



Investment Philosophy

From Financial Economic Theory to Real World Portfolios

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The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is ... a problem of the utilization of knowledge not given to anyone in its totality.

Fundamentally, in a system where the knowledge of the relevant facts is dispersed among many people, prices can act to coordinate the separate actions of different people in the same way as subjective values help the individual to coordinate the parts of his plan.

The most significant fact about this system is the economy of knowledge with which it operates, or how little the individual participants need to know in order to be able to take the right action.

—F.A. Hayek

“The Use of Knowledge in Society,” *American Economic Review* 35, no. 4 (1945): 519–30.

Introduction

Over the past 60 years, theoretical and empirical research in financial economics has increased our understanding of how capital markets work. Applying this research to the portfolio design process through systematic and structured implementation that effectively captures risk premiums maximizes an investor’s chance of experiencing higher expected rates of return. Integrating exposure to multiple factor premiums takes advantage of the proven synergies among these styles and produces a more robust and reliable strategy.

How We're Different

The typical Wall Street firm or retail “financial advisor” asks one question – what will sell? When serving the best interest of the client, this is the wrong question. Instead, the question should be – what works to increase the probability of higher expected returns? For the client, the typical retail investing experience is rarely good. Wall Street and its distribution channels – the retail broker-dealer representatives, banks and insurance companies create and sell products that are designed for one purpose, to appeal to the prospective client. As a result, these products often promise more than they deliver and usually do a much better job of funding the sales machine’s expensive marketing campaign than providing greater return to investors. But, since they are invariably accompanied by a well-crafted story that sounds plausible to the average investor – or, even to the typical salesman – they continue to sell despite their poor track record.

There is a better way, driven by rigorous academic research, grounded in the efficiency of capital markets and designed to effectively provide exposure to the multiple dimensions of higher expected returns. Well supported by long-standing empirical evidence, it rewards patience and the ability to focus on long-term results with the real probability of achieving returns in excess of the broad market.

History

While attending the University of Chicago in the early 1950s, Harry Markowitz began to apply mathematics to the analysis of the stock market. He realized that the then-current understanding of stock prices lacked any analysis of the impact of risk. In 1952, he developed his theory of portfolio allocation under uncertainty and published it in the *Journal of Finance*. In 1955, he received a Ph.D. from the University of Chicago. His dissertation on portfolio theory was so novel that Milton Friedman argued that his contribution was not economics. Markowitz published *Portfolio Selection* in 1959, describing optimal mean-variance portfolios that create the efficient frontier. In 1990, he won the Nobel Memorial Prize in Economic Sciences for this work. A Markowitz efficient portfolio is a portfolio with the highest rate of return for a given level of risk (or, conversely, the lowest level of risk for a given rate of return). This understanding created Modern Portfolio Theory (MPT), the concept of combining assets that tend to move independently of one another into a portfolio to reduce the overall level of risk. The set of portfolios that produce the highest return for different levels of risk are said to lie along the “efficient frontier” – the curve that is formed when the set of portfolios are graphed along an x-y axis using volatility (risk) and return. Constructing an efficient portfolio requires the ability to statistically calculate the correlation between the various components of the portfolio and choose components that have low correlation. By using a process of mean-variance optimization, the most efficient combination of assets can be determined. Combining volatile equity asset classes with investment grade short-duration bonds is a good example of how MPT works and is a cornerstone of our portfolio strategy. The low volatility and extremely low (often slightly negative) correlation between this type of fixed income and equities allows us to construct portfolios with a broad range of risk/return characteristics that are appropriate for most clients.

The concept of portfolio efficiency was essential to the development of the next major advance in financial economics. In the early 1960s, building on the work of Harry Markowitz, William Sharpe and others developed a single-factor model to explain the difference in expected rates of return on various assets - the Capital Asset Pricing Model (CAPM). The CAPM explains an asset's expected return as a linear function of its covariance with the market portfolio - as measured by beta. Beta is simply the asset's market risk (that cannot be eliminated through diversification and for which investors should expect to be compensated) in comparison to the market as a whole. In the single-factor CAPM world, beta is all that is needed to explain why one stock or portfolio outperforms another. It is simple and elegant, but incomplete.

Multifactor Investing

The empirical work done in the 1970s confirmed the need for additional price factors to explain differences in equity returns. The work showed that, contrary to the predictions of CAPM, differences in beta could not explain all of the variation in returns. In particular, small cap stocks and stocks with a low price when scaled by some measure of fundamental value (book value, earnings, cash flow, etc) - call them value stocks - tended to have higher returns than predicted by their market betas. Researchers found other patterns in the cross-section of returns that were unrelated to beta as well, such as the tendency of short-term winners to continue to outperform for a period of time - momentum.

It is worth noting that academic and practitioner research is constantly identifying new market anomalies. These purport to offer significant risk-adjusted excess returns, and Wall Street routinely spins new stories to sell them. However, these anomalies have a tendency to evaporate when they become well-known and are exploited by market participants. In order for a premium to be reliably captured in a portfolio design and used to increase expected returns, it must have several important characteristics. First, it must be persistent - it must outperform over long time periods. It must also be pervasive - outperforming across markets and asset classes. The existence of the premium should be supported by empirical evidence and have a sensible basis in financial economic theory. Further, it should provide additional diversification benefit when integrated with other portfolio strategies. Finally, implementation must be achievable at a reasonable cost.

In 1992, Eugene Fama and Kenneth French published a highly influential paper titled "The Cross-Section of Expected Stock Returns" in the *Journal of Finance*. Their findings showed that variation in relative price, as measured by the book-to-market ratio (BtM), explained a substantial part of the variation in stock returns. In addition, when controlling for relative price, market capitalization also captured substantial variation in returns. The conclusion, that companies with a low relative price (a high BtM - referred to as value companies) and small capitalization companies have historically had higher rates of return, has been repeatedly challenged and scrutinized. Today, the findings remain some of the most widely accepted academic research of the last 30 years. The results led Fama and French to conclude that there were at least two additional dimensions of returns in equity markets and to the development of a multifactor model to explain the behavior - the Fama/French three-factor model, which has been the basis of the portfolio models that our firm has used for many years.

Recent financial economic research conducted by Dr. Robert Novy-Marx at the University of Rochester Simon Graduate School of Business shows that higher expected profitability is related to higher expected returns, holding all else fixed. As a result, financial economists have developed a robust proxy for expected profitability - direct profitability. Using this proxy, we find that high direct profitability stocks tend to outperform low direct profitability stocks across stock markets and over time. The direct profitability premium is pervasive and persistent. Moreover, profitability can be used in investment strategies to improve their expected returns while maintaining broad diversification and the cost of implementation is reasonable. Therefore, expected profitability is a new dimension of expected equity returns that we can use to build more robust investment solutions. Profitability factor exposure is the most recent improvement to our portfolio models and has been implemented across most equity asset classes as of 2014.

In 1993, UCLA professors Narasimhan Jegadeesh and Sheridan Titman published what is considered to be the first comprehensive study of the momentum effect. They found strong evidence, over the 1965 - 1989 period, that stock prices trend - at least in the "short-term" of up to two years. In 1997, Mark Carhart, a student of Eugene Fama, conducted a study controlling for common factors influencing returns. He found that additional abnormal returns were explained by persistence in portfolios. Carhart then extended the Fama/French model with an additional factor - momentum. Momentum is the concept that a stock that has performed well recently will continue to perform well and that one that has performed poorly will also continue to perform poorly. His paper titled "On Persistence of Mutual Fund Performance" in the March 1997 issue of *Journal of Finance* documented the momentum effect found by examining the performance of a broad number of mutual funds. Since its initial documentation, momentum has been studied extensively and shown to be a pervasive phenomenon across markets and asset classes. There has been, however, a great deal of debate about the cost of capturing the momentum premium and whether this hurdle makes it feasible to implement a momentum strategy - that what works well in theory may be too costly to implement in the real world. We believe that this debate has been won by the proponents of momentum as a viable factor in portfolio construction. At this point, our standard portfolio models take advantage of momentum screens at the fund level, but do not incorporate a specific allocation to momentum stocks. We have the ability to add momentum exposure to our standard portfolio models and can include it in client-specific portfolio designs when appropriate. As of summer 2015, we are developing a new generation of standard portfolio models that will incorporate momentum factor exposure. The combination of value factor and momentum factor exposure in a portfolio can, as a result of the poor correlation between the two factors, result in significant improvement in efficiency of return and reduction in tracking error.

By incorporating multiple dimensions of expected equity returns (company size, relative price, expected profitability and momentum) in the structure of a portfolio, we can use the information in all dimensions to improve the reliability of the outcome. Put another way, we can increase the probability of achieving higher expected returns versus the broad market or a single asset class.

Managing Portfolio Risk

In the realm of fixed income, two factors drive returns – maturity and default risk. Fixed income securities are interest sensitive investments without substantially stronger long-term expected return. Thus, the role of fixed income exposure in portfolio construction is that of lowering portfolio risk by dampening the volatility of equity investments, allowing portfolios to be constructed with risk/return characteristics that are appropriate for the individual client’s risk tolerance and time horizon. Our core fixed income strategies use a variable maturity approach to high-grade corporate and government debt that involves no interest rate forecasting. The strategy shifts the maturity structure in response to changes in the current yield curve by identifying the points on the curve offering the highest expected return per unit of volatility. Once again, credit for the development of the variable maturity approach to determining term structure of the portfolio belongs to Fama and French. Global strategies are diversified across developed international markets and hedge currency exchange rate risk.

Alternative asset classes that are poorly correlated to both the equity and fixed income allocations in the portfolio may serve to further reduce overall portfolio risk. Our standard portfolio models include an allocation to publicly traded REITs. Some clients may benefit from additional alternative asset class exposure. When appropriate, our preference is for diversified quantitative absolute return strategies, as opposed to traditional (and extremely volatile) commodity exposure.

Implementation

Nobel Prize winner Milton Friedman once remarked that “there is no such thing as a free lunch.” In other words, it is unreasonable to expect something for nothing. Once a portfolio is effectively diversified, implementation becomes an exercise in evaluating tradeoffs created by different factor exposures. This may include tracking error to market indices, cost and tax efficiency. No particular combination is right for every investor and careful evaluation of the tradeoffs in a collaborative engagement is required to produce a portfolio design that fits the goals, risk tolerance and even the potential behavioral biases of each client.

For example, a portfolio that is heavily tilted toward the size and value factors, while very likely to perform well over long time periods, often underperforms the common market indices over shorter time periods (and “shorter” may be a multi-year period in the context of successful investing). Not all investors are able to maintain the discipline required to capture these premiums. The momentum premium demonstrates a poor correlation with the value premium, so adding momentum exposure can reduce tracking error. However, momentum strategies can be more expensive to implement and may be less tax efficient.

In development of a client portfolio, there are numerous such decisions to be made, including:

- The amount of home country bias – based on client behavioral issues or used for consumption hedging in income oriented portfolios
- Tax-efficient asset location vs. optimal order of withdrawal and complexity
- Tax management of equity exposure in non-qualified accounts vs. cost and tracking error
- The use of tax-exempt fixed income vs. global diversification and currency hedging
- Quality of investment options in the client’s employer sponsored plans vs. complexity and tax-efficiency of implementation
- Strategic vs. tactical asset allocation and its relationship with investor behavioral biases
- Inclusion of non-correlated alternative asset classes vs. cost

Put simply, cost matters. The inverse relationship with cost has been shown to be a reliable predictor of future returns. Our firm’s close relationships with institutional fund managers allow access to institutional cost structures that would be unavailable to most individual investors. This generally proves to be the most cost-effective method for constructing a portfolio with the desired characteristics. However, very large portfolios with specific tax management issues may be better suited for a separate account arrangement.

Objections

It might seem surprising, but it’s not difficult to find those who disagree with our philosophy even though it’s based on the conclusions reached by 60 years of rigorous peer-reviewed academic research. The majority of those who don’t support these theories benefit financially from convincing investors that they have found the answer. Of course, the objections are rarely, if ever, presented in a forum that allows for debate or accompanied by statistically valid evidence to support the assertion. Frequently, the assertions are based on poor or incomplete understanding of the financial economic theory that is being challenged. One must consider the source. Is it coming from a salesman, an organization with an obvious agenda or from an unbiased source presenting a conclusion based on well-proven research?

Over 60 years, many investment fads have come and gone. Studies show that most portfolio managers have consistently failed to beat the market. Even worse, the average investor hasn’t done as well as the managers that have underperformed. Why, when market returns are fairly easy to reliably capture, would this be the case? The answer is clearly investor behavior, frequently aided by Wall Street’s ability to capitalize on the lack of financial education and the willingness of the average investor to believe what they want to hear – that they can beat the market by investing in the latest fad. Most individual investors have proven to be their proverbial “own worst enemy.” Also contributing to this is the advertising revenue-driven and irresponsible financial media. Entertainment is often mistaken for expert advice.

Conclusions

The traditional methods for managing portfolios in the realm of retail investing have produced disappointing results, despite the billions of dollars spent annually by Wall Street to convince investors otherwise. Our commitment to portfolio design based on strong empirical evidence and rigorous academic research is a superior approach that increases the probability of capturing a high expected rate of return. Ultimately, the largest determinant of success is investor behavior and the ability to remain committed to a strategy during inevitable periods of stress. By remaining committed to our core principles of a consultative approach, goals-based solutions and the development of personal relationships that allow us to educate clients and “filter out the noise”, we can help our clients feel more confident in their ability to navigate financial challenges.