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Tax Efficient Management of Traditional Mutual Funds

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Northfield Webinar

December 2022

Motivation

- Since the introduction of tax sensitive portfolio optimization at the lot level by Northfield in 1995, there have been significant advances to maximize after-tax risk adjusted returns in separately managed accounts.
- Over the same interval, both passive investing in general and ETFs have greatly eroded the market share of traditional mutual funds.
- The US SEC already requires mutual funds to publish after-tax returns as part of marketing material, a fact of which investors are increasingly cognizant.
- A recent class action lawsuit against Vanguard for poor tax management of one of their funds has focused even greater investor attention on the issue.

Introduction

- This presentation will illustrate what techniques can be usefully employed by open end mutual funds to be optimally "tax smart", as obviously preferred by taxable investors.
- Among the challenges are that relative to traditional mutual funds, ETFs have legal methods to make themselves more tax efficient, in addition to the low turnover associated with generally passive management.
- In the US, funds are subject to more restrictive treatment of capital gains and losses. Almost all mutual funds have heterogeneous shareholders that include both taxable and tax-deferred investors (e.g. 401K assets).
- Finally, mutual funds frequently have daily cash flows from investors, adding money to the fund or making withdrawals. In turn, the fund is required to make daily trades, which sometimes necessitate violations of "wash sale" rules.

No Man Can Serve Two Masters

- Retail mutual funds generally have a mix of both taxable and tax-advantaged (deferred or exempt).
- For either passive or active management, the same portfolio cannot be optimal for both taxed and non-taxed investors at the same time.
  - Taxable and non-income taxed municipal bonds are held in separate funds. *All funds could be similarly separated.*
- Since the 1970s, funds exploited tax effects in equity pricing.
  - In those days, dividends were generally taxed at a higher rate than long term capital, so firms like Wells Fargo sold "yield tilt" funds to institutional investors on the theory that taxable investors would avoid high dividend yield stocks, making them underpriced relative to growth stocks.
  - See Modern Portfolio Theory (Rudd and Clasing, 1982), Supplement to Chapter 5 for analytical discussion.

Mutual Funds Versus Separate Accounts

- US taxation of mutual funds does not permit "pass through" of net capital losses to fund shareholders.
  - Net capital losses must be carried forward into the next tax year.

- Mutual funds with net realized capital gains during a year must make a one-time capital gain distribution to shareholders (like a big dividend).
  - This is particularly harmful to some shareholders who may have joined the fund after the capital gains were realized.

- When withdrawing value from a fund, shareholders may designate which lot of fund shares they sold in order to minimize realized capital gains on appreciation
  - Most fund companies to do not make this accounting data easily accessible to retail investors.

Tax Effects on US Investors

- Possibly Applicable Tax Rules, see Simpson (2020)
  - Short Term Capital Gain / Loss (offset against ordinary income)
  - Long Term Capital Gain / Loss
  - Special five-year Capital Gain/ Loss (residential, Section 1202 rules for ventures)
  - Interest and discount/premium amortization US Government Bonds
  - Interest and discount/premium amortization Municipal bonds for resident
  - Interest and discount/premium amortization Municipal bonds non-resident
  - Qualified dividends (equities of US companies held more than 44 days)
  - Non-qualified dividends
  - Other interest, dividends and amortization
  - For some entities, unrealized gains/losses
  - Section 1256 rules for derivatives (futures, options)
  - Section 998 rule for currency gain/loss as separate from local share capital gain/loss
  - Wash sale rules (there are now two popular interpretations)
  - Dozens of bi-lateral treaties on foreign withholding tax on dividends to US investors
- All these effects have been addressed by Optimizer users to refine tax optimizations

Mutual Funds Versus ETFs

- ETFs are allowed to engage in "heartbeat trading" while traditional mutual funds typically do not.
- A specially authorized investor (a hedge fund with tax exempt backers) invests money into an ETF in cash, then immediately withdraws the same amount, *accepting the withdrawal in the underlying securities* of the ETF
  - The appreciated securities are then sold, realizing the gain by a tax-exempt investor
- The ETF manager can designate which lots of securities are transferred to the heartbeat investor as those lots with the lowest cost basis (i.e. most taxed if sold).
  - This keeps the cost basis of lots remaining in the ETF as high as possible, minimizing capital gain realization.
  - Hedge funds are not charities. They do this to exact price spreads so related transaction costs are not zero.

SEC After-Tax Return Calculation

- The SEC requires that mutual funds calculate and disclose after-tax returns for hypothetical $1000 investments that occurred at various past dates (e.g. one, three, five years ago).
- The calculation requires that the highest Federal income tax bracket is assumed, but does not include state or local taxes, or the federal alternative minimum tax
- Most importantly, the calculation ascribes no economic value to unrealized gains and losses in a portfolio.
  - Asymmetric effects in the event unrealized gain/loss becomes realized
  - See diBartolomeo (Journal of Performance Measurement, 2022) and Advances in Portfolio Customization (northinfo.com) for alternative calculations of "after-tax return"

Understanding Targets Correctly

- Many mutual funds have explicitly designated benchmark (e.g. the S&P 500 or EAFE), yet few fund companies track after-tax benchmark performance thoroughly.
  - Doing the exact calculations of after-tax benchmark returns can be a lot of work given the constant inflows and outflows.
- There is useful literature on this issue
  - Garland (Journal of Investing, 1997)
  - Stein(Journal of Portfolio Management, 1998)
- An efficient shortcut to estimating after-tax benchmark returns is presented in Gulko (General Re, Working Paper, 1999).

Wash Sale Effects in Mutual Funds

- Mutual funds are subject to inflows and outflows of funds when investors choose.
  - SEC regulations require that redemptions be disbursed to investors within a relative short time window under almost all circumstances.

- Some passive index funds that have been around for a long time may have as many a million tax lots from previous transactions.
  - For index funds trying to achieve low tracking error to the index, inflows and outflows create tradeoffs between trying to simultaneously keep taxes and tracking error low.

- "Wash sale" rules can force capital losses to not be counted in the current year but be treated as adjustments to the cost basis of new positions, which typically implies being carried forward into subsequent tax periods.

An Update on the Wash Sale Rule

Our software users have two choices of wash sale logic as is necessary given different legal interpretations of the wash sale rule that are now in use in the United States.

The basic difference between the "traditional" wash sale logic and the "updated" logic is easy to illustrate. Assume you have three lots of IBM with the following attributes:

IBM is currently trading at $150 (10/13/2022)

Lot 1 was purchased on 6/1/2022 at $190
Lot 2 was purchased on 10/1/2022 at $135
Lot 3 was purchased today 10/13/2022 at $150

From an objective of tax loss harvesting, you would like to sell Lot 1 to harvest the $40 (190-150) capital loss. Under traditional logic doing so would create a "wash sale".

However, it is possible to sell Lot 1 without creating a wash sale ***after*** Lot 2 and Lot 3 have already been sold (e.g. use FIFO for recent transactions). Some financial service providers have taken the legal view that selling all three lots ***simultaneously*** will not be considered a wash sale so that our Optimizer now supports either view.

Ignore the Wash Sale Rule?

- One useful but rarely implemented approach to dealing with the restrictions of the wash sale rule is to build it into the portfolio objective function for optimization.
- In this approach, we take the position "we don't care about violating the wash sale rule whenever it is economically sensible to do so for our investors".
- This comes down to putting an economic value on a being able to count a tax loss this year as compared to being able to claim that tax loss in some future year.
  - We may or may not have realized gains to offset in the current year but we know the year-to-date situation.
  - We need to consider time value of money if we will be getting a tax deferral
  - We don't know whether we will or will not have realized gains in some future year (e.g. the market might crash and we won't need tax losses)

Optimal Wash Sale Behavior

- If we can ascribe economic value to the difference between getting a tax loss in the current year and taking that loss in a future tax year, we can build this information into the optimization problem.

- For Northfield optimizer users, implementing this is mechanically easy.
  - For sales, adjusting the cost basis of exist "at loss" lots that would create a wash sale rule violation if sold.
  - For buys, adjust the transaction costs of buying securities if that buy would turn losses on previously sold lots into wash sale violations.
    - Note that this can be done as a ticket charge, as the loss of economic value would be the same irrespective of the size of the buying transaction.

Maintaining a "Cushion of Current Losses"

- It should be intuitive that mutual funds would try to maintain a "net realized capital loss usable this year"
  - However, since net losses are not distributable a fund doesn't want to generate more losses than necessary to offset likely realized gains that would exist at the end of the year.
  - Our systems are indifferent to "excess" losses
- The most obvious scenario of having to realize gains would be a sharp market decline after a long period of appreciation.
  - The market decline might trigger large amounts of client withdrawals which would require selling lots that were at low cost-basis resulting in realized capital gains.
  - Estimating the correct amount of "losses usable this year in reserve" involves the likelihood that a fund's value will decline by a particular percentage at any time between now and the end of year (i.e. not just at the end of the year). See Kritzman and Rich (FAJ, 2019)

Optimizing Ex Post Reconciliation

- Portfolio accounting and analytical systems for taxable portfolios naturally track tax lots by identifying each lot with a serial number, so that relevant collateral information (e.g. cost basis, date of acquisition) can be tracked for tax purposes.

- There is nothing in the tax code requiring that the selection of which tax lot to sell must be identified *before* a trade is made.
  - Depending on the actual price at which a lot is sold, there may be circumstances where a lot that was expected to be sold a small loss or small gain would result in the opposite.
  - If the sign of profit/loss on a sale of a given lot changes from expectations, it may be possible to revise which lot had been sold to a different lot that is more advantageous.
  - This can be implemented mechanically by always sending a new lot ID through with sale orders and reconciling after the result is known.

Stylistic Considerations

- The easiest strategy to make tax efficient are quantitative strategies that are based on portfolio level exposures to factors or security attributes.
  - This allows individual securities to be freely substituted for one another while still meeting strategic objectives.

- The most difficult strategies are passive index funds that are trying to achieve a very low tracking error by "nearly full replication".
  - For many passive funds, a tracking error of 50 basis points is enough to provide enough flexibility to achieve a high degree of tax efficiency.
  - Passive strategies for small cap indices may be particularly troublesome in that the way securities typically exit the index is to increase in value so much as to be excluded from the "small cap" definition at the points in time when the index is reconstituted (e.g. Russell 2000).

The "*S&P 150 out of 500*"

- For tax sensitive passive index funds, our final suggestion is the definition of security "cohorts".
- For example, rather than replicate the S&P 500 with 500 securities, do so with a smaller subset like 150 securities.
  - This kind of "sampling" for tracking an index is common in fixed income portfolios.
  - While tracking errors will be higher than with full replication it should be remembered that passive portfolios with tracking error are equally likely to outperform the index as underperform, so the true economic penalty to tracking error is quite small.
  - You then have 350 securities within the index or several thousands of securities from outside the index to use as close substitutes (i.e. as in pairs trading) when transacting a particular security from the basic 150 would be disadvantageous from a tax perspective.

Conclusions

- The US tax regulations for traditional mutual funds are materially disadvantageous relative to separate accounts and ETFs.

- "Tax smart" investing methods have come a long way since the 1990s but their use in mutual funds has been constrained by the ambiguity associated with an investor base that is a mix of taxable and tax-advantaged money.

- Even analytically large problems (e.g. the million tax lot index fund) are tractable with modern analytical tools and some sensible computational shortcuts.