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Effects of ultimate ownership structure and corporate tax on capital structures: Evidence from Taiwan

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ABSTRACT

Our study investigates how ultimate ownership structure and the corporate tax rate affect the equilibrium trade-off relation between manager ownership and debt in reducing agency costs. Considering the presence of the controlling shareholder, we find that higher corporate tax rates strengthen the trade-off relation between manager ownership and debt while higher control rights held by the controlling shareholder weaken it as well as the strengthening effect of corporate tax rate. Our study contributes to the literature by revealing tax and ultimate ownership structure dimensions and their interactions as additional determinants of corporate capital structure.

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1. Introduction

Manager ownership and debt both reduce agency costs, and they exist in equilibrium in a firm. This study investigates how ultimate ownership structure and corporate tax status affect this equilibrium. The effect of a firm's ownership structure on performance has received considerable attention in the literature. However, few studies have examined the effects of ownership structure or corporate tax status on capital structure, and they focus on the interaction between manager ownership and debt financing (e.g., [Crutchley & Hansen, 1989](#); [Bathala, Moon, & Rao, 1994](#)) or on the effect on debt financing of the tax subsidy for interest payments ([Graham, 1996a, 1996b](#)). The exception is [Seetharaman, Swanson, and Srinidhi \(2001\)](#) which has considered the effects on debt financing from both the perspectives of tax and ownership structure.²

In the United States, there is relatively little concentration in ownership structures. In contrast, in East Asia many firms are controlled by a single shareholder (e.g., [La Porta, Lopez-de-Silanes, & Shleifer, 1999](#)). In addition, firms in East Asia exhibit far more divergence between cash-flow rights and control rights than do U.S. firms. Control power is often enhanced beyond ownership stakes through pyramid structures or cross-holdings between firms. Moreover, large shareholders have stronger incentives and abilities to monitor firm managers, and the presence of the controlling shareholder can therefore reduce

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² [Seetharaman et al. \(2001\)](#) shows that the relation between debt and manager ownership is negative (i.e., they substitute for each other in reducing agency cost) and a firm's higher income tax rate affects the negative relation (substitution) between debt and managerial ownership. However, that study examines only U.S. corporations, which are usually dominated by managers; whether the results are applicable to corporations in other countries needs to be examined, given the pronounced differences in ownership structure between U.S. and non-U.S. firms.

managerial self-dealing. These ultimate ownership structure characteristics suggest that a study of non-U.S. firms can provide evidence of the effects of ownership structure on a firm's leverage that would be difficult to detect in U.S. data.

Because of the separation of control rights and ownership, firms face agency conflicts between stockholders and managers. Management stock ownership can reduce agency costs by aligning the interests of a firm's managers with those of its shareholders. However, because of management entrenchment (e.g., Demsetz, 1983; Fama & Jensen, 1983), an increase in manager ownership can be expected to increase agency costs. The relation between manager ownership and agency cost is therefore non-monotonic.

Both debt and manager ownership are devices to reduce agency costs, and a trade-off relation exists between them in reducing agency costs. Consistent with this argument, numerous studies find that manager ownership negatively impacts firm leverage (e.g., Bathala et al., 1994; Chen & Steiner, 1999; Friend & Lang, 1988; Jensen, Solberg, & Zorn, 1992), supporting the traditional trade-off model where firms determine their optimal leverage by weighting the costs (e.g., financial distress) and benefits (e.g., reducing agency costs) of the marginal dollar of debt. Similarly, firms weight effects of agency and entrenchment costs to determine the optimal manager ownership level (e.g., Rozeff, 1982; Schooley & Barney, 1994).

The difference in manager- and controlling-shareholder-dominated ownership structures thus motivates us to investigate how ultimate ownership structure affects the influences of firm manager stock ownership and income tax rate on capital structure. Although the trade-off between alternative mechanisms to reduce agency costs is well elaborated in prior studies, this paper introduces both tax and ultimate ownership structure dimensions to complement previous research. Accordingly, our study aims to (1) build a model based on the trade-off theory to predict the effects of the controlling shareholder, firm income tax rate, and their interactions on debt financing and (2) empirically test our model's predictions using a two-stage simultaneous least-squares regression to control for potential endogeneity between manager ownership and debt.³

Based on the framework of the trade-off theory, we assume that a firm chooses a cost-minimized combination of manager ownership and debt to reduce agency costs. We show that manager ownership negatively impacts the level of debt in a substitution relation, as reported in previous literature. Moreover, our model is more robust than those of prior studies also built on the trade-off theory (e.g., Chen & Steiner, 1999; Jensen et al., 1992; Seetharaman et al., 2001) because we consider a disciplining force that drives managers to pursue optimal decisions.

Specifically, one inherent theoretical flaw of the trade-off theory is the reliance on a “discipliner” to ensure that managers undertake optimal debt to maximize firm value, but this reliance ignores the fact that managers are self-interested and may not always run the firm in the best interest of its shareholders. A straightforward way to settle this problem is through concentrated shareholding (Shleifer & Vishny, 1997), because the controlling shareholder has the incentives and abilities to discipline managers' actions. By incorporating the controlling shareholder's influence, our model presents a more complete picture of the effect of ownership structure on firm financing decisions.

Based on our analyses, we predict that the greater the control rights held by the controlling shareholder, the larger (i.e., less negative) the trade-off between debt and manager ownership, because the greater the control rights, the more incentives and abilities the controlling shareholder has to monitor managers, thus leading to lower management entrenchment costs.⁴ As the use of debt becomes costlier, firms will use less debt in their optimal choice for reducing agency costs, holding manager ownership constant.

In addition, our model shows that the higher a firm's income tax rate, the greater its interest payment tax shield and hence the lower its capital cost of debt, strengthening this trade-off (i.e., leading it to be more negative). Because higher controlling shareholder control rights decrease managerial entrenchment costs, offsetting the cost efficiency of the interest tax shield, we expect higher controlling shareholder control rights to mitigate the strengthening effect of the firm's tax rate on the trade-off relation.

Our study uses a sample of corporations listed in Taiwanese stock market, with 5027 firm-year observations from 1996 to 2006. We choose Taiwan as our experiment environment because firms there are usually dominated by a controlling shareholder. This ultimate ownership structure not only implies the existence of a discipliner but also provides new insights into how ownership structure affects firm leverage in a non-U.S. context.⁵

Consistent with our predictions, our empirical results show that there is an inverse (i.e., trade-off) relation between the level of debt and managerial ownership. Furthermore, we find that more control rights held by the controlling shareholder mitigate the trade-off relation between manager ownership and debt. We also find that higher firm tax rates strengthen this trade-off relation, but the strengthening effect is mitigated by the controlling shareholder's control rights.

Additional tests show that the relation between debt and managerial ownership is more negative for firms with higher levels of redundant cash and a lower probability of going bankrupt. This result implies that a higher degree of financial flexibility results in lower costs of raising additional debt and thus changes the trade-off relation. Moreover, the effect of the controlling

³ Mechanisms to reduce agency costs include cash dividend payments, managerial stock ownership, and higher debt levels. To extend the work of Seetharaman et al. (2001), our study focuses on the relation between debt and manager stock ownership.

⁴ Our definition of the trade-off relation is the ratio of the first-order derivative of debt divided by the first-order derivative of manager ownership, with the magnitude of the trade-off (i.e., a negative relation) depending on the marginal cost of manager ownership (i.e., entrenchment costs) relative to the marginal cost of debt. The reduction in entrenchment cost thus leads to a larger trade-off ratio, meaning that this ratio becomes less negative.

⁵ Moreover, the simplicity of the tax system in Taiwan also helps us to more easily measure the firm-level effective income tax rate. In Taiwan, the tax rate for corporate income below NT\$100,000 (about \$3000 U.S. dollars) is 15%, and that above NT\$100,000 is 25%. Since it is rare that listed firms make profits below NT\$100,000, it is appropriate to conclude that corporate income is subject to essentially a single rate of 25%. The new corporate income tax rate is 17% (effective January 1, 2010).

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