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

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At Gerstein Fisher, we believe our quantitative structured approach to growth equity investing offers a compelling alternative to both pure indexing and traditional active qualitative approaches.[1] 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 sufficient structure to ensure proper asset class tracking, and indexing can prove too rigid, limiting a fund's flexibility to capitalize on market opportunities and its ability to take on risks that are likely to reward investors. Since markets are mostly efficient, arbitrage opportunities are virtually non-existent; economic theory suggests that higher expected returns are justified only as a payoff for bearing additional risk. Accordingly, it is possible to achieve excess returns by capturing certain strategic risks. Though the approach used for the strategy is quantitative, the proprietary model is grounded in this sound economic theory.

The Gerstein Fisher Multi-Factor Growth Equity strategy places proven investment concepts into an objective, quantitatively-driven framework seeking to achieve higher expected returns through targeted 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 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. When Fama and French analyzed the returns of all US equities over different independent time periods, they identified three systematic sources of risk that explained over 90% of variance in portfolio performance:[2]

- **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)

Today, we know that multiple factors contribute to the variation of stock returns. Instead of using one factor, as in CAPM, or three factors, as described by Fama/French, multi-factor models (MFMs) incorporate multiple risk factors to explain the performance of a given stock or portfolio. The basic structure of an MFM is given below:

$$R_{asset} = R_{risk\text{-}free} + \beta_1 f_1 + \beta_2 f_2 + \ldots\ldots + \beta_n f_n$$

where,

[1] Gerstein Fisher is the advisor to and manager of the Gerstein Fisher Multi-Factor Growth Equity Fund, a mutual fund.
[2] Fama & French (1992); Fama & French (1993); Fama & French (1996)
[3] Roll & Ross (1976)

R_{asset} = return on asset

$R_{risk\text{-}free}$ = return on risk-free asset

β_n = sensitivity of asset to factor n

f_n = return of factor 'n'

MFMs find their roots in the Arbitrage Pricing Theory (APT)[3]. APT is an extension of the CAPM in that it posits a linear relationship between a security's returns and that security's covariance with certain random variables. However, instead of being restricted to one source of non-diversifiable risk, as is the case in CAPM, APT allows for multiple sources. The main argument of the theory is that excess returns can only be achieved by taking on extra risk; if this were not the case, then market participants would arbitrage those excess returns away. Concurrently, APT states that a portfolio's expected return is determined by its exposure to various risk factors; it is this rationale that drives the construction of modern day MFMs.

These MFMs may be macro-economic, fundamental, or statistical, based on the how these underlying factors, f_1 to f_n, are defined. Macro-economic MFMs use changes in economic metrics as their underlying factors, where an asset's expected return is determined by the sensitivity of that asset to different economic shocks. These factor sensitivities are determined by conducting a linear regression between historical security returns and pre-determined economic factors. Some of these factors include, but are not limited to, unexpected changes in inflation, employment, or the slope of the yield curve. Fundamental MFMs are based on market information, such as price and trading volume, and 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. 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. As in the case of macro-economic MFMs, statistical MFMs also use a linear time series regression to determine factor sensitivities. It is important to note that these three types of MFMs do not conflict with each other. In a world with no estimation error and no limits on data availability, these three MFMs would simply be restatements of one another.[4]

Gerstein Fisher uses a proprietary MFM to implement the Multi-Factor Growth strategy. This model enables us to implement strategic tilts to risk factors that are based on time-tested academic research and investment principles and have historically compensated investors with higher returns while controlling the exposures to any undesired risk factors and ensure minimum active risk levels relative to the benchmark. The risk factor tilts targeted in the Multi-Factor Growth strategy include a tilt to size (greater percentage in smaller companies), value (lower price to book ratio),and earnings yield (lower price to earnings).

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, typically 3-12 months, and the tendency of past 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 implements nor recommends. Market timing involves buying and/or selling securities based on an investor's projection of future market direction, whereas momentum investing is based on looking backward at a stock's recent price trajectory and extrapolating this forward for a certain period of time based on historical relationships that are borne out of research and data. For example, research by Narasimhan Jegadeesh and Sheridan Titman revealed that, historically, momentum investing had provided excess returns.[5]

Although 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 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.[6]

[3] Roll & Ross (1976)
[4] Connor (1995)
[5] Jegadeesh & Titman (1993)
[6] Maymin & Fisher (2011), Maymin & Fisher (2011)

The process 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."[7] This tendency may lead investors to mistakenly conclude that firms realizing extraordinary earnings growth today will continue to experience extraordinary growth tomorrow. These "informed" traders attribute the performance of yesterday's winners to their stock selection skills and that of yesterday's losers to bad luck. As a result, they become overconfident about their ability to pick winners, and overestimate the predictive power of the positive signals for these stocks. This increased confidence leads investors to continue to buy aggressively and push up the prices of past 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.[8] Stocks with greater downside risk, as measured by higher correlations conditional on negative moves in the market, have been shown to have higher returns. However, other research[9] has indicated that exposure to downside risk is only a partial, incomplete, explanation for the momentum effect.[10]

Whichever view one subscribes to, there is considerable agreement that momentum strategies have provided the opportunity for excess returns for at least the last 60 years in the United States. In fact, momentum profits have also been found in most major developed markets throughout the world.[11]

These four factors – market, size, price and momentum – form the basis of the quantitative strategy that is used to construct the Gerstein Fisher Multi-Factor Growth Equity strategy. By focusing on risk/return relationships that have a strong basis in sound economic reasoning and are borne out of historical data, we seek to add value to our portfolios and help our clients achieve their financial goals.

How Does the Process Work?

At the highest level, the Gerstein Fisher Multi-Factor Growth Equity strategy adds strategic risk factor tilts relative to the Russell 3000 Growth index while controlling for other, undesired risks. Through deploying a multi-factor model and a quantitative optimization framework, the resulting portfolio contains intended exposure to small cap, value, and momentum risk factors while still maintaining a low level of active risk relative to the Russell 3000 Growth index. Additionally, the strategy does not seek to own every constituent stock inside of the Russell 3000 growth index. By using a representative segment of the index, we can control 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.

Over the long-term, the strategy seeks to achieve a return greater than the domestic growth equity market. We believe that the only systematic way to accomplish this is to overweight the portfolio to carefully managed risk factors, relative to their market proportions. For having additional exposures to strategic risk factors, we believe that investors should be compensated, over the long term, in the form of potential for greater returns.

The specifics of the process used to manage the Gerstein Fisher Multi-Factor Growth Equity strategy are as follows:

Step 1: Identifying the Universe

Given that the entire domestic growth universe is not being held by the strategy, a smaller number of stocks (150-300) are selected from the much larger list of securities, called the stock universe, which constitutes every possible holding for the strategy. Since the strategy is meant to provide exposure to domestic growth equities, Gerstein Fisher screens companies of widely varying market capitalization, from very large to very small. The starting point for the portfolio's stock universe is the Russell 3000 Growth index, which is a combination of the Russell 1000 Growth and the Russell 2000 Growth indexes, and comprises ~1800 securities (~600 from the Russell 1000 Growth index and ~1200 from the Russell 2000 Growth index).

[7] Tversky & Kahnemann (1974)
[8] Ang, Chen & Xing (2001)
[9] Hansen & Jagannathan (1997)
[10] Conrad & Kaul (1998)
[11] Griffin, Ji & Martin (2005); Chan, Hameed & Tong (2000)

Step 2: Filtering the Universe

Gerstein Fisher research has shown that the 'growthiest' of small cap growth stocks have significantly and consistently underperformed their peers in the small cap growth index (Russell 2000 Growth Index).[12] Since the initial universe is the Russell 3000 Growth index, it contains these 'growthiest' small cap growth stocks. To improve the risk-adjusted return potential of the strategy, the 'growthiest' small cap growth stocks are removed from the universe, i.e., these securities are restricted from being a part of the portfolio. After separating the large cap stocks (the Russell 1000 Growth stocks) from the initial universe, the Russell 2000 Growth securities are ranked by their 'growth' characteristics and sorted into five equal quintiles. The stocks in the bottom quintile (the one with the highest growth characteristics) are removed from the strategy's stock selection universe. Exhibit 1 illustrates this process.

Exhibit 1: Identifying and Filtering the Universe

	Russell 3000 Growth	
	Russell 1000 Growth	Russell 2000 Growth
Quintile 1: **Lowest Growth**	Buy	Buy
Quintile 2	Buy	Buy
Quintile 3	Buy	Buy
Quintile 4	Buy	Buy
Quintile 5: **Highest Growth**	Buy	Restricted

Step 3: Constraining Factor Exposures

The risk factor tilts applied to the strategy are relative to the benchmark, the Russell 3000 Growth index. In order to implement relative exposures, it is imperative to calculate the factor exposures of the benchmark. The MFM is used to calculate these various risk factor characteristics of the index. Once the factor exposures for the benchmark are computed, the targeted exposures of the strategy are determined. The four risk factors described previously (size, value, market, and momentum) are constrained to 'benchmark exposure + x' where x denotes the excess exposure to that risk factor, relative to the benchmark exposure. Any factor exposures that are not desired by the strategy (industry risk, currency sensitivity, et al.) are constrained to be as close as possible to the benchmark exposures. This ensures strategic tilts to risk factors that are based on time-tested academic research and investment principles without taking on unnecessary risk bets.

Step 4: Constructing the Portfolio

After defining the universe of stocks from which the strategy can buy holdings, and determining the targeted risk factor exposures, the final step of the process is the construction of the portfolio.The multifactor model is used in conjunction with a quantitative optimization process to generate a list of proposed holdings for the portfolio. This list of stocks is then screened for any potential liquidity and trading cost issues. Once an adjustment is made to filter out illiquid stocks, the strategy is implemented.

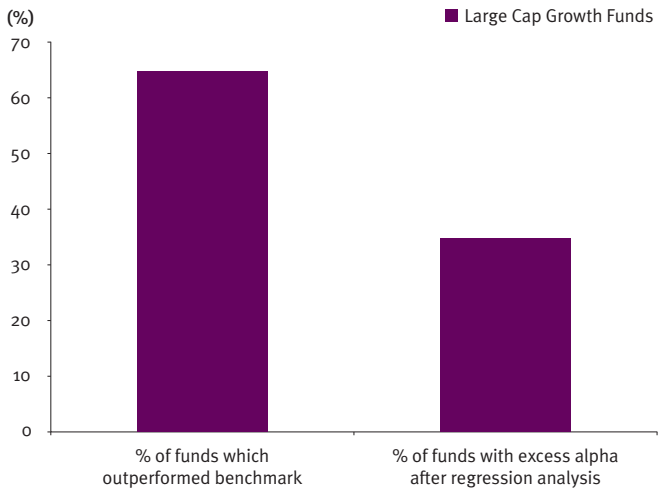
On a systematic basis, Gerstein Fisher's Investment Strategy Group recalculates the factor exposures of the benchmark and rebalances the portfolio to ensure that the relative tilts are maintained and that the active risk remains within specified limits. We believe the flexibility to rebalance our portfolio frequently instead of being required to hold a stock based on an index (even if the stock may be exhibiting negative price momentum and causing a drag on performance) is an advantage. We can either sell a security with negative momentum or delay its purchase, and we can continue to hold onto a security with positive momentum even if the rules of an index suggest a sale.

Why a Structured Quantitative Approach for Growth Equity?

Interestingly, domestic large growth equity has historically been an asset class in which active managers have actually eked out some outperformance over the index (see column 1 in Exhibit 2). This may be partly because they are not bound to hold or sell stocks simply because these stocks are constituents of the index and can take active stock and sector bets. 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 column 2 in Exhibit 2 on the next page).

[12] Gerstein Fisher Research (2010)

Exhibit 2: Percent of Active Fund Managers Outperforming Benchmark – 10 Years starting January 1, 2001 and ending December 31, 2010



Source: Gerstein Fisher Research, Morningstar, Russell 1000 Growth Index

It appears that the outperformance of large cap growth funds relative to the Russell 1000 Growth index in the chart above is far more common than positive manager "alpha", or returns that take the factors of momentum, value and size 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 the variance in 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 quantitative approach that has the overall asset class representation of an index fund and the flexibility to capitalize on specific themes like momentum or small company exposure, we believe the Gerstein Fisher Multi-Factor Growth Equity strategy can offer a better way for investors to access the domestic growth equity 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 a reliable, empirically tested, and well-documented process rather 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 relative to an all-cap growth equity benchmark or its component part benchmarks.
- **The discipline to ensure asset class tracking:** Research has shown that portfolio structure – the mix of asset classes in a portfolio – is the predominant driver of the variation of long-term returns.[13] 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 lower correlation between momentum and value within the strategy results in lower volatility relative to traditional growth equity index vehicles.[14]
- **Transparency of process:** Given the current environment for hedge funds and other structured products (lack of liquidity, lack of transparency, and high fees[15]), we believe the Gerstein Fisher Multi-Factor Growth Equity strategy is likely to appeal to investors looking for alternatives to the status quo in this space.

[13] Brinson, Hood & Beebower (1986)
[14] Fisher (2011)
[15] According to an April 2008 paper by Kenneth French, "The Cost of Active Investing", the typical hedge fund fee is 4.26%

Bibliography

Ang, Andrew, Joseph Chen, and Yuhang Xing. "Downside Risk and Momentum Effect." *NBER Working Paper*, 2001.

Booth, David G. and Eugene F. Fama. "Diversification Returns and Asset Contributions." *Financial Analysts Journal*, May-June 1992: 26-32.

Brinson, Gary P., L. Randolph Hood & Gilbert L. Beebower, "Determinants of Portfolio Performance." *The Financial Analysts Journal*, July/August 1986.

Chan, Kalok, Allaudeen Hameed and Wilson Tong. "Profitability of Momentum Strategies in the International Equity Markets." *Journal of Financial and Quantitative Analysis*. Vol. 35, No. 2, June 2000.

Connor, Gregory. "The Three Types of Factor Models: A Comparison of Their Explanatory Power." *The Financial Analysts Journal*, Vol. 51, No. 3, (May/June 1995), pp. 42-46.

Conrad, Jennifer and Gautam Kaul, 1998, "An Anatomy of Trading Strategies." *Review of Financial Studies* 11, 489-519.

Fama, Eugene, and Kenneth French. "Common Risk Factors in the Returns on Stocks and Bonds." *Journal of Financial Economics*, 1993: 3-56.

Fama, Eugene, and Kenneth French. "Multifactor Explanation of Asset Pricing Anomalies." *Journal of Finance*, 1996: 55-84.

Fama, Eugene, and Kenneth French. "The Cross Section of Expected Stock Returns." *Journal of Finance*, 1992: 427-465.

Fisher, Gregg S., "Gerstein Fisher Multi-Factor Growth Equity Strategy: Backtest Performance." Creating Investment Excellence, 2011.

French, Kenneth, "The Cost of Active Investing." *Journal of Finance* 63, 2008: 1537-1573.

Gerstein Fisher Research. "Returns on Small Cap Growth Stocks, or the Lack Thereof: What Risk Factor Exposures Can Tell Us." Research Brief, 2010.

Griffin, John, Xiuqing Ji, and J. Spencer Martin. "Global Momentum Strategies." *Journal of Portfolio Management*, 2005.

Hansen, Lars Peter and Ravi Jagannathan, 1997, "Assessing specific errors in stochastic discount factor models." *Journal of Finance*, 1997: 52, 557-590.

Jegadeesh, Narsimhan, and Sheridan Titman. "Returns to buying winners and selling losers: Implications for stock market efficiency." *Journal of Finance*, 1993: 65-91.

Jegadeesh, Narsimhan, and Sheridan Titman. "Profitability of Momentum Strategies: An Evaluation of Alternative Explanations." *NBER Working Paper*, 1999.

Maymin, Phil Z. & Gregg S. Fisher. "Preventing Emotional Investing: An Added Value of an Investment Advisor." *Journal of Wealth Management*, Vol. 13, No.4, Spring 2011.

Maymin, Phil Z. & Gregg S. Fisher (2011). "Past Performance is Indicative of Future Beliefs." Risk and Decision Analysis, forthcoming.

Roll, Richard & Stephen A. Ross. "The Arbitrage Pricing Theory Approach to Strategic Portfolio Planning." *Journal of Economic Theory*, 1976: 341-360.

Tversky, Amos & Daniel Kahneman. "Judgment under certainty: Heuristics and biases." *Science*, 1974: 185, 1124-1131.

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Regression analysis examines the statistical connection between a variable of interest and one or more factors used to explain its variation. For example, if the variable of interest is student test scores, regression could be used to show the connection to factors such as time spent studying or IQ.

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.

The material difference between an advisory account using the Strategy and the Fund are: An advisory account objective may differ from a mutual fund's objective as the objective of an advisory account may be unique to the account holder, while a mutual fund has one objective for all investors. An advisory account is subject to advisory fees. A mutual fund is subject to management fees, which include advisory fees and other expenses. The risks of an advisory account will depend on the underlying holdings which may be greater or less than that of a specific mutual fund. An advisory account can be structured for tax efficiency, while a mutual fund is not generally structured for tax efficiency.

Detail for Momentum Factor (Mom)

Kenneth R. French Website http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

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