

## Optimal tax-timing with asymmetric long-term/short-term capital gains tax\*

Prof. Min Dai and his co-authors wrote a paper entitled "Optimal tax-timing with asymmetric long-term/short-term capital gains tax" which was published in 2015 in the *Review of Financial Studies*. They developed an optimal tax-timing model that takes into account asymmetric long-term and short-term tax rates for positive capital gains and limited tax deductibility of capital losses. In contrast to existing models, this model can help explain why many investors not only defer short-term capital losses to the long-term but also defer large long-term capital gains and losses.

Investors in U.S. stock markets are subject to capital gains tax when gains or losses are realized. When gains are realized, a lower long-term tax rate applies if and only if the stock holding period is at least one year. In contrast, when losses are realized, a higher short-term rate applies regardless of the length of the holding period, and investors effectively get a tax rebate. The short-term rate is set to the investors' marginal ordinary income tax rate, and the rebate is implemented by deducting the losses from their taxable ordinary income. Assuming that a long-term tax rate applies to long-term losses, the existing literature on optimal investments with capital gains tax argues that investors should realize all losses before they turn long-term and realize all gains right after they turn long-term. In contrast, empirical evidence shows that many investors defer not only short-term losses beyond one year but also large long-term gains and losses.

In their research paper Prof. Dai and his co-authors propose an optimal tax-timing model that can help explain this puzzle, by taking into account three important features of the current tax code: (1) tax rates for long-term gains can be lower than the rates for short-term gains; (2)

capital losses allowed to offset taxable ordinary income are capped at US\$3,000 per year, with the rest carried forward indefinitely for offsetting future gains and/or income; and (3) short-term tax rates apply to both long-term and short-term losses.

In contrast to the existing literature, the authors find that it may be optimal for investors to defer not only short-term losses but also large long-term gains and long-term losses. Intuitively, different from what is assumed in the existing literature, the higher short-term rates apply to both long-term and short-term losses under the current law. Thus, long-term status strictly dominates short-term status. Therefore, it may be optimal for investors to defer some possibly large gains and losses regardless of the length of the holding period. In addition, high-income investors may optimally defer larger long-term gains and losses than lower-income investors.

The main intuition is that there is an additional benefit to deferring the realization of gains for high-income investors: it makes incremental losses effectively tax rebatable without limit. When there is a large long-term loss, and the long-term rate is much lower than the short-term rate, keeping the long-term status by deferring realization can provide significant benefit from the much lower long-term rate when stock prices rise and current losses turn into gains. Moreover, the benefit of realizing long-term gains or losses to re-establish the short-term status for future losses is small for high-income investors because only a small fraction of losses can be tax deductible at the higher short-term rate for these investors.

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\* M. Dai, H. Liu, C. Yang, and Y. F. Zhong, *Review of Financial Studies* (2015), 28(9), 2687-2721.

The paper is available at  
[http://www.math.nus.edu.sg/~matdm/Tax\\_September\\_2014.pdf](http://www.math.nus.edu.sg/~matdm/Tax_September_2014.pdf)