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Tax Clienteles and Asset Pricing: Discussion

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DISCUSSION

JOSEPH WILLIAMS*: Dybvig and Ross reexamine the relationship between taxes, tax clienteles, and asset prices. Their analysis is crisp, and their results are provocative. Assuming progressive personal taxes and fixed supplies of securities, the authors identify three possible equilibria characterized by either no clientele effects, clienteles in quantities but not prices, and clienteles in both quantities and prices. For the first two cases, they construct risk-neutral probabilities and implicit tax rates under which all assets have equal expected returns. As the authors indicate, "This extends the usual no-arbitrage martingale result to a world with taxes." In the third case, multiple pricing rules are possible. Nevertheless, the authors still derive "a supermartingale result that under each of these pricing rules all assets have expected returns less than or equal to the shared constant."

For these results, Dybvig and Ross initially require that each investor pays taxes only on his aggregate taxable income. Subsequently, they extend their results to more realistic tax codes with piecewise-differentiable tax functions defined over multiple categories of taxable income. This interesting extension permits distinct tax brackets with different tax rates assessed on, for example, net capital gains versus net losses.

Dybvig and Ross reach their results roughly as follows. Because all assets are supplied exogenously, prices are determined in equilibrium by the solution to the representative investor's portfolio problem. For a risk-averse investor facing progressive personal taxes, the solution to this portfolio problem is uniquely characterized by Kuhn-Tucker conditions. If these conditions hold with equality for all assets, then convenient normalizations of the Kuhn-Tucker multiplier produce both the linear pricing relationships for all assets and the equality of expected returns net of the representative investor's taxes. Following the authors' terminology, such situations exhibit at most a clientele effect in quantities. In the remaining case with clientele effects in both prices and quantities, i.e., inequalities in at least some Kuhn-Tucker conditions, the same normalizations of the multiplier produce both lower bounds on asset prices and upper bounds on expected returns after personal taxes. Moreover, similar Kuhn-Tucker conditions and resulting pricing relationships must hold for any piecewise-differential tax function defined over multiple categories of taxable income.

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As in all provocative papers, the results here raise many interesting questions. What is the relationship between the tax code and clientele effects? Specifically, when do clientele effects exist in at most quantities and not prices? How are these conditions affected if the supplies of securities are endogenized? Given endogenous demands and supplies of securities, what firms optimally issue the securities demanded by investors in different tax brackets? Are these firms distinguished by their portfolios of assets? Indeed, what are the properties of equilibrium prices in such a model?

Finally, the provocative results in this paper have interesting implications for the tax-timing literature. Models like Constantinides and Ingersoll [1] require that all investors face identical personal tax rates. Without this assumption either short-sale constraints must preclude unlimited arbitrage or, as in Dammon [2] under a sufficiently complete capital market, investors' convex tax functions must have corner conditions sufficient to ensure equal marginal tax rates on all investors' optimal portfolios. Previously, financial economists who worry about taxes have argued that short sale constraints preclude investors' appropriate objective value-maximization—an objective which underlies all of the tax-timing literature. This paper suggests otherwise. Perhaps it is sufficient that clientele effects be restricted to quantities and not prices. Still, even if this is true, then a simple solution to the representative investor's boundary value problem most likely is possible only if his marginal tax rate is constant both across states and through time.

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