee (independence, size, meetings and expertise). The score of 4 means all the four characteristics are above the sample median, while the score of 0 means all the four characteristics are equal to or lower than the sample median
Family control	FC	Value of 1 if the major family shareholders own a stake of 5 per cent or above of firm shares and 0 otherwise
Firm size	FS	The natural logarithm of total assets
Leverage	LEV	The percentage of total debt to total assets
Firm performance	ROA	Net profit divided by total assets
Auditor reputation	BIG4	Value of 1 when the firm has a Big 4 auditor and 0 otherwise
Interest coverage rate	ICR	The ratio of operating profit over interest expense for the period

Table I.
Operational
measurement of
variables

Variables	Full sample (Firms = 68) (N = 476)				Family (Firms = 41) (N = 287)	Non-family (Firms = 27) (N = 189)	<i>t</i> -statistics of mean difference
	Mean	SD	Minimum	Maximum	Mean	Mean	
COD	0.062	0.022	0.012	0.129	0.064	0.060	2.041*
BoDEF	1.712	0.933	0.000	4.000	1.595	1.889	-3.389*
ACEF	1.621	0.942	0.000	4.000	1.645	1.587	0.648
FS	7.102	0.601	5.440	8.850	6.992	7.269	-5.059*
LEV	0.546	0.250	0.050	1.090	0.565	0.519	1.981*
ROA	0.042	0.088	-0.290	0.300	0.025	0.069	-5.530*
BIG4	0.601	0.490	0.000	1.000	0.547	0.683	-2.975*
ICR	12.13	24.37	-61.11	102.1	7.687	18.885	-5.027*

Notes: *COD* (cost of debt) = interest expenses for the year divided by the average of short-term and long-term debt; *BoDEF* (board of directors' effectiveness) = score ranging between "0-4", with higher score indicating higher effectiveness of the board and 0 otherwise; *ACEF* (audit committee effectiveness) = score ranging between "0-4", with higher score indicating higher effectiveness of the board and 0 otherwise; *FS* (firm size) = natural logarithm of total assets; *LEV* (leverage) = percentage of total debt to total assets; *ROA* (return on assets) = percentage of the net profit to total assets; *BIG4* (auditor reputation) = a value of 1 for firms with Big 4 audit firm as the auditor and 0 otherwise; *significant at the 0.01 level

Table II.
Descriptive statistics
for full sample,
family and non-
family firms

The descriptive statistics also show that the average value of board of directors' effectiveness for the full sample is 1.7 with a minimum of 0 and a maximum of 4, while the mean value for the effectiveness of the board of directors for family firms is 1.59 and 1.88 for non-family firms. In addition, the *t*-statistics for the mean differences between family and non-family firms is also significant. These results show that the board of directors in family firms is less effective than for non-family firms. However, the mean value of the audit committee effectiveness for the full sample is 1.62 with a minimum score of 0 and a maximum of 4, while the mean values for family and non-family firms is 1.64 and 1.58, respectively. In addition, the results show that in this sample, there is no significant statistical difference in audit committee effectiveness between family and non-family ownership.

Additionally, the mean value of the firm size for the full sample is 7.1 with a minimum of 5.44 and a maximum of 8.85, while the mean values for family and non-family firms are 6.99 and 7.29, respectively. This indicates that the firm size (measured as total assets) in family firms is smaller than in non-family firms. Moreover, the average value of leverage (the proportion of total debt to total assets) for the full sample is 54.6 per cent with a minimum of 5 and a maximum of 109 per cent, while the leverage ratios for family and non-family are 56.5 and 51.9 per cent, respectively. The results show that the family firms use more debt than non-family firms. However, the descriptive statistics for firm performance (measured as return on assets) for the full sample is 4.2 per cent with a minimum of -29 per cent and a maximum of 30 per cent, while the mean values for the family and non-family sample are 2.5 and 6.9 per cent, respectively. The results for the *t*-statistics of the mean differences for firm performance between family and non-family are significant, which indicates that firm performance in family firms is less than for non-family firms. The mean values for the auditor type (Big 4) for family and non-family

firms are 54.7 and 68.3 per cent, respectively. This indicates that family firms have a lower demand for high-quality audit services as compared to non-family firms. The average value of the interest coverage rate of the full sample is 12.13 per cent with a minimum of -61.11 and a maximum of 102 per cent, while the average values for family and non-family firms are 7.68 and 18.88 per cent, respectively. Hence, the interest coverage rate in family firms is lower than that for non-family firms.

4.2 Correlation matrix

A Pearson product-moment correlation (r) is computed to examine the correlation between the explanatory variables. As shown in Table III, the correlations between explanatory variables are between 0.350 and 0.587. According to Hair *et al.* (2010), explanatory variables above ± 0.7 indicate the existence of multicollinearity, which is a serious problem in regression. The correlation matrix shows that the correlation among explanatory variables is relatively low (below ± 0.7), indicating that multicollinearity is not a problem in our study. In addition, this study considers the other diagnostic tests, such as normality and outliers, the results of the skewness and kurtosis for normality, as well as the univariate method for outliers, all of which confirm that there is no problem in respect of normality and outliers in this study. However, with respect to the problems of heteroscedasticity and autocorrelation, this study performs both tests for which the results confirm the presence of heteroscedasticity and autocorrelation. Hence, the standard errors in the cost of debt model are estimated based on Rogers (1993) clustered at the firm level. Clustering at the firm level produces an estimator that is robust to cross-sectional heteroscedasticity and within-panel correlation. This technique ensures that valid statistical inference on the coefficient is made.

4.3 Regression results

As shown in Table IV, the result of the Hausman test is > 0.05 (i.e. not significant), and for the Breusch-Pagan (LM) (Breusch and Pagan, 1980) test, it is < 0.05 (i.e. significant). These two tests indicate that the random effects model is preferred. Based on the random effects model, the results reveal that the board of directors' effectiveness for the full sample is significant (at p -value < 0.01) in the predicted negative direction, as shown by the estimated coefficient. This indicates a strong association between board effectiveness and the cost of debt. This result supports that companies with a high

	1	2	3	4	5	6	7	8
1. COD	1.000							
2. BoDEF	-0.350**	1.000						
3. ACEF	-0.314**	0.252**	1.000					
4. FS	-0.229**	0.165**	0.075	1.000				
5. LEV	0.043	-0.077	-0.107*	-0.237**	1.000			
6. ROA	-0.164*	0.083**	0.186**	0.355**	-0.444**	1.000		
7. BIG4	-0.246**	0.189**	0.098*	0.445**	-0.136**	0.202**	1.000	
8. ICR	-0.213**	0.180**	0.192**	0.308**	-0.431**	0.587**	0.195**	1.000

Table III.
Pearson correlation matrix

Notes: ** and *Indicates significant at the 1 and 5%, respectively (two-tailed); refer to Table II for description of variables details

quality of board of directors can achieve a low cost of debt through a reduction in the default risk due to the reduced agency problems and improved monitoring of managerial actions and, consequently, are likely to provide credible financial reports (Anderson *et al.*, 2004; Ertugrul and Hegde, 2008; Piot *et al.*, 2007). However, when family control interacts with board of directors' effectiveness, the results show that the beta coefficient for the interaction between family control and the effectiveness of the board of directors is positive and significant (at p -value < 0.01). This suggests that the relationship between the board of directors' effectiveness and the cost of debt becomes weak when the firms have family ownership. The result shows that the firm's board of directors' effectiveness leads to high cost of debt when it interacts with the family owners. This result is because when family ownership increases, family shareholders are able to control the firm, through which they appoint their members on the board to monitor the management and follow the law that enforces the companies to appoint independent directors on their board.

To support the results in the full sample regression, when family control interacts with board of directors' effectiveness, this study divides the full sample into two groups – family and non-family – to examine whether there is any difference in the influence of board of directors' effectiveness on the cost of debt among family- and non-family-owned companies in the Sultanate of Oman. The result indicates that there is no significant relationship between the effectiveness of the board of directors and the cost of debt for the family firms. For non-family firms, however, the relationship between the effectiveness of the board of directors and the cost of debt is consistently negative and significant. This result supports prior research arguments that family businesses create a board of directors to comply with legal requirements, whereas non-family firms create a board of directors to provide the primary mechanism to control agency cost and deal with problems relating to the management of the organization and reduce the cost of debt (Kosnik, 1987). Furthermore, this study supports the argument of Jaggi *et al.* (2009), who contend that the appointment of a board of directors for family firms is to seek expertise and advice concerning the strategic direction of the firm rather than to monitor and control managerial activities. It is plausible that the role of the board and the role of the family have a substitution effect on the cost of debt that warrants further investigation.

In addition, in this study, the audit committee is considered to be one of the main variables explaining the cost of debt. The results of this study indicate that the association between audit committee effectiveness and cost of debt is negative and significant (at p -value < 0.01). This finding supports the argument that the quality of an audit committee plays an important role for all stakeholders (including debtholders) because it concerns establishing and monitoring the accounting process to provide relevant and credible information to the firm's stakeholders (Beasley, 1996; Pincus *et al.*, 1989). Moreover, this result is in line with the argument of Anderson *et al.* (2004), who state that the quality of the audit committees ensures the soundness and quality of internal accounting and control practices and monitors external auditor independence from senior management, which makes debtholders trust the financial information provided; hence, the premium that debtholders require for the debt decrease, thereby reducing the cost of debt. However, when family control interacts with audit committee effectiveness in the full sample regression, the results show that there is no significant relationship between the interaction term (family control and audit committee effectiveness) and the cost of debt. Additionally, by separating the sample into family

and non-family, the results show that the effect of audit committee effectiveness on the cost of debt in the family firms is negative and significant (at p -value < 0.05), while this relationship for non-family firms is statistically not significant. A possible explanation for this result is that family firms usually appoint membership in a firm's management team based on their family name regardless of expertise. Therefore, family firms focus on audit quality to assist their family management to enhance internal control by complementing the process of profit planning and control (Carey *et al.*, 2000).

In summary, the results indicate that the effectiveness of the board of directors plays a significant role in the cost of debt for non-family-owned firms rather than family firms. This is because family firms in the Sultanate of Oman view that the purpose of the appointment of a board of directors is to seek expertise and advice on the strategic direction of the firm rather than to monitor and control managerial activities. In contrast, the effectiveness of audit committee plays a more significant role in the cost of debt for family-owned firms than for non-family firms because family firms in the context of Oman focus on audit quality to assist their family management enhance internal control by complementing the process of profit planning and control.

Among the control variables, the relationship between firm size and cost of debt based on the full, family and non-family samples is not significant. Similarly, the effect of leverage on the cost of debt for the full sample and the separate samples of family and non-family is not statistically significant. However, although the effect of performance on the non-family firms is positive and significant, there is no significant effect for the full and family samples. In respect of auditor quality (Big 4), the results indicate that the relationship between the Big 4 and the cost of debt for the full and family firm samples is significant in the predicted negative direction, while this relationship is not statistically significant for the non-family sample. Finally, the relationship between the interest coverage rate and cost of debt for the full and non-family firm samples is negative and statistically significant, whereas this relationship is not significant for family firms.

4.4 Additional robustness tests

First, based on the argument of Lorca *et al.* (2011), who contend that different types of industry lead to different default risks, the non-financial sectors in the Muscat securities market are divided into two types of sector (industrial and service sector). Therefore, this study includes the industry dummy variable (Ind_Dum) by assigning a value of 1 for firms listed under the industrial sector and 0 for firms listed under the service sector to control for possible industry effects on the cost of debt. In addition, the study includes time variance to control the possible effects of some events accrued during the sample period (e.g. global financial crisis, Dubai debt crisis) on the cost of debt. By including these two variables in the model, the results do not show any difference in the effects of industry type on the cost of debt. However, the effects of time variance on the cost of debt show that in 2006 and 2007, the effects were positive and significant; this is because, in Oman, corporate governance in the early years was still weak, as Oman only started to implement governance principles in 2004. Likewise, in 2009, the effects were positive and significant because, at this time, most of the companies were suffering from the financial crisis, which started in 2008. In addition, companies in the GCC were suffering as a result of the Dubai debt crisis.

Second, this study realizes that as with any study on governance, there may be some concern regarding potential problems of simultaneity and/or endogeneity. [Hermalin and Weisbach \(2003\)](#) indicate that empirical research on corporate governance is complicated by the fact that “almost all variables of interest are endogenous”. In this study, particular attention is given to the probability of feedback between the cost of debt and board of directors’ effectiveness (e.g. perhaps companies with better borrowing rates simply attract a certain type of board of directors). Previous studies have compensated for these problems through a variety of approaches including using lagged variables, first differences of variables ([Ivashina, 2009](#)) and exogenous instrumental variables. This study considers the two-stage least squares, instrumental variable (2SLS-IV) approach to estimate the relation between the cost of debt and board of directors’ effectiveness. According to [Fields *et al.* \(2010\)](#), this approach is perhaps the most common approach in the governance literature.

The instrumental variable used in this study is lag cost of debt, which was selected because some companies seek to strengthen their board of directors to obtain a lower debt cost based on the results of the previous year’s cost of debt. In the first stage, we fit the model for the endogenous variable (board of directors’ effectiveness) as a function of lag1 cost of debt. Next, we predict the board of directors’ effectiveness and fit the second-stage regression, substituting board of directors’ effectiveness with its predicted values. In the second stage, the results continue to reveal that the board of directors’ effectiveness is significantly and negatively related to the cost of debt. Thus, this approach to addressing endogeneity supports our conclusion that firms with a highly effective board borrow at lower rates.

5. Conclusion

The objective of this study is to determine whether there is any difference in the relationship between the board of directors, audit committee effectiveness and cost of debt among the family- and non-family-owned companies in the Sultanate of Oman. This study extends the scope of previous studies concerning the cost of debt by considering the business environment in the Sultanate of Oman, which is characterized by the absence of a well-developed bond market, in which the financial markets remain less developed and the regulations and corporate control are still weak. In addition, firms in the Sultanate of Oman have a more concentrated ownership structure in which family ownership control is more common. Moreover, this study contributes to the literature by providing a comparison between family and non-family firms in respect of the effect of the board of directors and audit committee characteristics (independence, size, meetings, directorship and expertise) as a composite measure to capture the combined effect of these features on the propensity of the cost of debt based on a framework conceptualized in accordance with agency theory.

The empirical results of this study, based on the panel data for companies listed on the Muscat Securities Market over the period 2005-2011, reveal that the impact of the effectiveness of the board of directors on the cost of debt is negative and significant for the full and non-family sample, while this relationship becomes weak and not significant for family firms. Additionally, this study indicates that there is a significant negative association between audit committee effectiveness and cost of debt based on the full and family firm samples, whereas this relationship is not significant for non-family firms.

The results of this study are useful to all stakeholders (including debtholders), as it provides them with an important indicator regarding the kind of controlling shareholder and board of director who will protect their interests. This study also benefits the regulators and policymakers in the Sultanate of Oman, such as the Muscat Securities Market, because the research highlights a number of issues that can assist them in analyzing the impact of other corporate governance mechanisms (board of directors and audit committee) on this relationship in the Sultanate of Oman. For instance, regulators and policymakers might use the findings regarding the cost of debt in the relationship to governance practice, to identify the important roles played by the board of directors' effectiveness as one of the basic mechanisms of the corporate governance system in the Sultanate of Oman.

Nevertheless, this study has some limitations. First, the quality of the results can be judged based on the quality of the sample data. Second, the sample of this study only focuses on non-financial companies listed on the Muscat Securities Market. Other non-listed companies and financial companies are totally ignored. Therefore, the validation of the conclusions might not hold for financial companies and other companies outside those lists. Finally, neither the board nor the audit committee characteristics nor the control variables in the model of this study are exhaustive. Therefore, this study only focuses on the board and audit committee characteristics and their association with the cost of debt when they work as a substitute or complementary measurement. Following the limitations highlighted above, future research could examine the issue of the cost of debt in different contexts (different economic cycles, different stock exchanges or different cultures). In particular, the validity of this model can also be examined in the different contexts of the GCC countries, in different time periods and with different sample sizes.

Note

1. The 5 per cent cut-off is used because the majority of the listed companies in the Sultanate of Oman only disclose the ownership of the major shareholders who own 5 per cent or above of the firm's total equity.

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