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Corporate tax aggressiveness, outside directors, and debt policy: An empirical analysis

Grant Richardson [a,*], Roman Lanis [b,1], Sidney Chi-Moon Leung [c,2]

[a] School of Accounting and Finance, The Business School, University of Adelaide, 10 Pulteney Street, Adelaide, SA 5005, Australia
[b] School of Accounting, UTS Business School, University of Technology — Sydney, Corner of Quay Street and Ultimo Road, Haymarket, Sydney, NSW 2000, Australia
[c] Department of Accountancy, College of Business, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong, Hong Kong

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A B S T R A C T

This study examines the influence of corporate tax aggressiveness on corporate debt policy (the debt-substitution effect) and the influence of outside directors on both debt and the debt-substitution effect. Based on a sample of 6967 firm-year observations over the 2001–2010 period, we find that tax aggressiveness is negatively correlated with debt. We also observe a negative correlation between debt and the proportion of outside directors on the board, and find that outside directors magnify the debt-substitution effect. Finally, we obtain similar results in analysis based on firms' debt issuance decisions.

1. Introduction

The question of what determines a firm's debt policy or capital structure has received considerable research attention over the years. For example, Modigliani and Miller (1958) show that, in a frictionless capital market, a value-maximizing firm is indifferent between debt and equity financing. However, Myers (1984) suggests that corporate debt policy is determined by the benefits and costs of debt financing, including the tax benefits of borrowing, the costs of bankruptcy or financial distress, and the cost of debt. The view that capital structure decisions are influenced by agency cost considerations has also gained credence within the corporate finance literature (e.g., Grossman and Hart, 1982; Harris and Raviv, 1988, 1991; Jensen, 1986; Rajan and Winton, 1995; Stulz, 1988). Hence, taxes and agency costs are considered to be important factors in a firm's capital structure decisions, and thus corporate tax aggressiveness[3] and corporate governance mechanisms are likely to affect corporate debt policy.

DeAngelo and Masulis (1980) theorize that non-debt tax shields, such as depreciation deductions and investment tax credits, serve as substitutes for debt (interest) deductions, as they reduce the tax advantage of and thus the demand for debt. Their specific claim is that every firm has an optimal amount of total tax deductions. Hence, when a firm uses more non-debt tax shields, it has

* Corresponding author. Tel.: +61 8 8313 0582; fax: +61 8 8223 4782.
E-mail addresses: grant.richardson@adelaide.edu.au (G. Richardson), Roman.Lanis@uts.edu.au (R. Lanis), acsleung@cityu.edu.hk (S.C.-M. Leung).
[1] Tel.: +61 2 9514 3081; fax: +61 2 9514 3669.
[2] Tel.: +852 3442 7924; fax: +852 3442 0349.
[3] We define corporate tax aggressiveness broadly in this paper as the downward management of taxable income through tax-planning activities. It thus encompasses both legal and illegal tax-planning activities and those that may fall into the gray area (Chen et al., 2010; Frank et al., 2009). Although we use the term "tax aggressiveness" throughout the paper, it can be used interchangeably with tax avoidance, tax management and tax shelters.

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lower debt levels (the so-called debt-substitution effect). Early research on the determinants of capital structure choice reports inconsistent results on the debt-substitution effect (e.g., Bradley et al., 1984; Titman and Wessels, 1988), although the findings of several later studies suggest that non-debt tax shields can serve as debt deduction substitutes (e.g., Dhaliwal et al., 1992; Mackie-Mason, 1990; Trezevant, 1992). More recently, Graham and Tucker (2006) consider a sample of tax-aggressive and non-tax-aggressive firms, and observe that tax shelter-related activities (non-debt shield deductions) can be a substitute for debt tax shields (interest deductions). They conclude that tax-aggressive firms use less debt on average than their non-tax-aggressive counterparts. We extend Graham and Tucker's (2006) research to an analysis of whether tax aggressiveness is negatively correlated with debt in a broad sample of firms.

Additionally, Grossman and Hart (1982) and Jensen (1986) conjecture that corporate debt plays an important role in monitoring management, and thus in reducing agency costs. Bathala et al. (1994), Berger et al. (1997), Friend and Lang (1988), Grier and Zychowicz (1994), Harford et al. (2008), and Mehran (1992) extend this view by examining the interplay between debt and other management monitoring mechanisms (such as the board of directors and institutional investors), generally finding that such a correlation does exist. However, the nature of that correlation is unclear, with several studies finding that debt has a complementary relationship with other monitoring mechanisms (e.g., Berger et al., 1997; Friend and Lang, 1988; Mehran, 1992) and others finding a substitutive relationship between the two (e.g., Bathala et al., 1994; Berger et al., 1997).[4] Employing a large sample of firms, we reconsider the role that debt plays as a management monitoring mechanism by examining whether debt has a complementary (positive) or substitutive (negative) correlation with the proportion of outside directors on the board, which is arguably one of the most effective management monitoring devices (Byrd and Hickman, 1992; Fama and Jensen, 1983; Hermalin and Weisbach, 1988; Rosenstein and Wyatt, 1990; Xie et al., 2003).[5]

Finally, and more importantly, this study also investigates whether the proportion of outside directors on the board magnifies the debt-substitution effect. We specifically test the influence of outside directors on this effect because, in addition to their monitoring role, outside directors also play a significant advisory role and are thus likely to be in a better position to make superior decisions about the firm's optimal debt and capital structure mix (Adams and Ferreira, 2007; Anderson and Reeb, 2004; Armstrong et al., 2010; Coles et al., 2008; Dahya and McConnell, 2005; Fama and Jensen, 1983). In fact, prior research indicates that outside directors provide valuable expert advice to management about key corporate decisions (e.g., Agrawal and Knoeber, 1996; Dalton et al., 1998; Fich, 2005; Hermalin and Weisbach, 1988; Hillman and Dalziel, 2003). Outside directors also contribute to a skilled and knowledgeable board, as they are normally experienced professionals (e.g., reputable CEOs and executives, successful entrepreneurs, and academics) with broad expertise in several areas (e.g., business strategy, finance, and operations) (Fich, 2005; Linck et al., 2008). Thus, boards with a greater representation of outside directors are expected to make optimal capital structure decisions that maximize stockholder wealth. Indeed, as tax aggressiveness intensifies, firms with a greater proportion of outside directors on their boards should be better able to understand the tradeoffs between the costs and benefits of debt and non-debt tax shields.

Based on a sample of 6967 firm-year observations over the 2001–2010 period, we find that tax aggressiveness is negatively correlated with debt. We also observe a negative correlation between debt and the proportion of outside directors on the board, and find that outside directors magnify the debt-substitution effect. Finally, we obtain similar results in analysis based on firms' debt issuance decisions.

This study contributes to the literature in several ways. First, it extends the work of Graham and Tucker (2006) by examining whether the proportion of outside directors on the board magnifies the debt-substitution effect. Our results consistently show that the proportion of outside directors magnifies the negative correlation between corporate tax aggressiveness and debt. To the best of our knowledge, this study is the first to document this correlation empirically. Second, this study also investigates whether debt has a complementary (positive) or substitutive (negative) correlation with the proportion of outside directors on the board, as prior research on this question reported mixed and inconclusive results (e.g., Bathala et al., 1994; Berger et al., 1997; Friend and Lang, 1988; Grier and Zychowicz, 1994; Harford et al., 2008; Mehran, 1992). We examine the correlation between outside directors and debt in a much larger sample of firms (6967 firm-year observations) than prior research, and find results consistent with this correlation being a negative (i.e., substitutive) one. The implication is that managers are likely to choose a restrictive capital structure (higher leverage) to bond themselves and establish a reputation with the capital markets in the absence of other management monitoring mechanisms (Harford et al., 2008). Finally, this study also tests the debt-substitution effect in a broad-based sample of approximately 697 firms over the 2001–2010 period (6967 firm-years), a substantially larger and more representative sample than that considered by Graham and Tucker (2006), thereby extending the generalizability of their results.

The remainder of the paper is organized as follows. Section 2 provides the relevant theory and develops our hypotheses. Section 3 describes the sample, presents the descriptive statistics, and outlines our research method. Section 4 reports the results, and Section 5 concludes the paper.

[4] More specifically, higher debt levels eventuate in the absence of other monitoring mechanisms such as outside directors and institutional investors.

[5] In recent years, there have been increased calls by regulators and investors for measures mandating greater outside director representation on corporate boards. The Sarbanes–Oxley (SOX) Act, passed in 2002, requires outside directors to play a more important role in firm governance to protect the interests of stockholders. SOX also triggered modifications to the New York Stock Exchange's (NYSE) listing regulations in 2003, requiring the appointment of outside directors. The presumption underlying such measures is that boards with more outside directors will engage in better monitoring and make superior decisions (Dahya and McConnell, 2005).