

# Optimization of Taxable Institutional Portfolios

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# Motivation

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While most asset managers think of taxable portfolios as being part of a “private wealth” business, the current value of US taxable asset owner portfolios (e.g. insurance companies) is about \$13 Trillion.

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Globally, we estimate the value of insurance company AUM at around \$36 Trillion.

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There are also some other types of institutional investors with material assets, such as special trust funds set aside for diverse activities (e.g. dismantling of nuclear power plants, payouts to claimants in class action lawsuits).

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Commercial banks also hold a wide range of securities, although what types of assets are allowed on a bank balance sheet varies widely by country.

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# Outline

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In this presentation, we will illustrate how neither “tax dumb” asset management, nor simple techniques like “tax loss harvesting” are sufficient and propose methods that will allow more efficient management of taxable institutional portfolios.

- For financial operating companies such as insurance companies, there are a host of conflicting considerations that may influence investment policy.
- While “tax aware” investing has long been relevant to institutional investors, there are far more overlapping issues such as regulatory requirements and the need for constant liquidity.
- The bulk of the presentation will be devoted to two exemplar cases, the optimal management of a single portfolio with several conflicting preferences and the joint optimization of multiple portfolios subject to different preferences and constraints.



# Types of Taxable Asset Owners

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We will consider three broad types of taxable institutional investor

“Pass through” vehicles (e.g. US mutual funds) where the taxable events of the fund are distributed proportionately to shareholders.

- Funds are often subject to special rules and restrictions that do not apply to individual investors

Taxable investment trusts and funds that pay their own taxes, before making distributions to beneficiaries, such as “Superannuation” retirement funds in Australia.

Operating companies that invest in financial assets (e.g. insurance companies) are taxed in the usual way (income and capital gain are separate concepts).

- Trading desk profits at banks and securities dealers are treated as ordinary corporate income.

# The “Laundry List” of US and Similar Tax Rules

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

# Understanding Targets Correctly

Many taxable institutional investors have explicitly designated benchmarks (e.g. the S&P 500 or EAFE), yet few companies track after-tax benchmark performance thoroughly.

- Doing the exact calculations of after-tax benchmark returns can be a lot of work given frequent 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 Reinsurance Working Paper, 1999).

# A Pass Through “Pass Through” Funds

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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.

1. 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).
2. Mutual funds 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.
3. 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.
4. 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.

For more details on tax efficient management of mutual funds see [Tax Efficient Management for Traditional Mutual Funds \(northinfo.com\)](http://northinfo.com)

# 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 always being in separate funds. *All funds could be similarly separated.*



Since the 1970s funds have 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.



# Taxable “Pure” Investors

Taxable “long term” include entities such as trust funds set up for a particular class of beneficiaries.

- More than \$30 Billion in trust funds were set up since 1979 in response to class-action lawsuits over health care costs associated with exposure to industrial asbestos.
- Another good example are “NDTs”, set up to pay for the safe “decommissioning” of nuclear power plants once their useful lives are complete.

Another key example are “Superannuation” funds, which are retirement plans in Australia that combine both defined contribution and defined benefit options.

- “Supers” are run by financial firms or by member groups (e.g. labor unions).
- They are subject to capital gain tax.
- Other unusual features of the Australian tax code include “franking credits” which are sometimes negative taxes on qualified dividends.

The investment objectives of these funds are simple compared to financial operating companies (e.g. insurance companies), so applicable regulation is relatively light.

# Financial Operating Companies

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- Unlike other taxable investors, financial operating companies such as insurance companies and banks have many considerations that go into investment decision making besides trying to maximize “risk-adjusted, after-tax returns.”
- Among these “other considerations” are:
  - Minimize taxes
  - Liquidity requirements to pay insurance claims or withdrawals of bank deposits (e.g. Silicon Valley Bank).
  - Cash flow availability to fund capital calls on private investments (e.g. real estate, private equity)
  - Maximizing operating earnings for shareholders that are only indirectly related to investment objectives.
  - Maintaining a “high rating” from a traditional credit rating agency that often specialize in a particular type of company (e.g. A.M. Best for insurance companies).
  - Special accounting rules that exempt some assets from being “marked to market.”
  - Regulatory requirements for *constant financial solvency, which perversely implies short-term risk focus for what would otherwise be long-term investors.*
  - Statutory limitations on the types and amounts of financial assets that can be held.

# Tax Gain Harvesting?



One obvious example of conflict among the objectives of a financial operating company is the situation of “tax gain harvesting.”

The concept of “tax loss harvesting” has gained wide acceptance in private wealth investing to reduce the economic impact of capital gain taxes.

Under the accounting rules applied to insurance companies in many jurisdictions, only realized capital gains (i.e. subject to likely taxation) can be counted for the calculation of operating profits and loss.

When insurance companies are having weak operating results, they will often “harvest gains” to increase reported profits for shareholders, although this practice increases rather than decreases the extent to which taxation will reduce investment returns.

# Enterprise Driven Investing



Our conception of how to organize investing for a financial operating company that includes all of the aforementioned issues is called Enterprise Driven Investing.

The motivation and general structure of EDI was put forward in a paper by Crow, diBartolomeo, Pohlman and Poutsiaka (Insurance Assets Under Management, 2021)

- [Enterprise-Driven-Investing-EDI-for-Insurers-V2.0---Active-Customization-AC.pdf \(insuranceaum.com\)](#)

The major contribution of EDI is to set explicit procedures that can be used to set investment policies at the enterprise level as compared to ad hoc discussion among a firm's management team.

- EDI procedures separate what changes are needed to portfolios due to changes in financial market conditions from changes needed to portfolios resulting from the firm's operating issues.
- Once in place, EDI provides procedural consistency avoiding hasty decisions in times of market or firm stresses (e.g. senior staff turnover).

## CPM: One Optimal Portfolio with Many Wants and Needs



In the case of one portfolio, subject to influences other than “maximize risk-adjusted after-tax return” a direct way to implement EDI is the method of Centralized Portfolio Management.

- CPM was first proposed by me at the 1992 Northfield conference to more efficiently run large asset owner portfolios with multiple external managers.
- The method has been implemented for both private wealth investors (e.g. Parametric) and for taxable institutional investors (e.g. Vanguard Australia).
- The basic idea is to have multiple independently created portfolios, which are then blended together in an analytically optimal fashion to be traded as a single portfolio.
- For discussion see [A Radical Proposal for the Operation of Multi-Manager Investment Funds \(northinfo.com\)](http://northinfo.com) and [northinfo.com/documents/817.pdf](http://northinfo.com/documents/817.pdf).

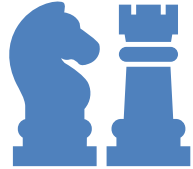
The tax optimization process for the independent sub-portfolios is structurally about the same for institutional portfolios as for high net-worth portfolios.

# Implementing EDI via CPM

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- To implement EDI via the method Centralized Portfolio Management we need to first a set of portfolios that are considered optimal in terms of *best fulfilling one aspect* of the mixture of corporate objectives, *with minimal consideration of competing objectives*.
  - The base portfolio that maximizes the conventional objective of “risk-adjusted, after-tax return”
  - The portfolio that maximizes liquidity
  - The portfolio that maximizes likely credit rating
  - The portfolio that is least like to violate regulatory constraints.
  - The portfolio that best supports near-term operating profits.
- Once we have the full set of “objective maximizing” portfolios we can then decide on the relative importance (i.e. weights) of the competing portfolios and use the CPM method to merge the “single purpose optimal portfolios” into the “enterprise optimal portfolio.”

# Determining CPM Weights for EDI



**A formal approach to determining “weights” among the various “optimal single purpose” is the Analytic Hierarchy Process proposed by Tom Saaty (University of Pittsburgh) in 1980.**

It is a mathematical form of an “expert” system in which complex decisions are broken down into a series of multiple-choice questions.

A set of numerical matrices are parameterized by domain experts connecting the possible responses to the multiple-choice questions to the range of possible outcomes (e.g. in this case allocation weights).

Widely used in decision theory (over 300 universities offer AHP courses).



**Long history of use for investment allocation decisions emphasizing statistical robustness.**

Khaksari, Shahriar, Kamath, and Grieves (*Journal of Portfolio Management*, 1989)

Bolster and Warrick (*Journal of Wealth Management*, 2008)

diBartolomeo (chapter in Rudd and Satchell, 2014).



**Here is an old video illustrating how we implemented AHP for retail investors, [https://www.northinfo.com/videos/Northfield\\_AHP.mp4](https://www.northinfo.com/videos/Northfield_AHP.mp4)**

# CPM Weightings by An “Optimal” Investment Committee

If the differences across the single purpose optimal portfolios are not extreme, we can use traditional investment performance metrics (e.g. Sharpe Ratio) in an ex-ante fashion to determine optimal weights.



In Scherer (Journal of Asset Management, 2023), a methodology close to CPM is proposed to implement the diverse views of members of a hypothetical “investment committee” at an institutional investor.



Again, the idea is to form “single opinion” optimal portfolios and blend them accordingly for greater efficiency.

In the EDI application of Scherer’s method, each economic objective of the enterprise is represented in the “investment committee” structure.



# Joint Optimization of Multiple Related Portfolios

The other possible circumstance that arises in a taxable institutional investor is the situation where multiple separate portfolios must be maintained for regulatory reasons.

- A large insurance company might have hundreds of portfolios each separately dedicated as the reserves for a particular type of insurance in a particular jurisdiction.
- For example, the reserves to pay claims for car insurance in Texas would be a separate portfolio from the portfolio that is the reserves for life insurance in Switzerland.
- Each portfolio will be subject to their own constraints, level of risk tolerance, and tax rates.

This problem can be expressed as a spectrum of solutions

- At one end of this spectrum would be optimizing each portfolio separately and treating each portfolio as an independent entity.
- At the other end of the spectrum would be merging all the portfolios into one large portfolio with parameters based on “value weighting” which can then be optimized.
- Somewhere between the end points is the true optimal solution that conforms to all the constraints applicable to individual portfolios while allowing synergies to arise across portfolios.

# Northfield Joint Optimization as a “Household”

A method for joint optimization of taxable portfolios was first put forward in 2005 in the context of private wealth portfolios for related parties (e.g. the members of a household),

- [Northfield News- May 2005.pub \(northinfo.com\)](#)

A more streamlined method that has been implemented for client use is described in [Northfield News June 2019 \(northinfo.com\)](#).

One key difference between the methods is that the new method incorporates what we call “fairness” constraints.

- This process prevents larger portfolios from influencing the joint optimization so overwhelmingly that the economic objectives of smaller value portfolios are made worse rather than better.
- While the joint optimization will always increase the joint objective function, the implementation of fairness constraints would be made necessary by corporate policies such as paying staff bonuses based on the performance of portfolios for separate operating units.

# Conclusions

The optimal structure of institutional taxable portfolios has both similarities to and differences from private wealth taxable portfolios.

- For “pass through” funds, the differences arise from a relatively small number of differences in how taxation is applied, and how fund operations must address those requirements.

For taxable “pure” investor fund, optimal processes are relatively similar to a single private investor from a tax perspective.

- On the other hand, taxable asset owners will often need to optimize across multiple external managers.

For financial companies such as insurance companies and banks, optimizing asset portfolios to maximize conventional investment objectives (e.g. risk adjusted, after-tax return) may conflict with many other “wants and needs” arising from the firm’s operations.

- We have presented “Enterprise Driven Investing” as a conceptual framework for managing financial asset portfolios in this context.
- We have presented two approaches to Centralized Portfolio Management to implement EDI for single portfolio, multiple objective cases.
- We have presented “Householding” as the approach to multiple portfolio, multiple objective cases.