

# Building a Strong Portfolio Core: The Gerstein Fisher Multi-Factor Growth Equity Strategy

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*At Gerstein Fisher, we believe our structured approach to growth equity investing offers a compelling alternative to both index and traditional active approaches. By delivering reliable asset class representation and carefully calibrated exposure to proven risk factors, we feel the strategy can serve as a strong core holding within a diversified portfolio.*

When selecting core investments like broadly diversified US equities, many investors rely on either passively managed index funds or traditional, actively managed mutual funds. Both of these approaches have their merits – but also their drawbacks. Too often, active management doesn't provide enough structure to ensure proper asset class tracking, and indexing can provide too rigid a structure, limiting a fund's flexibility to capitalize on market opportunities.

The Gerstein Fisher Multi-Factor Growth Equity strategy places proven investment concepts into an objective, model-driven framework to achieve higher expected returns through exposures to various risk and behavioral factors. The antithesis of a “black box” approach, the strategy provides clarity of objective, transparency of process, and liquidity of holdings.

This paper details the rationale behind our unique approach to managing growth equity, as well as the process used to execute on it.

## Why Should the Strategy Add Value?

In the early 1990s Eugene Fama and Kenneth French sought to determine which common risk factors are primarily responsible for the variation in stock returns – in other words, to answer the question, What sources of risk does the market systematically reward with higher returns? Prior to this research, academics and investors largely believed that a single factor model was best suited to answer this question. William F. Sharpe's Capital Asset Pricing Model (CAPM) stated that a portfolio's expected return hinges solely on its beta, or its relationship to the overall market. While this rationale is sensible,

in practice it simply does not work. Today, we know that multiple factors contribute to the variation of stock returns.

When Fama and French analyzed the returns of all US equities over different independent time periods, they identified three systematic sources of risk that explain over 90% of portfolio performance:<sup>1</sup>

- **Market** (Premium for being in equities vs. fixed income)
- **Size** (Premium for investing in small cap vs. large cap stocks)
- **Price** (Premium for being in value vs. growth stocks)

The Gerstein Fisher Multi-Factor Growth Equity strategy also incorporates **momentum**, which can be defined as the tendency of stocks to demonstrate consistent performance over a given period of time, or the tendency of past (over 3-12 months) winners to keep winning and losers to keep losing relative to their peers (recall Isaac Newton's first law of motion – “an object in motion will stay in motion...”).

It's important to distinguish momentum investing from market timing – a practice Gerstein Fisher neither practices nor recommends. Whereas market timing involves buying and/or selling securities based on an investor's projection of future market direction, momentum investing is based on looking backward at a stock's recent historical price trajectory and extrapolating this forward for a certain period of time based on historical relationships that are borne out by research and data. For example, research by Narasimhan Jegadeesh and Sheridan Titman revealed that historically momentum investing had provided excess returns.<sup>2</sup>

<sup>1</sup> Fama & French (1992); Fama & French (1993); Fama & French (1996)

<sup>2</sup> Jegadeesh & Titman (1993)

Though it is acknowledged in academic circles that momentum exists in the market (Kenneth French referred to it in a 2005 issue of *CFA Magazine* as “one of the biggest embarrassments of the efficient market theory”), there is no agreement as to *why* it exists. We believe that at least some of the momentum premium can perhaps be best understood as a consequence of investor behavioral biases. Behavioral finance theorizes that investors, as a whole, behave irrationally – albeit in systematic and predictable ways.

What is referred to as the representativeness heuristic entails looking at one event and making a judgment as to how closely it corresponds to other events occurring in the general population – essentially assuming that “like goes with like.”<sup>3</sup> This tendency may lead investors to mistakenly conclude that firms realizing extraordinary earnings growth today will continue to experience extraordinary growth in the future. These “informed” traders attribute the performance of ex-post winners to their stock selection skills and that of the ex-post losers to bad luck. As a result, they become overconfident about their ability to pick winners, thereby overestimating the precision of their positive signals for these stocks. Based on their increased confidence in these positive signals, they push up the prices of the winners above their fundamental values.

Academics have also derived risk-based explanations for the momentum phenomenon. In particular, research suggests that some of the profitability of investing in momentum strategies can be explained as compensation for bearing exposure to downside risk.<sup>4</sup> Stocks with greater downside risk, as measured by higher correlations conditional on downside moves of the market, have been shown to have higher returns. However, other tests<sup>5</sup> reject linear factor models, indicating that exposure to downside risk is only a partial, not a complete, explanation for the momentum effect.<sup>6</sup>

Whichever view one subscribes to, it is fact that momentum strategies have provided the opportunity for excess returns for at least the last 60 years in the United States. Momentum profits have also been found in most major developed markets throughout the world.<sup>7</sup>

These four factors – market, size, price and momentum – form the basis for the quantitative framework we use to construct the Gerstein Fisher Multi-Factor Growth Equity strategy, as explained further below. By focusing on risk/return relationships that are underpinned by sound economic reasoning and borne out by historical data, we seek to add value and help our clients achieve their financial goals.

When examined at the total portfolio level, the strategy offers additional potential benefits. Largely due to its significant momentum tilt, we believe the Gerstein Fisher Multi-Factor Growth Equity strategy can be a strong complement to an investor's value holdings. Our research suggests that the strategy has a lower correlation to value equities than the Russell 3000 Growth index, and that by simply rebalancing allocations to the strategy and to a value index back to a 50/50 target quarterly, additional value can be added due to the Diversification Effect.<sup>8</sup>

### How Does the Process Work?

At the highest level, The Gerstein Fisher Multi-Factor Growth Equity strategy uses value and momentum metrics to identify stocks we believe will outperform due to these factor exposures, and then controls for the unintended risks or biases that such a portfolio might entail – sector or industry concentrations, for example – through an optimization process. This results in a portfolio that “looks and feels like” the benchmark but contains far fewer stocks and has tilts to our desired factors. We use fewer stocks, seeking to contain the costs that would be associated with rebalancing a portfolio of thousands of stocks quarterly – costs that would likely offset any value gained from our investment process. We also expect to take advantage of the compensated risk of owning smaller capitalization companies by holding an allocation of approximately twice the general market weighting of small cap equities.

The long-term objective of the strategy is to achieve a greater return than the market, and the only systematic way to accomplish this is to overweight the portfolio to carefully managed risk factors relative to their market proportions. Investors should be compensated for this higher risk (as measured by a higher standard deviation than the

<sup>3</sup> Tversky & Kahnemann (1974)

<sup>4</sup> Ang, Chen & Xing (2001)

<sup>5</sup> Hansen & Jagannathan (1997)

<sup>6</sup> Conrad & Kaul (1998)

<sup>7</sup> Griffin, Ji & Martin (2005); Chan, Hameed & Tong (1999)

<sup>8</sup> Booth & Fama (1992)

index) in the form of the potential for greater returns – consistent with our research into the strategy's risk/return profile. The process works as follows:

### Step 1: Screening the Growth Universe

Within the universe of growth equity stocks, Gerstein Fisher focuses on both large and small companies in the Russell 1000 Growth and Russell 2000 indices. We then identify stocks with the most attractive momentum factors over the past 12 months, and, at the other end of the spectrum, the most value-oriented growth stocks (as determined based on measures such as price/book ratios). These stocks are ranked by our multi-factor model and placed into quintiles along the dimensions of both momentum and value. Those stocks that rank highest along both dimensions constitute our “buy list”. The list typically comprises approximately 100 names, while screening out stocks with trading volumes which are too low for us to be comfortable with their potential liquidity.

Exhibit 1 provides a graphical representation of this process. The green box denotes the buy list and the red box represents our sell/do-not-buy list. The blank boxes contain stocks from which we choose to maintain benchmark index tracking at an acceptable level (more on this in Step 2, below).

If we stopped the process here and simply built the portfolio with these 100 or so stocks, we could end up with a portfolio that is highly concentrated in one or two industries. For example, in the late 1990s this portfolio would have been made up almost entirely of internet stocks based on just these screens. To eliminate exposure to such unintended risks, we must put some parameters around the portfolio construction process. We do this in Step 2.

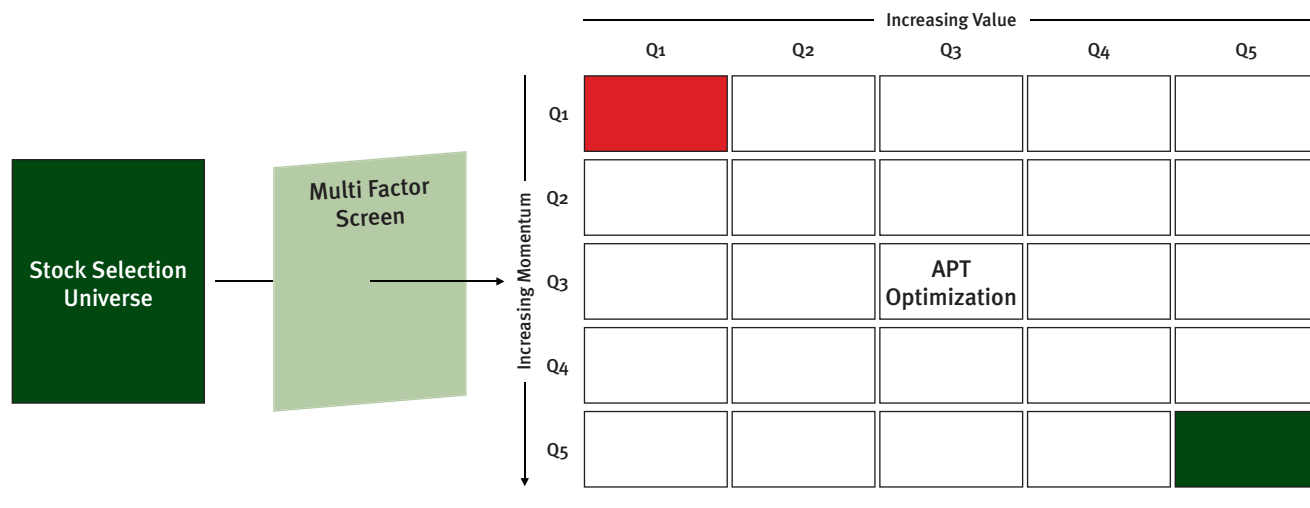
### Step 2: Constructing the Portfolio

Through a technique known as optimization, Gerstein Fisher uses quantitative models to identify the combination of stocks that will generate the highest level of expected return (net of transaction costs) while staying true to the benchmark with respect to characteristics like sector weights, average dividend yield, and so forth.

Recall that our objective is to construct a portfolio of approximately 150 stocks that resembles an index of nearly 1800 stocks. To accomplish this, we use a technique known as Arbitrage Pricing Theory (APT) to derive a representative sample of the index's holdings using our own value- and momentum-ranked stocks as inputs.

APT was pioneered by finance professor Steven Ross in 1976 and expanded upon by numerous researchers who followed<sup>9</sup>, and seeks to predict a security's expected

**Exhibit 1: Methodology Used to Implement the Strategy**



<sup>9</sup> Connor (1995)

return based on its sensitivity to various market and economic factors.

Examples of the macroeconomic factors that our models consider include:

- Overall broad stock market return
- Change in interest rates
- Change in oil prices
- Change in US dollar
- Slope of the yield curve
- Return for the industry of which the stock is a member
- Return of large, mid, and small stock groupings

Through optimization, we supplement our initial buy list (the green box in Exhibit 1) with other positions (the white boxes in Exhibit 1) to remove unintended biases or concentrations in the portfolio. The result of this process is a portfolio of approximately 150 stocks that, as a group, have factor exposures similar to the index, while maintaining a tilt towards the other risk factors that investors should be compensated for taking (i.e. small, momentum) – thus offering the potential for excess return.

On a systematic basis, our portfolio team re-ranks all stocks within the growth universe as described earlier and rebalances the portfolio to ensure that it continues to reflect our desired factor exposures. Positions on our sell list come out and as many of the names as our optimization process will permit from the buy list come in.

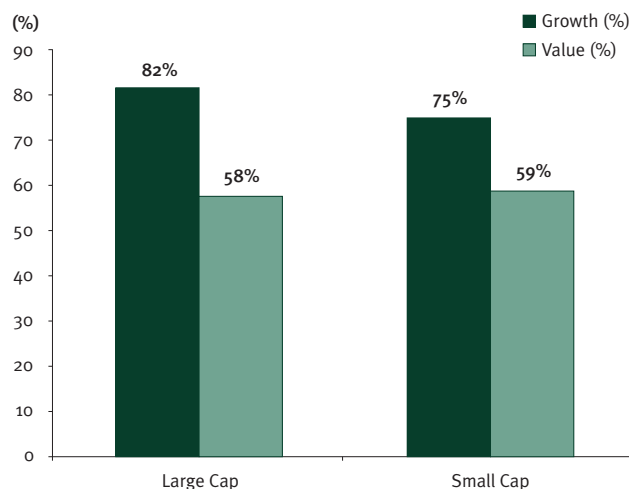
The flexibility to rebalance frequently provides Gerstein Fisher with an advantage over index funds that must continue to hold a stock until it is removed from an index – even if it is exhibiting negative price momentum and causing a drag on performance. Unlike an index fund, we can either sell a security with negative momentum or delay its purchase, and continue to hold onto a security with positive momentum even if the index rules suggest a sale.

### Why a Structured Approach for Growth Equity?

Interestingly, domestic growth equity has historically been an asset class in which active managers have actually eked out some outperformance over the index (see Exhibit 2). This may be partly explained by the fact that they are not bound to hold or sell stocks simply because they are constituents of the index. However, factor-based analysis of active growth managers' returns leads us to believe that much of their outperformance

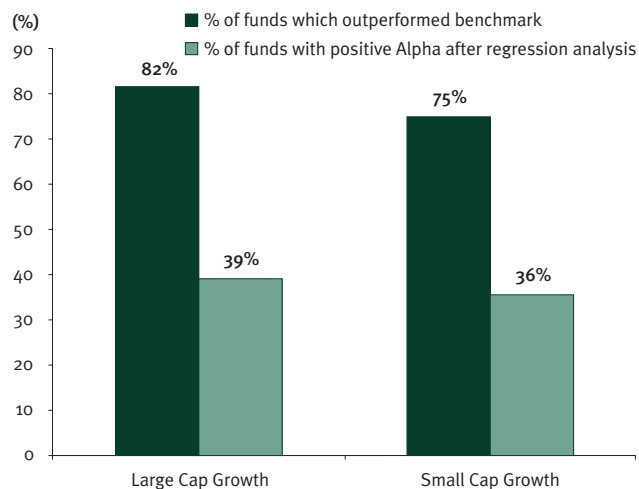
can actually be attributed to their exposure to various risk and behavioral factors – and not to manager skill (see Exhibit 3).

**Exhibit 2: Percent of Active Fund Managers Outperforming Benchmark – 10 Years starting October 1, 1999 ending September 30, 2009**



Source: Gerstein Fisher Research, Morningstar, Russell 1000 Growth Index, Russell 1000 Value Index, Russell 2000 Growth Index, and Russell 2000 Value Index.

**Exhibit 3: Percent of Fund Managers Outperforming Benchmark after Factoring in Momentum, Small, Value Risk Factors – 10 Years starting October 1, 1999 ending September 30, 2009**



Source: Gerstein Fisher Research, Morningstar, Russell 1000 Growth Index, Russell 1000 Value Index, Russell 2000 Growth Index, and Russell 2000 Value Index.

Please see disclosures (p.6) for important information on regression analysis.

It appears that the outperformance of small and large cap growth funds relative to their respective Russell indices in the chart above is far more common than positive manager “alpha”, or skill-based returns, once the factors of momentum, value and size are taken into account. In other words, much of what appears to be outperformance due to the manager’s stock picking acumen could be interpreted in many cases as exposure to one or more risk factors instead, namely, momentum, small cap or value.

This finding raises important philosophical issues regarding the investment risks for which active managers should be rewarded. Does the active portfolio consciously possess a size or style bias? If so, why? If the size, momentum and style tilts of an active fund are sufficiently stable, could an investor potentially be better served by selecting a more moderately priced index-like strategy for this segment of his portfolio? In so doing, the investor also has the potential for more reliable and consistent exposures to the risk factors that he desires for the portfolio. It is widely accepted that portfolio structure determines the vast majority of investment returns, and in some cases, active managers can fail to provide reliable asset class representation – and reliable alphas. This makes structuring an appropriate portfolio difficult for the investor when using active managers.

By applying a structured approach that has the overall asset class representation of an index fund but the flexibility to capitalize on specific themes like momentum or small company exposure, we believe we can offer a better way for investors to access the growth space by tilting toward factors that have historically proven to add value over time. Because of our structured approach, we believe our performance is more likely to reflect skill than luck.

The key benefits to investors of the Gerstein Fisher Multi-Factor Growth Equity strategy can be summarized as follows:

- **The flexibility to harness excess return:** By combining small and large cap stocks in one portfolio, as well as incorporating both value and growth themes (albeit within the growth universe), Gerstein Fisher has the flexibility to be opportunistic and proactive in seeking incremental returns over an all-cap growth equity benchmark or its component part benchmarks.
- **The discipline to ensure asset class tracking:** Research has shown that portfolio structure – or the mix of asset classes in a portfolio – is the predominant driver of long-term returns.<sup>10</sup> Yet asset allocation is only effective when investments behave like the asset classes they are designed to represent. By using a structured, factor-based approach to portfolio construction, we can build a portfolio that delivers reliable core exposure to growth equities for our clients.
- **Diversification to lower portfolio risk:** Investors also benefit from the diversification aspect of owning both growth- and value-oriented stocks, as these segments of the market tend to behave differently at different times. Our research has shown that the strategy has a lower correlation to both broad market and value equity indexes than traditional growth equity index vehicles, further validating its value as a portfolio diversifier.
- **Transparency of process:** Given the current environment for hedge funds and other structured products (lack of liquidity, lack of transparency, and high fees<sup>11</sup>), we believe the strategy is likely have appeal for investors looking for alternatives to the status quo in this space.

<sup>10</sup> Brinson, Hood & Beebower (1986)

<sup>11</sup> According to an April 2008 paper by Kenneth French, “The Cost of Active Investing”, the typical hedge fund fee is 4.26%

## Important Disclosure Information

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Three Factor Model explains the source of performance variation among investment portfolios, and it is an extension of previous Nobel Prize winning work. The model specifies that differences in portfolio returns can be attributed to (1) stocks/fixed income mix - riskier stocks have a higher potential return, (2) market capitalization of portfolio - smaller capitalization stocks are riskier and therefore have higher expected returns, and (3) market price relative to accounting measures of the firm, such as book value - stocks with higher book value to market ratios are riskier and have higher expected returns. This model was first published in major academic journals but has gained wide spread acceptance among investment professionals.

Detail for Momentum Factor (Mom)

Kenneth R. French Website [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

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