PORTFOLIO THEORY CREATES NEW INVESTMENT OPPORTUNITIES

by Paula H. Hogan

Advances in portfolio theory are creating new investment opportunities for retail customers. This article reviews the key ideas of modern portfolio theory and their effect on the retail investment industry. It concludes by showing how practitioners can incorporate modern ideas of investment management into client portfolios and thus produce portfolios consistent with current investment knowledge.

Before 1952, investment managers focused mainly on the selection of individual securities. stocks deemed safe were allocated to widows and children while riskier stocks were reserved for wealthier investors, assumed to be capable of bearing greater uncertainty. There were no sophisticated measures of portfolio performance, and investment services were sold mainly on the strength of client relationships.

That began to change in early 1952, when economist Harry Markowitz introduced a revolutionary concept: the risk of a portfolio depends not on the individual risk of each investment, but on how all securities in the portfolio behave together. Markowitz's ideas earned him a Nobel Prize and made obsolete the old approach of "buy blue chip stocks for conservative clients." His ideas created a new goal of money management: the construction of portfolios that produce the highest expected return for a desired level of risk. With this theoretical advance came the idea that even widows and orphans should have some volatile securities in their portfolios. Diversification--the idea of assembling a variety of assets that perform differently from each other instead of a portfolio of similar performing investments--became the essence of portfolio construction.

PAULA H. HOGAN, CFA, CFP is a fee-only financial planner in Milwaukee, Wisconsin, and president of the Wisconsin chapter of the American Association of Individual Investors.

Problems for Practitioners

This concept caused problems for practitioners. Who could sort through all the possible combinations of assets to find the portfolios with the highest expected return for each level of risk? In the early l960s, William Sharpe came to their aid. His idea, leading to another Nobel Prize. identified the stock market in toto as the most efficient equity portfolio. According to Sharpe's Capital Asset Pricing model, no other combination of stocks can offer an expected return higher than the market's return at that particular market level of risk.(2) He argued that if there was a portfolio of securities offering a return higher than the market at only a market level of risk, then the natural forces of supply and demand would force the price of those securities hack in line. Sharpe concluded that the optimal way to construct a portfolio is to choose an appropriate level of risk,. invest in the market portfolio to the extent of this risk-bearing ability, and then invest the remaining funds in low-risk assets such as Treasury bills.

This was a major assault on the idea that investors could consistently beat the market by picking winning stocks. Sharpe's model suggests that the market is efficient and that the research-gathering and extra transaction costs incurred why stock-picking activities cannot be expected to yield superior investment performance. According to this view, a stock's price quickly reflects all known information about its value. Only unanticipated information would cause the stock to deviate from its expected performance. Obviously, such unanticipated information frequently occurs, but it occurs randomly and is equally likely to he negative or positive. As a result. an investor cannot predict future price changes, and thus cannot reliably discern winning stocks in advance.

Academic or Real World?

Of course, this theory depends on some important assumptions,. namely that each investor has the same risk aversion, knowledge, tax situation,. and time horizon. These assumptions are so academic that we may reasonably question the model's relevance to individual investors. Interestingly, though practitioners have widely and heatedly debated the

The odds of an investor betting early and big on a high-performance fund, and thus actually gaining the above-market return, are extremely low.

correctness of this efficient-market theory, many studies have documented the fact that money managers have not been able to consistently beat the market. (3)

If active managers cannot beat the market, what do they do? There are two possible answers:

- They assume a risk level different from the market's, and therefore have expected returns different from the market.
- Or they assume one of the slots in a basically random distribution of outcomes.(4)

For example, in the current universe of over 3,000 mutual funds, one would expect, on the basis of probability alone, that a few funds will perform well above average, including some over a period of several years, merely by chance. This is not to say that managers do not differ in ability. But distinguishing a good money manager from a lucky manager takes about a decade or more of data to make a statistically correct decision.[5] In either case, the odds of an investor betting early and big on a high-performing fund, and thus actually gaining the above-market return, are extremely low.

In the 1970s, pension fund managers learned this lesson the hard way by failing to outperform the market despite their major expense of time and effort. In response, some large pension funds developed index funds, which are mutual funds designed to replicate the risk and return of the market, initially defined as the Standard & Poor's 500 (S&P 500). In this process, pension fund managers discovered that index funds are significantly cheaper than actively managed funds because indexing eliminates the expense of individual stock selection. (It now appears that active management must outperform the market by about two percent a year to make up for its relatively higher transaction and management costs.)

Today, indexing. or passive management. is a standard part of the investment world. Institutional money managers explicitly index roughly 30 percent of their assets.[6] A smaller percentage of money is "closet indexed"—actively managed, though in fact it closely mirrors the market.

Impact on the Individual Investor

In the 1980s, index funds became available to the retail market, either directly to consumers or through the inclusion of index funds in 401(k) options for employees. They are widely available to individual investors at low-cost for many market sectors. including small and large capitalization, and domestic and international securities. While retail index funds comprise less than three percent of the market, index funds and their market share are growing. The percentage of equity assets in index funds in the Morningstar database rose nine-fold in the last decade, from 0.23 in 1983 to 2.08 in 1993. The flagship Vanguard S&P 500 index fund has grown from a starting base of zero in the mid-1970s to its current rank as the 10th largest fund in the Morningstar datahase.[7]

This trickling down of academic notions of portfolio excellence is also seen in the proliferation of asset-allocation products. In a widely quoted academic study. Brinson, Hood, and Beebower show that the major determinant of the variation in a portfolio's return stems from the sole decision of how to divide funds among the various classes of assets: cash, bonds, and stocks.[8] This is in keeping with the already cited academic theories suggesting that the benefit of focusing on the mixture of securities, not on the individual securities, for optimal portfolio construction, and on the notion that choosing a portfolio level of risk is the first step in constructing a sound portfolio. These academic ideas, along with a desire on the part of consumers for simplification, are the rationale behind these asset-allocation products.

Another example of academic theory washing over into the real world is the recent introduction of the Prudent Investor Rule.(9) This change in trust law incorporates modern ideas of portfolio theory into a new standard to which trustees are held accountable. This standard requires that trustees ensure that assets are well diversified and that the risk of the portfolio matches the risk of the beneficiary. including risk of loss of principal and of loss of purchasing power. This new standard for fiduciaries will be a potent tool for persons trying to promote change in a personal trust.

The major determinant of the variation in a portfolio's return stems from the sole decision of how to divide funds among the various classes of assets: cash, bonds, and stocks.

Rise of Asset-Class Investing

Meanwhile, as individual investors he-come accustomed to these modern ideas of portfolio management, new theories are being proposed in academic circles that may have Similarly profound effects on how' individuals manage their personal investments. For example, in a recent study, University of Chicago professors Ken French and Eugene Fama suggest that Sharpe identified onIy one of three fundamental determinants of a portfolio's total return.(10) Sharpe said the important decision in a portfolio is how much of the portfolio is invested in the stock market. French and Fama add two other fundamental factors:

- The representation in the portfolio of small capitalization stocks (stocks whose price times the number of shares outstanding is low)
- The representation of value stocks (stocks whose price is low relative to the stock's book value)

Building on this theory. other researchers are investigating the idea that tilting a portfolio toward a focus of small cap and value stocks is most effectively done with global instead of only domestic investments.[11] With these notions circulating at the academic level, it is no surprise that we are beginning to see retail investment products that are index funds with a small cap or value tilt, or a combination, offered on a global basis. As passive management evolves into the indexing of more precisely defined sectors of the economy, we move away from the world of individual security selection into

the more modern world of asset-class investing.

Effect of Changing Technology

Putting the ideas of asset-class investing into practice requires sophisticated use of technology. Advances in computer technology are transforming the world of investment management, and in particular, trading methods. For example, index funds can reduce transaction costs by processing large block trades through off-exchange, matching networks, often at a fraction of the cost levied by the more traditional exchanges. In more illiquid markets, such as the small stock area, a trade's market impact often is the most important portion of total transaction cost. Portfolio managers can reduce these costs by bidding for large blocks of stock at discount prices. A good example of these trends is the trading desk at Dimensional Fund Advisors (DFA), a leading asset-class investment manager. At DFA., portfolio managers sit in front of several computers loaded with huge databases of financial information and showing real-time quotes in several markets. By refining their use of these databases and positioning themselves as a major block trading house, DFA has been able to reduce trading costs to virtually zero, even in the highly illiquid area of small capitalization stocks.

Index funds have very low costs because they use sophisticated trading strategies and because they do not pay the high cost of gathering "predictive". information about individual securities. Operating expenses for actively managed equity mutual funds often exceed 1.00 percent a year. while comparable costs for index funds range from 0.20 percent for major market indexes to about 0.65 percent for the more specialized niches like small stocks or international stocks.

Asset-Class Investing Strategies

Practitioners can pursue an asset-class investing strategy by using index mutual funds to gain an almost generic access to the various sectors of the capital markets. This strategy has important cost and theoretical advantages for our clients. In this context, practitioners recommending a 1950s boutique-style of security selection operate at a severe disadvantage. How can practitioners ensure that their advice is consistent with modern investment knowledge?

- Think of your client's portfolio in its entirety. Avoid focusing primarily on the selection of individual securities or individual mutual funds.
- Focus instead on choosing an appropriate risk level for the portfolio and invest in the more volatile sectors of the market up to the level of this risk aversion.
- When reviewing a portfolio, look for diversified exposures to a wide variety of market sectors, including small and large capitalization, growth and value, domestic and international. A well-diversified portfolio probably has some individual investments which, on their own, may not he attractive to the client.
- Monitor implementation costs. To the extent you are buying a generic, commodity-like product, the purchase decision should be influenced by price.
- Stay tuned for more change. Technological developments and academic theories will continue to advance the field of portfolio management and create new opportunities for our clients. ■

Practitioners can pursue an asset-class investing strategy by using mutual funds to gain an almost generic access to the various sectors of the capital markets.

Footnotes

1. Harry F. Markowitz, "Portfolio Selection," *Journal of Finance*, Vol. VII, No. 1, March 1952, pp. 77-
2. William F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk," *Journal of Finance*, Vol. XIX, No. 3, September 1964, pp. 425-442.
3 Charles D. Ellis, *Investment Policy* (Homewood, IL: Business One Irwin), 1993, as well as Gibson, Malkiel, and Bernstein references cited below.
4. B. G . Malkiel, *A Random Walk Down Wall Street* (New York: WW Norton), 1990, pp.156-185.
5. Roger C. Gibson, *Asset Allocation* (Homewood, IL: Business One Irwin) 1990, pp.14.
6. Peter Bernstein, *Capital Ideas: The Improbable Origins of Modern Wall Street*, (New York: Maxwell Macmillan International), 1992, pp. 247-9.
7. Statistical data provided by John Rekenthaler of Morningstar, Inc.
8. Brinson, Hood, and Beebower. "Determinants of Portfolio Performance," *Financial Analysts Journal*, July/August 1986, pp.39-43.
9. The American Law Institute, *Restatement of the Law Third*, Prudent Investor Rule, Washington, D.C., May 1990
10. E.F. Fama and K.F. Kenneth, "The Cross-Section of Expected Stock Returns." *Journal of Finance*, June 1992, pp.427-65. See also *AAII Journal*, September 1992, p. 19.
11. C. Capaul, I. Rowley, and William F. Sharpe, "International Value and Growth Stock Returns," *Financial Analysts Journal*, January/February 1993 pp 27-36.