

# **“Non-qualified Annuities in After-tax Optimizations”**

by

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**Discussion by**

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## *An Overview of the Literature*

- **Asset Location is an important issue**
- **Much is already well understood**
- **Past focus has been on taxable and tax-deferred accounts (Dammon, Spatt and Zhang (JF, 2004), presented at the Second Annual Personal Risk Management Conference)**
- **Powerful and Very General Methods brought to bear on the issue to incorporate stochastic returns (and stochastic lifetimes)**
  - **Arbitrage Methods**
  - **Backwards Recursion, Expected Utility Maximization—e.g., CRRA Utility**
  - **State Dependence highlighted**
  - **Focus upon “After-tax” Values a la Roth IRA Emerges Naturally (Endogenously)—not new**
  - **Consistent with Tax Deferral (Capital Gains Lock-in in Taxable Account)**

## *An Overview of the Literature (cont.)*

- **Limitations of the Methods Explored**
  - **Borrowing Constraints**
  - **Quantifying Tax-Deferred Investing Benefits**
  - **Liquidity Constraints**

**While the broader literature and the paper here are motivated by the U.S. tax setting, the issues also are of relevance to Canada. We'll begin by a brief overview of the broader literature as many ideas are robust.**

## *Retirement Investing*

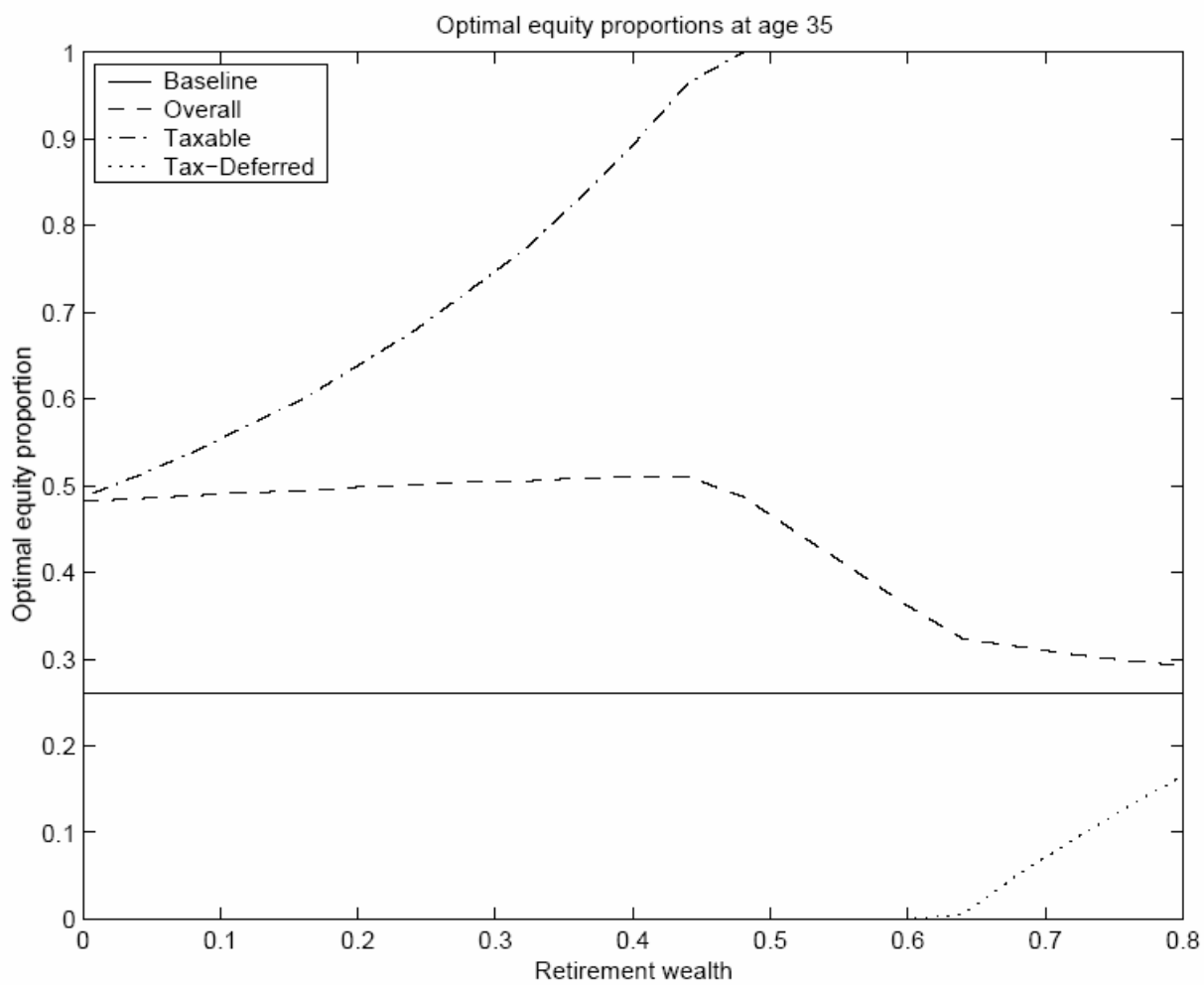
- **How should investors allocate their asset holdings in both taxable and tax-deferred (retirement) accounts? Where is it efficient for the investor to locate his exposures (i.e., minimize taxes), while fixing the risks? What do *you* own?**
- **Tax-timing options in the taxable account versus pre-tax returns for tax-deferred holdings.**
- **What is the impact on asset location if the investor can borrow without friction in his taxable account?**

## *General Conclusion on Asset Location*

- **Assuming forced realization of gains and losses each period, it is optimal for the investor to hold the asset with the highest yield (e.g., the bond as long as the bond coupon exceeds the dividend yield) in the tax-deferred account and locate other assets to the taxable account.**
- **Intuition: If the investor holds something other than the highest yielding asset in his tax-deferred account (e.g., bonds) and moves one dollar towards the high yielding asset (e.g., bonds) in the tax-deferred account, he can shift  $x$  dollars towards stocks in the taxable account to achieve a total wealth shift that is independent of the realized return on equity (for the right choice of  $x$ ).**
- **Allowing tax deferral further increases the attractiveness of locating equity in the taxable account.**

## *No Borrowing and Optimal Asset Location*

- **Investors should not simultaneously hold taxable bonds and tax-deferred equity.**
- **A mix of bonds and stock may arise in the retirement account only if the investor holds only equity in the taxable account.**
- **A mix of bonds and stock may arise in the taxable account only if the investor holds all bonds in the tax-deferred account.**
- **If the investor cannot borrow, an increase in the proportion of tax-deferred wealth results in reduced overall equity exposure when the marginal holdings of equity can only be located in the tax-deferred account as that is a less attractive venue to locate equity than the taxable account.**



## *Benefits of Tax-Deferred Investing*

- **How valuable is locating asset holdings efficiently? What is the relative value of tax-deferred vs. taxable wealth? Should the investor contribute to tax-deferred accounts when allowed to do so?**
- **Substantial welfare cost to mis-locating equity exposure in the wrong account or even equally allocating equity exposure to both accounts as a function of horizon and mix between taxable and tax-deferred wealth.**
- **Substantial shadow price value to tax-deferred as compared to taxable wealth as a function of horizon and mix between taxable and tax-deferred wealth.**

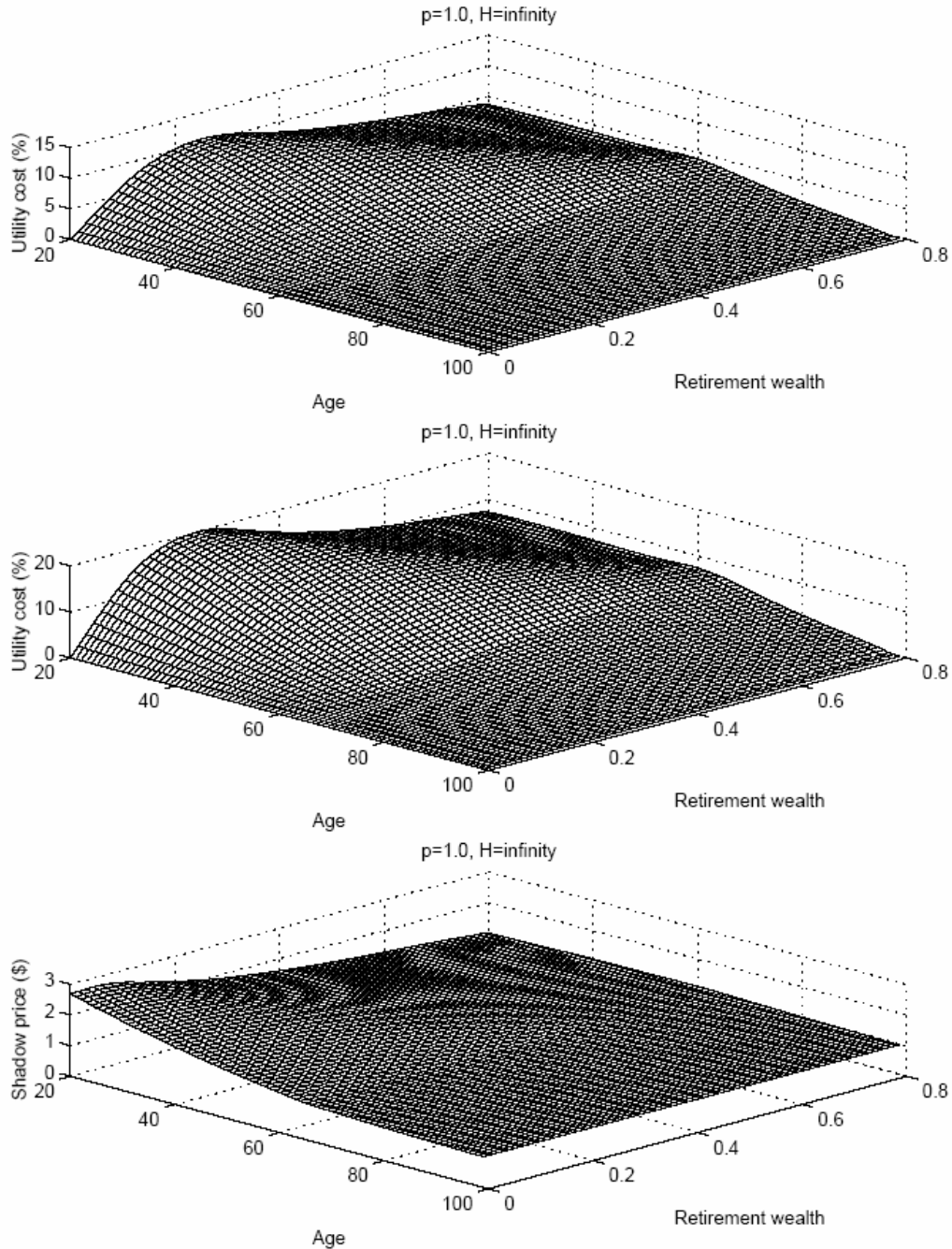


Figure : Top panel: Utility cost of following the suboptimal policy of holding the same portfolio mix in both the taxable and tax-deferred accounts. Middle panel: Utility cost of following the suboptimal policy of allocating equity to the tax-deferred account before allocating equity to the taxable account. Utility costs are measured as the percentage increase in total wealth (allocated entirely to the taxable account) needed to compensate the investor for following the suboptimal policy. Bottom panel: The shadow price measures the amount of taxable wealth the investor is willing to pay to receive an additional dollar in his tax-deferred account. The basis-price ratio is set at  $p^* = 1.0$  and nonfinancial income and retirement contributions are assumed to be zero.

## *The “Annuity” Alternative—What’s Different?*

- **The Annuity Case not explored in the broader literature—three different rather than two different tax treatments (heart of the contribution)**
  - **deterministic returns examined here (reluctance to use general techniques for addressing uncertainty)**
  - **E-V approach is awkward relative to CRRA optimization or arbitrage—old criticisms of quadratic utility; interpret risk aversion coefficient**
  - **Author deserves credit for being among the first (if not the first) to be sensitive to tax location issues**

## *The Annuity Alternative (cont.)*

- **The third (annuity) tax treatment is interesting—no natural limit to the quantity of investment, unlike the tax-deferred account. The tax deferred account is more attractive (pre-tax returns received) than the annuity account—annuity account is taxed at ordinary rates for all investment income—more attractive for bonds than equity.**
- **Tax treatment for bonds in the annuity account is more attractive than in the taxable account due to tax deferral.**
- **I would emphasize and explore directly the tradeoff between special annuity costs (fees) and the value of the tax deferral for bonds—Dammon, Spatt and Zhang (*JF*, 2004) address mutual fund fees in an analogous fashion in an arbitrage analysis—one way that they get equity into the tax-deferred account.**

## *The Annuity Alternative (cont.)*

- **Extra costs of annuities typically considerable—how viable in practice is the opportunity to own annuities for the purpose of owning bonds? Interesting that there is not more aggressive competition in annuity fees.**
- **The paper observes that in some cases equity can be advantageous to hold via an annuity—tradeoff between the value of deferral and the extra taxation of equity in the annuity due to taxation at the ordinary rate. Some caveats:**
  - **Dividends (formerly taxed in U.S. at ordinary rates) are a small portion of equity returns**
  - **Deferral on equity taxation of capital gains available without an annuity wrapper (see methods in Dammon, Spatt and Zhang (*RFS*, 2001))**
  - **Most dividends now taxed as capital gains in the U.S. (harder to get equity into the annuity account)**

## *References*

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