Market Efficiency and the Value of Portfolio Design

By Kevin Kelly, CFA®

This article discusses the underlying principles of market efficiency and the value of portfolio design. It details four core fundamentals that arise from these principles and explains how each fundamental may influence portfolio design and management. This article touches on foundational research by Eugene Fama, Nobel laureate in economics and professor at The University of Chicago, and illustrates how his theories of market efficiency impact practical application.

In 2013 Fama was awarded the Nobel Memorial Prize in Economic Sciences for work he pioneered in the 1960s and that eventually became known as the efficient market hypothesis. Fama was one of the first to apply a scientific approach to investment management, and he often is called the father of modern finance. His work was groundbreaking; it changed the way many people saw the field of finance and how money managers and advisors performed their work. Over time, Fama’s hypothesis proved to be something of a prophecy as it played out in real time on the world economic stage.

Many money managers, advisors, and investors, however, still approach their work in near opposition to Fama’s approach, often attempting to garner greater returns through market timing, picking individual stocks, and, in effect, trying to beat the market. This maneuvering flies in the face of Fama’s research, which states that markets are efficient and all available information is quickly incorporated into the prices of publicly traded securities. The notion that a manager or investor can pick winning stocks, and do so consistently, is unfounded in Fama’s research. The key to performance is in the portfolio design itself, not in stock picking or market timing. Through the work of Fama and his colleague, Kenneth French, portfolio design based on the efficient market hypothesis can be structured to attempt to capture market premiums within the efficiency of the markets.

The Science behind Portfolio Design
The design of portfolios can be science-based, practically incorporating academic models, market analysis, and ever-changing key indicators, with the goal of developing the right portfolio design to meet an investor’s needs. To emulate the global markets, portfolios should be diversified across and within asset classes, industries, and securities worldwide. To seek above-market returns, allocations may be biased toward security characteristics that have displayed premium returns historically, and where economic rationale implies they will continue. Portfolios designed in this fashion can be managed for lower turnover, which leads to lower transaction costs.

Four Core Fundamentals of Portfolio Design
The work of Fama, French, and other thought leaders is scientific, detailed, and challenging for many to fully comprehend. The elegance of their empirical approach can be summed up simply through the following fundamentals:

Markets are Efficient and Priced Fairly
The notion that markets are efficient and priced fairly is the basic premise of the efficient market hypothesis. It states that with so many people trading in the securities markets—the stock and bond markets—all known information about the companies that comprise those markets is quickly reflected in the prices of those stocks or bonds. So anything that is going to move the price of a stock or a bond up or down is unknown right now. Further, the price of the stock is essentially the equilibrium value of that stock. It’s the balancing point between those who think the stock should be valued higher and those who think it should be valued lower. Expecting to repeatedly profit from correctly anticipating unknown information, i.e., which securities are going to go up or down at a greater rate of return compared to other securities, is essentially futile.

Speculation is Futile
Investors always will have opinions about the future prospects of a stock. When a company makes a surprise announcement, such as sales are twice as good as expected or half as good as expected, that news gets incorporated into the stock price almost instantaneously. It’s unlikely that someone will know the future price of any security and profit from that prediction repeatedly.

For example, day traders who say they monitor specific news feeds and react quickly to the news of the day may be suffering from overconfidence or perhaps delusions of grandeur. It’s unlikely that they can trade faster and more accurately than multi-billion dollar Wall Street firms. In contrast, a sound investment strategy includes checking your ego at the door and having humility when entering the marketplace.

The best papers on the subject is Fama and
French’s “Luck Versus Skill in the Cross-Section of Mutual Fund Returns” (2010). This paper demonstrates that active fund managers cannot accurately discern the future prices of individual securities and systematically beat the market. The data just do not pan out. It would be expected that half of the active managers would beat the market and the other half would trail the market. But, the total group performs worse than that. For investors with actively managed funds, this doesn’t bode well, particularly when the fees associated with actively managed funds are brought into the equation. The likelihood of picking the right manager is a challenge worth mentioning too.

Anecdotally, perhaps one of the greatest money managers of all time is Peter Lynch. He ran the Fidelity Magellan fund from 1977 to 1990, and under his guidance it consistently outperformed the market, beating the S&P 500 in 11 of 13 years and bettering broad market returns by more than 10 percentage points annually on average. Those were huge premium returns over the marketplace. Upon retirement Lynch had abundant financial resources to find and groom his replacement, but Lynch’s successor could not continue or repeat Lynch’s success. Returns were inconsistent for the following 20 years. If Peter Lynch, a man many considered the smartest in the business, couldn’t duplicate himself or his success, it is highly unlikely that any ordinary or even extraordinary person can do it. Common sense makes the most sense.

In another example, Bill Miller from Legg Mason had the longest track record of calendar-year outperformance of any manager. Miller beat the S&P 500 for 15 years from 1991 through 2005. But unlike so many, he was smart enough not to get caught up in his own press clippings, admitting openly that his success was probably an accident of the calendar and good fortune. Ultimately, he went from being a first-percentile performer for 15 years to trailing 95 percent of funds in his category for the next three years. Picking his fund with the expectation that market-beating returns always would follow became a costly disappointment for many.

The strategy of efficient portfolio design strives to eliminate this kind of speculative risk. It’s a methodology designed for good and bad markets. It won’t keep investors from experiencing market fluctuations. But by relying on market efficiency rather than a hot manager, investors can develop a mindset that allows them to ride market highs and lows with more resilience, be less apt to panic, and view market downturns as temporary changes in values instead of permanent loss of capital.

Bumps and detours are survivable, but running off the road can stop investors from reaching their destinations. No pathway or investment vehicle is foolproof, but if safety is a concern, choosing a well-traveled route and a vehicle that has more safety features may provide peace of mind and increase the likelihood of arriving on-time safely.

Mathematics shows that market speculating, if it leads to higher volatility, is costly over the long term. Even if investors think they can best the pros, the numbers may not work in their favor. Higher upside years may not necessarily compensate for greater downside experiences. The risk of not capturing market rates of return may outweigh the benefits of beating the market from time to time. The ups and downs of speculating don’t add all average out. And for an actively managed account, transaction costs, fees, taxes, and inefficiencies might burn 0.50 percent to 1.0 percent or more annually off of the return (see table 1 and figure 1).

Global Stocks and Bonds Have Rewarded Investors over the Long Term

A global, diversified approach to stocks and bonds over the long term—say, 10 years or more—has rewarded investors. Look at any long-term graph of a diversified stock or bond index and it’s clear that despite annual ups and downs, historically the market trends upward. Based on historical data, global stocks and bonds have rewarded investors.
investors over the long term. Figure 2 indicates that investments also have tended to outpace inflation.

Some might say that achieving the average market return or better depends on when investors get into the market. But looking at time frames of 20 years or more, it’s clear the range of those annualized returns will tighten up considerably when contrasted with shorter investment windows of say, one to five years. This suggests that long-term investors need not worry about the entry point.

This is an important nuance because as implied earlier, it’s futile to try to select the best entry point. Some studies have mined the historical data and failed to prove or disprove that some points of entry and exit are better than others. Some looked for triggers based on performance parameters such as, “If the market falls 20 percent, that’s the time to get in,” or, “If it climbs 20 percent, it’s time to get out.” These buying-and-selling trigger-point strategies don’t deliver any advantage over buy-and-hold strategies. Trying to stay out of harm’s way by using trigger-point rules doesn’t work (Lee 2009).

Lee (2009) demonstrates clearly why trying to stay out of harm’s way is a less than optimal strategy, stating: “Some investors may feel the urge to flee the market as the economy slows. However, moving assets into cash and fixed income until the economy recovers is a gamble. It is essentially a market-timing strategy that may provide relief from the brutality of stock market swings, but can be a costly decision.”

Figure 3 illustrates this point, that a long-term investment strategy and a diversified portfolio can make sense even during periods of low or flat returns. Even though the S&P 500 was flat for 10 years during 2000–2009, a more diversified portfolio was not flat for that period. Diversification may lead to upside capture, not simply downside dampening. And, with true global diversification, investors are able to own some of the most successful asset classes around the world during any period.

Portfolio Design Matters Most
The value of diversification implies that portfolio design is everything. Owning multiple asset classes versus picking stocks, timing the market, or selecting managers makes sense and has academic foundations and practical application behind it. Through intentional design, risk and reward parameters may be managed for each portfolio.

The fundamentals of portfolio design are like a control panel. The panel has levers we can adjust to different positions and combinations. These structural factors—the levers—and their positioning determine performance.

Portfolio design is complex. Determining an appropriate mix of investment factors takes into consideration the causes of portfolio return variations and an investor’s needs. Also critical are the ongoing portfolio adjustments and rebalancing.

For an efficient portfolio seeking to capture market premiums, designing for exposure to these premiums is critical too. Although most investors understand that being in

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stocks versus bonds will determine the riskiness of a portfolio, and ultimately determine its long-term return, other risk dimensions exist as well. For stocks, these dimensions are measured along the value-versus-growth spectrum, the small-cap versus large-cap spectrum, and the high-to-low profitability spectrum. These factors represent “portfolio controls” that modify risk and return characteristics long-term, as shown in figure 4. This is fundamental to our belief that portfolio design is key to the long-term investment experience.

Just as stocks have delivered a return premium compared with bonds long term, the markets have observed small-cap, value, and profitability premiums in the past. Under the hypothesis that these premiums will persist in the future, with proper portfolio design risk factors may be systematically pursued and premiums deliberately captured. Bond attributes correlate to historical returns too, and these attributes will likely govern future performance. Once bonds are sufficiently diversified across global issues, the credit quality and maturity characteristics imply the behavior of a portfolio.  

Investors aren’t created equal. Seldom do they have the same goals or time horizons. That’s why one portfolio can’t fit all. Within a wide array of portfolio designs, the exposure intensity to these many factors may be matched to investor needs and goals. The concept seems simple. Actual implementation of portfolio design and ongoing management is highly customized and comes with significant nuance and complexity.

Conclusion

Efficient portfolio design takes the work of leading academics, Nobel prize-winning models, and decades of data and analysis, and applies them to real-world portfolio construction. Investing in this manner is influenced by the following four core fundamentals:

- Markets are efficient and priced fairly.
- Speculation is futile.
- Global stocks and bonds have rewarded investors over the long term.
- Portfolio design matters most.

The result has been portfolios that strive to capture market premiums and tamp down the volatility of individual asset classes. This investment strategy is for long-term investors, institutional and individual, who want to preserve principal and mitigate market volatility with assurance that their portfolios are designed to deliver returns commensurate with the risk they are assuming.

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References

1. See Fama’s University of Chicago Booth School of Business faculty biography at http://www.chicago-booth.edu/faculty/directory/ef/ef.fama.
3. The S&P 500 Index is an unmanaged index. Source: Standard & Poors. The Balanced 60/40 portfolio is a hypothetical portfolio comprised of institutional mutual funds. 60/40 allocation weightings: 15-percent U.S. large company 3-percent small cap; 3-percent micro cap; 15-percent large-cap value; 6-percent real estate; 13-percent international large cap; 20-percent five-year global fixed; and 15-percent one-year fixed income; 5-percent alternatives. SJS developed this hypothetical 60/40 allocation to remain static from year to year; it does not represent an actual SJS model. This allocation’s returns include reinvested dividends and are gross of any advisory fees. (Please see “Hypothetical Performance Disclosures.”)

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Figure 4: Portfolio Design Control Panel

One way to understand portfolio design is to think in terms of portfolio controls that when positioned modify the risk and return characteristics over the long term.