Building a More Tax-Efficient Portfolio: The Gerstein Fisher Tax-Managed Equity Strategy

By Gregg S. Fisher, CFA, CFP®, President & Chief Investment Officer

At Gerstein Fisher, we recognize that taxes can be one of the largest drags on investors’ bottom-line results. Yet taxes remain largely overlooked in the field of investment management. Gerstein Fisher’s Tax-Managed Equity strategy uses a quantitative approach to provide investors with core asset class exposure with tilts to specific risk factors, while adding an active tax management overlay. The strategy offers investors the potential for significant post-tax alpha.

When selecting investments with which to implement their strategic asset allocations, many investors rely on low-cost, passively managed index funds. Though more tax efficient than many active strategies, index funds are still not immune to the negative impact of taxes on investors’ bottom-line results. Let’s look at a quick hypothetical example that illustrates this point: suppose an investor named John pays no taxes on capital gains or income and investor Jane pays 40% taxes on income and 20% taxes on capital gains. John and Jane both invest $100,000 in an S&P 500 index fund at its inception in 1976. They decide to make no further contributions and lock their investments away for 36 years. At the end of 2011, John is happy to see that his investment is worth $3,257,426. Jane, on the other hand, finds her investment value to be $2,023,715 – more than $1 million less than John’s (see Exhibit 1). Jane lost nearly 40% of her investment gains to taxes. This example shows how significant the effect of taxes is on a taxable investor’s portfolio over extended time periods.

While this example is oversimplified – it is unrealistic that an investor would pay zero taxes – it illustrates how, when one factors in the power of compounding over a long period, taxes can lead to considerable depreciation in an investment’s value. Indeed, there is no way to completely avoid taxes – as Ben Franklin famously said, “in this world nothing can be said to be certain, except death and taxes”.

However, there are ways investors can reduce their tax bill while maintaining a pre-tax return that will significantly improve their after-tax results. Research has shown that active tax management can add a 1% benefit per year on an after tax basis compared to the average 1.3% tax cost paid annually by investors in mutual funds listed on US exchanges – or a net benefit of 2.3%. This paper details the rationale behind Gerstein Fisher’s approach to tax-managed equity investing, as well as the process used to execute it.

Exhibit 1: The Drag of Taxes on Portfolio Value

<table>
<thead>
<tr>
<th>Ending Portfolio Value</th>
<th>Annualized Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tax</td>
<td>Post-Tax</td>
</tr>
<tr>
<td>$3,257,426</td>
<td>10.36%</td>
</tr>
<tr>
<td>$2,023,715</td>
<td>8.88%</td>
</tr>
<tr>
<td>38% value lost to taxes</td>
<td></td>
</tr>
<tr>
<td>40% tax on income</td>
<td></td>
</tr>
<tr>
<td>20% tax on gains</td>
<td></td>
</tr>
</tbody>
</table>

Source: Thomson Reuters, Gerstein Fisher Research

1 Maymin & Fisher (2011)
2 Arnott, Berkin, & Ye (2001)
3 Maymin & Fisher (2011)
Quantitative Risk Modeling and the Multi-Factor Approach

The first step in the process of creating a tax-managed portfolio is to create an index-like portfolio of stocks. The goal at this stage is to replicate the structure and composition of the index without purchasing all of the individual constituents of the index (for cost and tax reasons which will be explained shortly). This can be done by using what is referred to as a multi-factor model.

The basic premise of the multi-factor model is that the risk and return of a security can be explained by its exposures to different ‘factors’, which can be quantitatively identified.

The inception of the financial factor model that we know today can be attributed to Markowitz’s Modern Portfolio Theory from the early 1950s. The theory stated that the risk/return profile of two stocks is better than the risk/return profile of either one of the stocks individually, provided that the correlation (the extent to which their prices tend to move together) between the two stocks is not perfect. Building on Markowitz’s research, several academics – including Jack Treynor, John Lintner, and William Sharpe – postulated that a single-factor model was best suited to explain the risk-return profile of a stock. This single-factor model was formalized by Sharpe as the Capital Asset Pricing Model (CAPM)\(^4\), which states that a stock’s expected return hinges solely on its beta; i.e., its relationship to the market.

In the mid-70s, Stephen Ross introduced the Arbitrage Pricing Theory (APT)\(^5\). APT was the foundational basis for all financial multi-factor models. The core concept of APT was that stocks with similar exposures to different ‘factors’ should have similar risk and return expectations. In the early 1990s, Eugene Fama and Kenneth French analyzed the returns of all US equities over different independent time periods and identified three systematic sources of risks (or factors) that explained over 90% of variance in portfolio performance.\(^6\) These factors were market (premium for being invested in stocks vs. bonds), size (premium for being in smaller vs. larger company stocks), and value (premium for being in value vs. growth stocks). In 1997 Mark Carhart identified an additional systematic factor, momentum\(^7\) (premium for being in stocks with positive recent price momentum), that helped explain the persistence of mutual fund returns. The history of factor-based research over the past 60 years is illustrated in Exhibit 2.

Given that we know today that multiple factors contribute to the variation of stock returns, how do we build models to account for this complexity? Instead of using one factor, as in CAPM, or three factors, as described by Fama/French, multi-factor models (MFMs) can incorporate a wide variety of risk factors to explain the performance of a given stock or portfolio. The basic structure of an MFM is outlined on the next page:

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**Exhibit 2: The Evolution of Multi-Factor Investing**

<table>
<thead>
<tr>
<th>Capital Asset Pricing Model</th>
<th>3-Factor Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>A stock’s return is dependent on its sensitivity to non-diversifiable market risk.</td>
<td>90% of a portfolio’s return can be explained by 3 factors: market, value and size.</td>
</tr>
</tbody>
</table>

|------|------|------|------|------|

<table>
<thead>
<tr>
<th>Modern Portfolio Theory</th>
<th>Arbitrage Pricing Theory</th>
<th>4-Factor Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>A combination of assets can have a better risk/return profile than any individual asset by itself.</td>
<td>Asset returns depend on sensitivities to various factors that can be modeled.</td>
<td>In addition to the three factors, momentum helps explain portfolio returns.</td>
</tr>
</tbody>
</table>

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\(^4\) Sharpe (1964)  
\(^5\) Ross (1976)  
\(^6\) Fama & French (1992); Fama & French (1993); Fama & French (1996)  
\(^7\) Carhart (1997)
\[ R_{\text{asset}} = R_{\text{risk-free}} + \beta_1 f_1 + \beta_2 f_2 + \ldots + \beta_n f_n \]
where,

- \( R_{\text{asset}} = \) return on asset
- \( R_{\text{risk-free}} = \) return on risk-free asset
- \( \beta_n = \) sensitivity of asset to factor \( n \)
- \( f_n = \) return of factor ‘\( n \)’

As mentioned previously, MFMs find their root in the Arbitrage Pricing Theory (APT) pioneered by Stephen Ross. APT is an extension of CAPM in that it posits a linear relationship between a security’s returns and that security’s covariance with certain variables. However, instead of being restricted to one source of non-diversifiable risk, as is the case in CAPM, APT allows for multiple sources. APT states that a portfolio’s expected return is determined by its exposure to various systematic risk factors. It is this rationale that drives the construction of modern day MFMs.

MFMs may be macroeconomic, fundamental, or statistical based on how these underlying factors, \( f_1 \) to \( f_n \), are defined. Macroeconomic MFMs use time series of economic variables to model a linear relationship between an asset’s expected return and different economic shocks. Variables include rates of inflation and unemployment, growth of industrial output, the term structure of interest rates, and others.

Fundamental MFMs are based on company-specific characteristics such as past returns, market capitalization, book-to-market value, earnings yield, and other fundamental data derived from a company’s balance sheet and income statement. The factor sensitivities for fundamental MFMs are determined using observable company attributes as opposed to conducting a time series linear regression. Fundamental factors do not require forecasting, as they are known and observable. Their values are not subjective; they are known at the beginning of each month.

Statistical factor models use asset returns as an input to determine the factors and factor sensitivities, with a goal of maximizing the explanatory power of the model created. These models use quantitative methods more esoteric than those used in macroeconomic and fundamental models, looking for patterns that would otherwise remain hidden.

No matter what type of MFM one uses, the basic principle remains the same – securities with similar exposures to the factors in the chosen MFM are expected to have similar risk/return characteristics.

Gerstein Fisher uses a proprietary MFM to construct portfolios. Instead of buying all the stocks in a given index, we build a portfolio using a subset of the stocks in the index that have, when combined, the same factor exposures as the index. By matching these factor exposures, the portfolio constructed is expected to have the same risk/return profile as the index on which it is based. Any asset-specific deviations are expected to cancel out between securities over time. For example, a portfolio of 200 stocks can provide an investor with almost identical sector, industry, risk factor, country, and currency exposure as an index that consists of 1,000 stocks. The reasons why all securities are not bought are two-fold:
1. To reduce transaction costs
2. To enable tax loss harvesting

The first reason is intuitive: holding fewer securities will naturally result in lower transaction costs. The second reason forms the basis of active tax management, to which we now turn.

**Proactive Tax Management: Tax Loss Harvesting**

Tax loss harvesting (“TLH”) is the process of selling securities in an investor’s portfolio at a loss and simultaneously replacing the sold securities with securities that have similar factor exposures to the ones that have been sold. The first component of tax loss harvesting is simple – if there is a security with an unrecognized loss in your portfolio, sell it to realize that loss. The loss can then be used to offset capital gains in other parts of the investor’s portfolio so as to reduce the final tax bill. If the investor doesn’t have any capital gains in a particular period, he or she can still use up to $3,000 of portfolio losses realized to offset taxable income. Any left-over realized losses are an asset that can be carried forward indefinitely into the future and can be used to offset any future capital gains or up to $3,000 of income annually.

The second component – replacing sold securities – is accomplished using the previously described multi-factor model. The securities that are used to replace the sold securities have similar factor exposures to the sold securities and hence the overall portfolio structure is maintained. (Due to the “wash sale” rule, investors...
cannot sell a stock for a loss and then re-purchase the exact same stock again for 30 days.) For example, suppose one held a portfolio of 200 securities based on an index of 1,000 securities. Let’s further assume that 10 out of these 200 securities had an unrealized loss; i.e., their current price was lower than the price at which they were bought. An active tax loss harvester would sell those 10 securities to realize the loss and replace them with the 10 most similar securities. Since the original portfolio consisted of only 200 out of the 1,000 stocks in the index, the investor has 800 other securities to choose from to get the portfolio back up to 200 securities. This is a simplified example of how the process of loss harvesting works and how sold stocks are replaced. There are additional intricacies involved in this process that include but are not limited to loss threshold (the minimum amount of loss on a security for it to be immediately sold off), trade-off with transaction costs, active risk management (the amount of expected deviation from the underlying benchmark index), and strategic risk factor exposures, all of which we take into consideration in this process.

The three primary areas in which tax loss harvesting can be used to add value are:

1. **Capital gains tax reduction:** Realized losses can be used to offset capital gains generated in the same portfolio to avoid paying capital gains taxes. In addition, the losses can be used to offset other capital gains outside of the portfolio, such as the sale of a business or an investment property. For example, in a volatile year such as 2008, an investor with a stock portfolio valued at $1 million in the beginning of the year could have easily harvested over $200,000 of capital losses. Should the investor have then executed a sale of a real investment in either a business or a real estate property within the next few years, he or she would have been able to save $30,000 in taxes (15% Long Term Capital Gains tax rate X $200,000 in losses) that would not have been available without tax loss harvesting. Constantly harvesting and accumulating capital losses when they are available also gives investors with concentrated portfolios of low cost-basis securities the ability to offset large, capital gains taxes upon sale, thereby reducing concentrated positions.

2. **Ordinary income tax reduction:** If an investor has no realized capital gains in a given year, the IRS allows individuals to offset up to $3,000 of ordinary income per year with net capital losses. The tax savings this provides can be meaningful. Assuming an individual realized $30,000 of losses and has no current or future realized capital gains, that individual could use those losses to offset $3,000 of income per year for the next 10 years. With the top Federal income tax rate at 35%, this would result in $1,050 of tax savings ($3,000 x 35% = $1,050) per year, or $10,500 in tax savings over ten years. The actual future benefits of the present tax savings are even greater since these savings can be reinvested in the current portfolio.

3. **Favorable capital gains tax rate swap:** An investor who consistently realizes both short-term and long-term capital gains across different investment accounts can use the difference between short-term and long-term tax rates to his advantage. Let’s assume the investor realizes $100,000 each in short- and long-term gains every year from, for example, a hedge fund investment. The investor also has an equity portfolio worth $1 million that has unrealized short-term losses of $100,000 and unrealized short-term gains of $100,000 (total cost basis is $1 million since net unrealized gains/losses are 0). The investor can realize the $100,000 in available short-term portfolio losses to completely offset his hedge fund account’s short-term gains for the year, reducing his tax cost by $35,000 ($100,000 X 35%). The investor now has an equity portfolio worth $1 million with a cost basis of $900,000. If the investor waits a year, his $100,000 of unrealized portfolio gains would turn from short-term to long-term. By realizing them as long-term gains, his tax cost would be $15,000 ($100,000 X 15% the current capital gains rate) in addition to the taxes from his hedge fund investment. The net $20,000 benefit ($35,000 savings plus $15,000 cost) is simply a result of the investor realizing losses on a short-term basis and deferring the realization gains until they can be classified as long-term.
**Portfolio Customization and Construction**

For Gerstein Fisher's Tax-Managed Equity strategy the process of portfolio construction begins with selecting the appropriate benchmark. The strategy can be implemented using a variety of indices that represent multiple asset classes. Exhibit 3 below shows a small sample of the indices that can be used as benchmarks for the portfolio. Socially responsible investing (“SRI”) themes can also be incorporated by filtering and customizing the appropriate index.

Once the appropriate benchmark has been selected, a subset of the stocks in the index will be used to create the portfolio. The initial portfolio can be built from cash or around current existing holdings. In brief, the portfolio is built in three stages, as described below.

**Stage 1 – Portfolio inception:** In this critical first stage, we start by analyzing pre-existing holdings to optimize the process of transitioning the portfolio into targeted allocations. By working closely with clients, we ensure all transitions are tax-aware and avoid unnecessary liquidation and gain realization.

**Stage 2 – Ongoing management:** The portfolio is optimized for tax benefits throughout the year – not only at year-end. We monitor losses on a daily basis, responding to market moves and tax law changes as well as handling account contributions, withdrawals and clients’ specific tax-related events, such as the sale of an investment property, in a tax-efficient manner. In the meantime, we actively monitor and manage the risk/return profile of the portfolio as transactions occur.

**Stage 3 – Portfolio deconstruction:** We target low-basis tax securities for gifting or disbursements as these arise, and avoid unnecessary tax cost by minimizing gain realization as partial redemptions or dispositions occur.

The ability to customize the portfolio based on personal circumstances provides a number of additional benefits as compared with mutual funds or exchange traded funds (ETFs), including:

- **Guideline flexibility:** Our portfolios can be tailored to virtually any investor mandate. For example, if a client’s wealth is significantly dependent upon the retail sector through her own crafts chain store business, we can lower the portfolio’s exposure to the retail sector.

- **Account initiation:** The client can contribute securities or cash to initiate the portfolio. If securities, a tax-aware transition that incorporates previous holdings with unrealized gains is possible.

- **Immunity towards redemptions by other investors:** Redemptions in mutual funds by some shareholders can result in realized capital gains for those still in the fund. With our tax-managed strategy, the only actions that will affect an investor’s tax situation are his or her own.

- **Tax-efficient tracking error management:** Index mutual funds and ETFs have to hold exactly what the index holds. If the index decides to remove a stock, ETFs and mutual funds would have to liquidate that holding irrespective of the tax implications. We can manage these tax costs by choosing to ignore some index changes or matching the resulting gain with an equal and offsetting loss. Ignoring index changes will not result in significant tracking errors since the portfolio factor exposures are matched to that of the index.

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### Exhibit 3: Benchmark Flexibility

<table>
<thead>
<tr>
<th>US Large Cap</th>
<th>Mid Cap</th>
<th>Small Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 100</td>
<td>S&amp;P Mid-Cap</td>
<td>S&amp;P 600</td>
</tr>
<tr>
<td>S&amp;P 500</td>
<td>Russell Mid-Cap</td>
<td>Russell 2000 (C/G/V)</td>
</tr>
<tr>
<td>Russell 1000 (C/G/V)</td>
<td>Morningstar Mid-Cap</td>
<td>Morningstar Small-Cap</td>
</tr>
<tr>
<td>MSCI EAFE (C/G/V)</td>
<td>MSCI EAFE Small Cap</td>
<td>MSCI World Index</td>
</tr>
<tr>
<td>MSCI Country Indices</td>
<td>MSCI Country Indices</td>
<td>S&amp;P Global 100</td>
</tr>
</tbody>
</table>

Socially Responsible Investing (SRI): Customized themes can be incorporated for any benchmark index.

Note: C/G/V represents Core, Growth and Value variations on selected benchmarks.
- **Intraday trading:** We can execute trades at any point during normal trading hours, as opposed to only at the close of the day for mutual fund transactions.
- **End-of-year planning:** We can accurately measure the year-to-date tax liability at any time as opposed to waiting until an (involuntary) distribution to know the amount and nature of taxable gains.
- **Estate and trust planning:** Our clients can gift highly appreciated securities or reorganize the portfolio as needed, often with minimal realization of gains. A pooled public fund does not have such flexibility.

### Quantifying the Benefits of Active Tax Management

The process of systematic tax loss harvesting has shown to add approximately 1% per year to after tax returns over a period of 25 years. These results are based on simulations assuming normal returns on securities and that all realized losses can be used to offset capital gains from other parts of the portfolio. Over the last decade, increased market volatility has resulted in benefits averaging approximately 2% in additional annual after-tax return. This positive return differential is dubbed “tax alpha” because it brings additional return through tax reduction from the losses harvested without compromising the pre-tax return or the underlying risk profile. In an age in which an overwhelming majority of actively managed funds cannot even beat their benchmark indices before taxes, the added after-tax returns from tax loss harvesting is substantial and does not entail significant active management risk.

Additionally, two trends are expected to further enhance the value of tax loss harvesting in the near future:

1. **Higher tax rates on the horizon:** Unless Congress intervenes, the expiration of the Bush-era tax cuts and the new healthcare reform tax will significantly raise current tax rates. The table below shows the current tax rates, the expected tax rates assuming Congress changes nothing between now and 2013, and the percentage difference between the two.

<table>
<thead>
<tr>
<th>Tax Category</th>
<th>Current Rate</th>
<th>2013 Rate</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Income</td>
<td>35%</td>
<td>43.4%</td>
<td>24%</td>
</tr>
<tr>
<td>Capital Gains</td>
<td>15%</td>
<td>23.8%</td>
<td>59%</td>
</tr>
<tr>
<td>Dividend</td>
<td>15%</td>
<td>43.4%</td>
<td>189%</td>
</tr>
</tbody>
</table>

### Exhibit 4: The Potential Trajectory of Tax Rates

Source: Tax Foundation, Gerstein Fisher Research

2. **Increased market volatility:** Due to a variety of macroeconomic uncertainties largely unleashed by the mortgage fallout of 2007 and subsequent liquidity crunch, equity markets in recent years have behaved very erratically following several years of exceptionally low levels of volatility. As the Chicago Board Options Exchanges VIX Index (a key indicator of equity market volatility) chart in Exhibit 5 shows, market volatility has seen higher and more consistent spikes since hitting its highest point ever in 2008 compared to the 15-20 year period prior to the financial crisis. Until these structural global economic uncertainties fade away completely, higher-than-average market volatility is likely here to stay for the foreseeable future. The good news in this is that the higher the volatility, the greater are the opportunities to harvest tax losses. The value of tax loss harvesting can be thought of as an option that increases in value with an increase in volatility.

### Exhibit 5: Market Volatility in Historical Context

**VIX Index – Jan. 1, 1990 to Dec. 31, 2011**

Source: Bloomberg, Gerstein Fisher Research
Conclusion
Based on proven investment concepts and executed within an objective, quantitatively driven framework, the Gerstein Fisher Tax-Managed Equity strategy seeks to provide investors with higher after-tax returns than they would earn through most index or actively managed funds. The rigorously monitored and entirely customizable strategy can be built around a variety of indices and incorporate myriad sector, stock, or social screens. We believe the ability for the investor to customize an index-like approach and reap tax alpha provides a compelling alternative to both passive and active management.
Bibliography


