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Optimal Liquidation of Assets in the Presence of Personal Taxes: Implications for Asset Pricing: Discussion

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DISCUSSION

SCOTT F. RICHARD*: George Constantinides and Myron Scholes have presented a negative report on the possibility of using option hedges to defer from one year to the next taxes on realized capital gains. Their hedge requires that at time t (November) an investor takes a position in three distinct calls on the same stock, where all three calls mature after January 1. One of the calls is bought and two are written such that at time t no money is invested. At time $t + dt$ (December) a capital loss can be realized on one leg of the hedge, while not realizing the offsetting capital gain on the other leg; no cash flow results from the transactions. At time $t + 2dt$ (January) the hedge is closed out with the realization of a capital gain, equal in magnitude to the capital loss, but with no cash flow. For dt sufficiently small the investor bears no economic risk, nor is it possible for him to earn any return; the hedge simply, in theory, transfers the tax liability from one year to the next.

The authors themselves have somewhat "stolen my thunder" as a discussant by noting correctly that even very small transaction costs makes the use of this option hedge unprofitable. Hence my comments on the first four sections of their paper are brief and technical. I instead direct attention mainly to section six and its implications.

Three of the technical assumptions used in deriving the continuous time hedge in section three are troublesome to me. First the authors assume the existence of a riskless tax-exempt bond, a plausible fiction, but a fiction nonetheless. Second the assumption that " dt " is one month in duration bears examination. In effect the authors are assuming monthly revision of a hedge that should in theory be revised continuously. While it is really an empirical matter, I suspect that infrequent revision of the hedge requires the hedger to bear large amounts of nonsystematic risk. This suboptimal risk bearing can be mitigated by either adding more options (with different striking prices or maturities) to the hedge portfolio or revising the hedge more frequently. Both of these strategies unfortunately increase the already excessive transaction costs, further blunting the usefulness of the option hedge.

The third technical problem is that there is no way to ensure a capital loss large enough to offset any given level of realized capital gain using the Constantinides and Scholes hedge. It can be argued that taking a large position in the option on a high volatility stock is *almost* certain to generate a sufficiently large loss to offset any gain. This strategy will almost certainly result, however, in the hedger bearing large levels of nonsystematic risk, as mentioned above. Hence the potential hedger is caught on the horns of a dilemma: either to bear more nonsystematic risks or to risk an incomplete coverage of his capital gain.

The sixth section of the paper examines the implications of capital gains taxes on consumer welfare and equilibrium asset prices. While no formal models are presented, the authors argue that each of the following, *ceteris paribus*, is beneficial to shareholders: higher capital gains tax rates, lower anticipated infla-

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tion or higher nonsystematic stock risk. These counter-intuitive results can be better understood, I think, once the reader realizes that Constantinides and Scholes are assuming implicitly that capital gains are untaxed either through deferral or through the realization of offsetting capital losses, but capital losses are realized and deductible. Hence, for example, an increase in nonsystematic risk is beneficial since it increases the probability of both relatively greater capital losses and capital gains, but the losses are deductible while the capital gains remain untaxed. (Their assertion is similar to the result in the Black and Scholes (1973) option pricing model that variance increases the value of the option.)

Finally in section six the authors argue that the effect of dividends on the welfare of investors is ambiguous under a capital gains tax regime. They argue further, however, that if the Miller and Scholes (1978) tax deferral scheme is operative¹ then dividends become unambiguously favorable to investor welfare since they increase the probability of capital losses. This argument immediately raises an important question in my mind: If the Miller and Scholes tax deferral scheme works then it can be used on realized capital gains, as well as dividends, so that capital gains taxes can be deferred until death. If this is true, then why bother with option hedges?

The answer to this question, I think, highlights the critical role of consumption which is missing from the Constantinides and Scholes paper. The essence of the Miller and Scholes argument is that through the judicious use of tax deferrals the Federal Income Tax can be converted into a consumption tax. All investment income can be sheltered from taxation; only that part of income which is to be used for consumption gets taxed. The key benefit of taking capital losses and deferring capital gains is that some income used for consumption can be sheltered from taxation. To see this in a simple example consider an individual who will earn \$10,000 per year in taxable wages for the rest of his life and wishes to consume his entire after-tax income each year. The Miller and Scholes hedge is of no use to him. But if the Constantinides and Scholes (C-S) hedge is operational, the investor can shelter \$3,000 of his yearly income and thus consume more. (The \$3,000 amount is determined by the tax code; it is the maximum yearly capital loss that can be deducted from ordinary income.) In the following year he has a \$3,000 capital gain and \$10,000 in ordinary income. Again using the C-S hedge he can generate a \$6,000 capital loss and thus reduce his taxable wage income to \$7,000. He continues this program, each year increasing his capital gains liability by \$3,000, until death. At his demise his estate is exempt from the accumulated capital gains liability. (Indeed the investor has no estate.)

The examples are much more complex if the investor wishes to accumulate wealth or if he already has a portfolio. Insofar as his portfolio has generated capital gains, he can use the C-S hedge to shelter more of his consumption than the \$3,000 limit. This will surely affect the equilibrium pricing of capital gains generating securities.

In the absence of an equilibrium model I am uneasy about my conclusions and

¹ The Miller and Scholes scheme may not be feasible in equilibrium as argued in this session by Harry DeAngelo and Ronald Masulis.

reluctant to conjecture further. In my opinion an equilibrium model including *consumption, wealth* and *taxation* would be a fruitful line of research.

REFERENCES

- F. Black and M. Scholes, "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy*, Vol. 81 (1973); 637-654.
- M. H. Miller and M. S. Scholes, "Dividends and Taxes," *Journal of Financial Economics*, Vol. 6 (1978); 333-364.