DISCUSSION

JOHN J. McCONNELL*: The paper by Harry DeAngelo and Ron Masulis emphasizes the fundamental importance of the observation made by Merton Miller [7] in his Presidential Address to this Association three years ago. Although it should be noted that strong hints of Miller's leverage irrelevancy theorem were given earlier by Farrar and Selwyn [4] and Black [1] [2], it was Miller who linked aggregate demand and supply conditions to demonstrate the way in which the value of an individual firm would be independent of its debt/equity ratio in equilibrium. Since the appearance of Miller's paper several other papers which extend or qualify his arguments have appeared. These include papers by Litzenberger and Van Horne [6], Miller and Scholes [8], Kim, Lewellen and McConnell [5], and Chen and Kim [3].

In this paper, DeAngelo and Masulis take a crack at extending Miller's results and those of the papers that have followed his. They do so by considering the impact of corporate and personal taxes on financing decisions and individual portfolio choice in a single-period state preference framework wherein ". . . both debt and equity markets are assumed complete, perfectly competitive, and frictionless, but are effectively segmented against personal tax arbitrage." They consider both debt/equity decisions and earnings payout/retention decisions under alternative assumptions about the prevailing tax environment. In each case they carefully address themselves to the demand and supply conditions in the markets for corporate securities and to the resulting implied values of firms in equilibrium.

Given that the authors have adopted the same assumptions as those of earlier authors, with some slight variations, it is perhaps not surprising that in most cases they reach similar conclusions. Specifically, they conclude that if at least one investor's tax rates are such that his after-corporate-and-personal-tax return on equity exceeds his after-tax return on debt, he will demand equity securities and firms will supply them; if at least one investor's tax rates are such that his after-corporate-and-personal-tax return in equity exceeds his after-tax return on debt, he will demand debt securities and firms will supply them; and if at least one investor's tax rates are such that his after-tax return on debt and equity are equal, in equilibrium, firms will supply both debt and equity, but the value of each individual firm will be independent of the amount of debt and equity it supplies. This is, of course, Miller's leverage irrelevancy theorem and the argument he used to prove it.

DeAngelo and Masulis also demonstrate that different investor clienteles for securities will arise depending upon the characteristics of the assumed tax environment. This set of analyses is instructive because it reminds us that conclusions about personal portfolio choice derived under one set of assumptions about the personal tax code may not holdup when the assumptions are altered. A limitation of the analysis here is that the authors do not indicate which particular tax environment they believe to be most descriptive of the U.S. tax

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code.[1] Thus, it is difficult to determine which particular clienteles the authors predict will exist in equilibrium.

The authors do relax Miller's assumption of default-free debt and demonstrate that the leverage irrelevancy conclusion still obtains. Although in fairness, Miller did state that result without proof and Chen and Kim [3] formally demonstrated it last year at this meeting under a slightly different set of assumptions.[2]

Perhaps the most insightful section of this paper is the one dealing with dividends irrelevancy. Here the authors contend that the borrow-to-buy insurance scheme for avoiding taxes on dividends (or equivalent schemes) discussed by Miller and Scholes [8] is not sufficient to yield on equilibrium in which dividends are demanded and supplied. An additional peculiarity of the tax code is also needed to achieve such an equilibrium. Specifically, a dividend-specific tax shelter like the personal dividend exclusion is also needed. Such a conclusion is pleasing because the necessary condition closely approximates the current U.S. tax code. Unfortunately, what the authors give us with the right hand they immediately snatch away with the left, because they point out in a footnote that in the absence of dividend-specific shelters other than the exclusion, their model cannot explain the observed magnitude of dividend payments in the U.S.

In the final evaluation of this paper there are two entries on the positive side of the ledger: First, the authors emphasize again that the effects of the U.S. tax code on corporate valuation and financial policy are complex and that conclusions drawn depend critically upon the specifications of the tax code. Second, they provide a useful synthesis of earlier papers on this topic in a unifying framework. On the negative side of the ledger there is one entry: The introduction of the terms aggregate supply response and tax-induced positive aggregate demand and the associated acronyms ASR and TIPAD strike me as excessive and unnecessary jargon which has the potential for obscuring the important points the authors hope to make. I encourage them to adopt more standard economic terms to describe the phenomena in question.

REFERENCES

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[1] In the text the authors do indicate that only investors with personal tax rates in excess of the corporate tax rate will hold common stocks. This implication is contravened by the evidence in [5].

[2] Specifically, Chen and Kim require the assumption that investors be permitted to recapture at the personal level tax credits from corporate operating losses. DeAngelo and Masulis do not need this assumption to obtain their result. Both analyses are correct under the set of posited conditions. The fundamental distinction in the analyses is that Chen and Kim consider a corporate *income* tax (similar to the current U.S. tax) wherein interest payments in debt are deductible for tax purposes. DeAngelo and Masulis, on the other hand. consider only a corporate *wealth* tax wherein both principal and interest are deductible.

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