Debt, Bankruptcy Risk, and Corporate Tax Sheltering

In the last few decades, U.S. corporations have become increasing aggressive in the payment of corporate income taxes by investing in new and ingenious methods to eliminate tax liability such as tax shelters[1]. We examine the effect of bankruptcy risk and leverage on corporate incentives to shelter income from taxes in the presence of agency costs. By agency costs we mean the possibility of managerial diversion out of income sheltered from tax authorities. By tax sheltering we mean all activities that lie between perfectly legal tax avoidance activities such as the purchase of tax-exempt bonds and egregiously abusive tax-saving transactions such as the use of prohibited tax-shelter products, transfer mispricing etc. These activities are generally based on a weaker set of facts and are often undertaken after a rigorous reading of the tax laws and have been termed as 'tax aggressiveness' in tax literature. Therefore, it is *a priori* not clear whether these activities will be deemed illegal or even detected.

Theoretical papers that derive a firm's optimal level of income sheltering (e.g., Slemrod, 2004; and Desai and Dharmapala, 2009)) typically consider an all-equity firm that offsets the tax benefits of sheltering with the expected costs of sheltering. We consider a levered firm and examine the role of bankruptcy risk on its determination of the level of tax sheltering. The rationale is that when firms enter bankruptcy (or possibly even simply financial distress), they are subject to greater scrutiny by creditors, regulators, and even the media, which should reveal sheltering activities. We propose that bankruptcy risk acts as a deterrent to a firm's incentives to shelter income from taxes.

Debt helps discipline management because default allows creditors the right to force the firm into bankruptcy (Harris and Raviv, 1990). Studies also show that bankruptcy is costly to the firm (Ang, Chua and McConnell, 1982; Lawless and Ferris, 1997; Altman, 1984; Altman and Hotchkiss, 2006), but it is "costlier" to the manager because she bears non-pecuniary costs (Gilson, 1989; Gilson and Vetsuypens, 1993; Hotchkiss, 1995; Ayotte and Morrison, 2009). A firm's bankruptcy risk can increase if it takes on more debt in its capital structure and/or invests in assets that generate riskier cash flows. In order to assess the effects of both these aspects of bankruptcy risk, we theoretically and empirically examine how a

[1] The U.S Congress Joint Committee of Taxation (1999) defines tax shelters as "any endeavour principally designed to avoid payment of taxes, without any exposure to either economic risk or loss." These are sophisticated financial products designed by experts in accounting, law and taxation based on a rigorous reading of the tax laws to exploit loopholes therein.

firm's level of sheltering relates to the level of debt in its capital structure as well as to its probability of default.

In addition to affecting a firm's sheltering level through bankruptcy risk, there are other ways in which the presence of risky debt in the firm's capital structure can affect its ability to shelter income. First, interest payments on debt reduce taxable income and thereby reduce the incentive to shelter income. Second, since the benefits of sheltering do not accrue in bankruptcy, there are fewer states in which the firm can shelter. Third, creditors such as banks and institutional debt-holders monitor firm activities, which will likely reduce the ability of the firm to shelter income. We attempt to encompass bankruptcy risk and these aspects of debt financing in our theoretical and empirical analyses.

We derive the optimal level of sheltering for a levered firm in a two-date, single-period model in which a firm's perquisite-consuming manager with an equity stake in the firm maximizes her payoff. The theory predicts that sheltering relates negatively to bankruptcy risk, leverage, the probability of the shelter being detected and penalised and manager's bankruptcy costs; and positively to the manager's equity stake in the firm. The theory also predicts that the negative relation between leverage and sheltering becomes weaker as the manager's equity stake increases. We test all the predictions of our theory on a large sample of U.S. firms over the period 1986-2012 and find results that are largely consistent with our theoretical predictions. Leverage and bankruptcy risk relate negatively to sheltering whereas greater managerial ownership increases sheltering and also weakens the negative sheltering-leverage relation. Further, we show that the negative effects of bankruptcy risk and debt on sheltering are stronger for riskier firms; and weaker for larger, better governed, more profitable firms, and for firms that are in the "public eye". We also show that a 2005 law change that enhanced creditor rights in bankruptcy decreased sheltering levels but weakened the negative sheltering-leverage relation. Finally, our analysis indicates that tax sheltering reduces firm value.