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journal homepage: www.elsevier.com/locate/jcorpfinDebt and taxes: Evidence from the real estate industry[☆]Michael J. Barclay¹, Shane M. Heitzman^{*}, Clifford W. Smith*Simon School of Business, University of Rochester, United States*

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ABSTRACT

Compelling empirical evidence documenting a material effect of corporate taxes on leverage decisions is limited, in part because of difficulties in constructing an effective proxy for the firm's tax benefit of debt. We examine leverage decisions across taxable and nontaxable real estate firms—firms for which we can measure the relative tax benefit of debt with little error. The tax hypothesis implies that for firms with similar asset portfolios, taxable firms should have more debt than their nontaxable counterparts. Consistent with this, leverage ratios of taxable real estate firms are higher than their nontaxable counterparts, but the magnitude of this difference is at most one-half of that implied by studies that employ simulated marginal tax rates.

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1. Introduction

In corporate finance, a central question concerns the firm's optimal capital structure: Given the capital required to support a company's activities, how can financing be divided between debt and equity to maximize firm value? And this immediately leads to a second question: What are the important factors in determining this optimal leverage for a given firm? Modigliani and Miller (1958) lay the foundation for a positive theory of capital structure by developing implications of market equilibrium. Their analysis rigorously demonstrates that, given the firm's investment policy and facing no taxes or contracting costs, the firm's choice of financing policy has no effect on its current market value. This proposition thus has focused the profession's attention on those factors that are potentially important in determining optimal leverage. If corporate financing decisions do affect firm value, they must do so for at least one of the following reasons: (1) they affect taxes paid by corporations or their investors, (2) they affect the contracting or information costs borne by the various contracting parties that comprise the firm, or (3) they affect management's incentives to follow the value-maximizing rule of undertaking all positive NPV projects.

In the development of our understanding of capital structure choices, taxes have played a prominent role. But early research was largely unsuccessful in documenting an empirical association between leverage and taxes. For instance, Myers (1984, p. 588) concludes, "I know of no study clearly demonstrating that a firm's tax status has predictable, material effects on its debt policy." Recent evidence on the link between corporate taxes and leverage decisions has been more persuasive, but that evidence relies on

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¹ Mike was collaborating on this article when he died in a tragic airplane crash; he is not responsible for any errors in or shortcomings of the paper.

a limited set of proxies for tax status. And these proxies share several limitations that arise from their reliance on financial statement information: limited variation in statutory tax rates, a disregard of future period tax rates, lack of compelling benchmarks, and interactions with investor-level tax rates. In this paper, we extend the literature on taxes and leverage by considering an alternative proxy for corporate tax status that is largely free of these limitations.

We examine the capital structures of a set of firms in which measuring the relative tax benefits over the life of a debt instrument is reasonably straightforward. We analyze data from firms in the real estate industry—an industry which includes both taxable and nontaxable firms. A taxable real estate firm faces an entity-level corporate tax. But both a real estate investment trust (that distributes at least 90% of its taxable profits to shareholders each year) and a partnership avoid entity-level taxation. The marginal corporate tax rate for these firms – both currently and over the life of a debt issue – is effectively zero. The tax hypothesis implies that these firms should have a comparative disadvantage in issuing debt and therefore should select a lower level of target leverage than a similar taxable firm.

Our research differs from prior work in two important ways. First, although a number of studies document that nontaxable real estate firms have high leverage, this evidence suggests only that there are important nontax benefits of debt in real estate firms. It says nothing about the importance of tax benefits: Without simultaneously examining the leverage choices of similar taxable real estate firms, these studies are unable to disentangle the leverage implications of operating within the real estate industry from those associated with the firm's tax status. Second, because our analysis of the tax effects of leverage exploits variation in tax status at the organizational level, our results are largely independent of the available evidence that focuses on variation in estimated marginal tax rates across taxable industrial firms. There is a material difference in the tax benefits of debt between taxable and nontaxable real estate firms, yet within the firm these tax benefits are reasonably stable over time. Therefore, our analysis of taxable and nontaxable real estate firms should provide valuable new evidence on the importance of tax status for corporate leverage choices.

Our work is similar in spirit to Gentry (1994), who exploits variation in the tax status of oil and gas firms to address the role of taxes on leverage and dividend policy. In his two-year sample period covering 1986 and 1987 (a time of substantial uncertainty about future tax laws) oil and gas firms could organize either as regular taxable corporations or publicly traded master limited partnerships.² Consistent with the tax hypothesis, Gentry finds that taxable corporations use more leverage. But this interpretation is less than straightforward since corporate shareholders also are shielded from liability for unpaid corporate debts which lowers the cost of using debt relative to the partnership form. In the real estate industry, the vast majority of publicly traded firms in our sample are taxable C corporations and REITs and both organizations afford investors limited liability. Finally, because the REIT form has been available and widely used for several decades, we have a longer sample period over which to test the underlying theories.

When we compare leverage in taxable and nontaxable real estate firms with similar investment opportunities, we document results consistent with the tax hypothesis. Our estimates suggest that going from a marginal tax rate of 0% to 35% leads to a 4.7% higher leverage ratio—a figure that is less than one-half the magnitude of recent widely-cited research using simulated tax rates. In our analysis, we account for property type, changes in tax regimes over time, investor-level taxes and dividend policy, alternate measures of leverage and maturity structure, accounting biases, as well as potential selection problems. Taken together, our results suggest that taxes matter. But using more precise measures for the tax benefits of debt, our results suggest that the magnitude of the effect estimated in prior studies using taxable firms is materially overstated.

2. Leverage and taxes

2.1. Theory

The basic theory is straightforward. A corporation's taxable income is reduced by interest payments, but not by dividends. Thus, as Modigliani and Miller (1963) note, adding debt to a firm's capital structure lowers its expected tax liability and thereby increases its after-tax cash flow. If there were only corporate taxation and no individual taxation of the returns from corporate securities, the value of a debt-financed company would exceed that of an otherwise identical all-equity firm by an amount equal to the present value of its interest tax shield.

Miller (1977) argues that this analysis potentially overstates the tax advantage of debt by considering only corporate taxes. Many investors who receive interest income must pay taxes on that income. But those same investors are taxed at lower rates on their equity returns. Thus, although raising leverage lowers the firm's corporate taxes, it also increases the aggregate taxes paid by its investors. Because investors care about their after-tax returns, they require compensation for these increased taxes in the form of higher yields on corporate debt.

The extent to which a company benefits from interest tax shields also depends on whether it has other tax shields. For example, DeAngelo and Masulis (1980) argue that holding all else equal, companies with more non-interest tax shields – such as investment tax credits, depreciation, and tax loss carryforwards – should have lower leverage to reflect the reduced value of their interest tax shields.

2.2. Evidence

Theoretical models of optimal capital structure predict that companies with more taxable income and fewer non-debt tax shields should employ higher leverage ratios. Several studies run regressions where leverage is the dependent variable and

² Guenther (1992) and Omer and Terando (1999) provide further evidence on the role of taxes in the financial decisions of corporations versus flow-through entities during the 1986–1987 time period.

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