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Factor Investing: A Post-Modern Portfolio Theory

With apologies to Harry Markowitz, why it's wise to tweak MPT by using factors offering positive return premiums over time.

By **John Blood** | August 22, 2016

Since Harry Markowitz published his Journal of Finance paper creating Modern Portfolio Theory in 1952, asset allocation, risk management and diversification have become the governing principles for portfolio construction.

Ask most financial advisors how they create a portfolio, and the first thing they'll reference is "MPT." They seek out assets that are not correlated, so gains in one will offset losses in another. They work with clients to trade risks for rewards, and seek out that ideal balance on an efficient frontier. Even now, after decades of tremendous market growth and shocks, Markowitz's idea still forms the basis of modern portfolios.

Beyond strategic asset allocation, though, many if not most asset managers embrace various strategies beyond MPT in an attempt to enhance their portfolio performance in some way, typically seeking to increase returns, reduce downside risk or some combination of the two. These investment approaches — which include actively managed stock selection, dynamic or tactical asset allocation, and the use of alternative investments, among others — are a core tool for the majority of advisors and investment managers. Alas, any rigorous academic evidence that these strategies are actually effective is elusive.

In fact, the majority of academic research suggests that approaches like the ones mentioned previously — despite their noble objectives — have the exact opposite effect on portfolio outcomes. They tend to elevate portfolio volatility, increase costs, reduce tax efficiency and cause portfolios to underperform a strategic, low-cost, passively oriented approach.

Recognizing the power of this academic evidence, some asset managers, my firm included, have evolved their portfolio construction approach. We have created "post-modern portfolios," which tweak the idea of asset allocation and diversification by seeking out types of securities that have been shown, by decades of academic research, to offer positive return premiums over time. We are not talking about tech stocks here, nor biotech or other high-profile, go-go industries. Instead, we are looking at certain investment characteristics — or "factors" — that have been suggested by research to systematically offer positive return premiums to investors over long periods of time.

Factor Investing = Dissecting Alpha

In the 1960s, Nobel Laureate Eugene Fama's research showed that a portfolio of selected stocks won't typically beat the broad market index. Factor research looks further, dissecting alpha to understand the elements of successful stock picking. It turned out that outperforming stocks share certain traits, which were given the name factors (see "Factor Investing Explained," right).

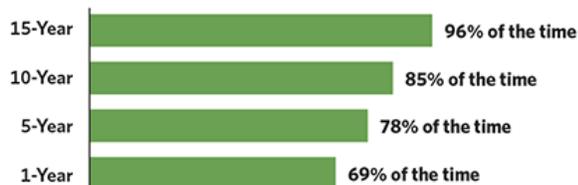
There are literally hundreds of potential factors that have been identified, but academic research has helped narrow the field by identifying those that seem to have the greatest probability of minimizing risk while maximizing returns.

Historical Performance of Factor Premiums Over Rolling Periods

U.S. Markets

Overlapping Periods: January 1928–December 2015

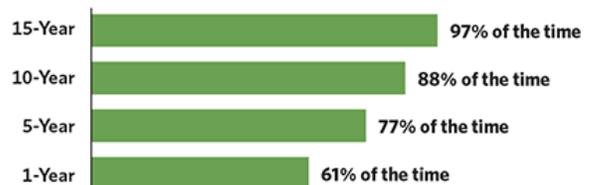
MARKET beat T-BILLS



'Market' is Fama/French Total U.S. Market Index. 'T-Bills' is One-Month U.S. Treasury Bills. There are 877 overlapping 15-year periods, 937 overlapping 10-year periods, 997 overlapping 5-year periods and 1,045 overlapping 1-year periods.

Overlapping Periods: January 1928–December 2015

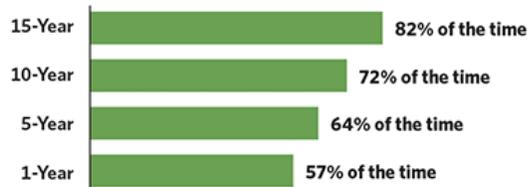
VALUE beat GROWTH



Value is Fama/French U.S. Value Index. 'Growth' is Fama/French U.S. Growth Index. There are 877 overlapping 15-year periods, 937 overlapping 10-year periods, 997 overlapping 5-year periods and 1,045 overlapping 1-year periods.

Overlapping Periods: January 1928–December 2015

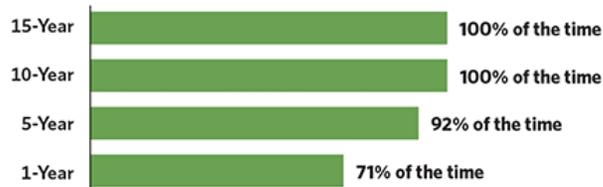
SMALL beat LARGE



'Small' is Dimensional U.S. Small-Cap Index. 'Large' is S&P 500 Index. There are 877 overlapping 15-year periods, 937 overlapping 10-year periods, 997 overlapping 5-year periods and 1,045 overlapping 1-year periods.

Overlapping Periods: July 1963–December 2015

HIGH PROFITABILITY¹ beat LOW PROFITABILITY



'High' is Dimensional U.S. High Profitability Index. 'Low' is Dimensional U.S. Low Profitability Index. There are 451 overlapping 15-year periods, 511 overlapping 10-year periods, 571 overlapping 5-year periods and 619 overlapping 1-year periods.

Source: Dimensional Fund Advisors LP. Profitability is a measure of current profitability, based on information from individual companies' income statements, in U.S. dollars, and based on rolling annualized returns using monthly data. Rolling multiyear periods overlap and are not independent. This statistical dependence must be considered when assessing the reliability of long-horizon return differences. Dimensional Index data compiled by Dimensional. Fama/French data provided by Fama/French. The S&P data is provided by Standard & Poor's Index Services Group. Eugene Fama and Ken French are members of the Board of Directors for and provide consulting services to Dimensional Fund Advisors LP. Index descriptions available upon request.

Based on this research and our own experience with factor investing, we have focused on these four factors that we believe to be most influential:

- **Size:** The propensity for small-cap stocks to outperform large-cap stocks over time
- **Relative Price:** The tendency for value stocks to outperform growth stocks over time
- **Quality:** The propensity for companies with higher profitability ratios to outperform those with lower-profitability ratios over time
- **Momentum:** The propensity for stocks with positive momentum to outperform the market in the near term and those with negative momentum to underperform the market in the near term

Two additional factors are also very popular among asset managers, though we don't use them as often as the first four:

- **Low Volatility:** The tendency for a security's value to remain stable, changing in value at a steady pace over time
- **Dividend Yield:** The tendency for companies who pay steadily growing dividends (relative to their share price) to outperform the market over time. This is highly correlated with the "Relative Price" or "Value" factor.

Instead of focusing at the asset class or individual security level to create a diversified portfolio of stocks, bonds, cash and alternatives, factor investing takes a more holistic approach to portfolio construction. The goal is to build and hold a broadly diversified global portfolio that offers exposure to a designated set of risk and return factors in an efficient, low-cost way.

How to Implement Factor Investing

Factor investing is a strategic approach that looks at diversification through a new lens. The emphasis is not on the investment vehicle or manager, ETF or mutual fund, stock or bond. Instead, securities are chosen based on whether or not they display one or more specific attributes or factors.

Because the approach is more strategy-based than product-based, advisors can select the least expensive, most efficient product that delivers consistent exposure to the chosen attribute.

At our firm, we tend to use ETFs or mutual funds that exhibit consistent factor exposures, broad diversification, low turnover and low costs. Firms such as FlexShares, iShares, AQR, DFA, State Street and others are focused on delivering low-cost, factor-based exposure. Our role is to identify the right factors, do the proper due diligence and assemble a portfolio to achieve our desired factor tilts at the lowest cost possible.

Being manager-agnostic, we can build nearly identical factor-based portfolios using products from a variety of providers. We do not believe that any one manager has cornered the market on factor investing, or has the ability to systematically outperform other factor-based managers over time.

However, what we've seen over the past couple of years is that the ETF portfolios have tended to outperform a similarly allocated portfolio of mutual funds by 20 to 60 bps. The reason is simple: Innovation and competition in the ETF marketplace has driven down costs, which gives the ETF portfolio a tailwind from a performance perspective. One approach is not systematically better than the other. It's just a bit less expensive, a difference that compounds over time.

It's Not Market Timing

One of the key tenets of factor investing is that you can't time the factors. Factor investing is a long-term approach. Over long periods of time, our expectation is that value will beat growth and small caps will beat large caps. What's out of favor today will come back at some point in the future.

Some investors would consider factor investing an active approach, and we would not quibble over semantics. What it does do, however, is remove the "human" element of trying to guess, predict or forecast what the future holds for the market, asset classes or individual securities. That process is replaced by one based on rigorous academic discipline, where investment decisions are driven by empirical evidence and probabilities that have been arduously tested by economic and financial thought leaders. The approach is systematic, strategic and unemotional. The factors don't change based on today's news or the latest research report from a Wall Street firm.

Consider the traditional plastic ice cube tray. You fill it up at the sink and try to get water to spread evenly across all the little spaces for cubes. Modern portfolio theory is similar; you spread your assets into your target allocation, filling each asset "cube" to suit. If you do this with index funds, as many managers do today, you have captured the market's "beta" — the potential for asset growth owing to market and economic activity — at a low price.

Factor investing takes that ice cube tray and tilts it a bit. We emphasize particular attributes — capitalization or profitability, for example — to skew our allocations toward those qualities proven to outperform over time.

Put simply, we systematically "overweight" securities that are expected to outperform over time, and "underweight" those that research suggests may underperform. In order to do so most efficiently, at our firm we use products specifically designed to deliver consistent exposures to those factors at low cost. In this way, we capture what used to be classified as costly alpha — the genius of a manager's security selection — and turn it into inexpensive, efficiently achievable beta.

It is truly delivering the best of both worlds, the potential outperformance of traditional active management, at a cost more akin to indexing.

Wealth creation is a simple formula: The average investor needs to save more, spend less and be disciplined about participating in the capital markets. However, we would assert that using decades of academic research around factor investing and its potential benefits can provide an additional boost.

In our view, tilting the ice cube tray in a way that is supported by some of the greatest minds in finance seems like the most sensible approach.

— Related: *Factor-Based Investing on the Rise; Will Be Focus of Morningstar Conference* (<http://www.thinkadvisor.com/2016/09/06/factor-based-investing-on-the-rise-will-be-focus-o?ref=related-embedded>)