CHAPTER 6: Investment Strategies and Investment Vehicles

In this chapter we review investment vehicles that provide professional management of investments within categories ranging from entire markets and geographic areas on the one hand to targeted market segments or investment styles – e.g., growth stocks, value stocks, etc. Professionally managed funds exist along a spectrum of choices. Investors may choose a fund seeking to replicate a pre-existing benchmark index, such as an S&P 500 stock fund that seeks to replicate the performance of the S&P 500 Stock Index. Alternately, they may prefer a fund that seeks a level of income or rate of growth in excess of a comparable index. Although all portfolios must be managed actively to assure that they continue to fulfill their investment objectives, the term "passively managed" often describes management of index-oriented funds. The manager of a passively managed fund spends little or no effort on security selection or market timing activities. By contrast, the term "actively managed" describes funds that use a variety of analytical techniques and methodologies to select the securities that, in the manager's opinion, offer attractive income/growth potential. Understanding the strengths and weaknesses of each approach is a prerequisite to informed investment decision making.

POOLED INVESTMENT VEHICLES: MUTUAL FUNDS & EXCHANGE TRADED FUNDS

Once an investor determines his portfolio's target asset allocation, the next task is to select investments to meet each of the asset class weighting targets. This can be done by purchasing either individual securities (individual stocks, bonds, options contracts, etc.), or pooled investment vehicles (mutual funds, exchange traded funds, etc.). For all but the largest portfolios, pooled investment vehicles are preferable if the investor wishes to achieve a reasonable level of diversification.

Pooled investment vehicles such as mutual funds and exchange traded funds offer efficient diversification for each dollar invested. Even small dollar amounts invested in a broadly diversified fund can spread investment risks across many individual issues within an asset class. A U.S. investor attempting to purchase a broad sample of Pacific Rim small company stocks, for example, would face daunting information and trading costs were he to do so through purchase of individual stocks. Mutual funds, however, offer significant economies of scale because they spread costs across thousands of customers, and risk over hundreds of securities.

Selection Criteria

When selecting a mutual fund, it is important to monitor how closely the fund's performance mirrors the performance of the asset class it is intended to represent within the portfolio. This is not a simple matter of consulting the fund's prospectus or marketing materials. The behavior of funds, and thus their reliability as a representative of a given asset class, can change significantly for a number of reasons:

- Fund investment objectives, policies, and portfolio holdings can change during a market cycle;
- Fund investment objectives, policies, and

portfolio holdings can change with a transition to a new manager, or with a change in the fund's analytical support team;[1]
- Funds may experience style drift as the corporate capitalization and firm accounting ratios of its holdings change over time;
- Funds define asset class boundaries differently. For example, there is disagreement within the financial community about where to draw the line between small cap and mid cap companies.
- Prospectuses often give fund management wide latitude to purchase different kinds of securities. Some funds, for example, invest in international equities or bonds despite the fact that their marketing literature suggests that they are domestic stock funds.

To reach a judgment about how well a fund's returns track those of a comparable asset class, the investor may use statistical methods. A commonly used evaluation metric is the 'coefficient of determination,' or R^2 statistic.[2] R^2 is a measure of how closely the variations in return of one data series – e.g., an index – explain variations in a second data series – e.g., a mutual fund.[3] An R^2 statistical value close to 100 indicates the success of the fund in capturing the returns of the asset class it represents. Further, the R^2 statistic provides data on the degree to which investment vehicles chosen to meet asset class weighting targets have strayed from their intended purposes – a state of affairs which, left uncorrected, might deform the portfolio's future asset allocation.

ACTIVE FUND MANAGEMENT

Investment management styles fall into one of two basic categories:

- Active management attempts to achieve superior returns by identifying mispriced securities. Superior returns follow from a willingness to disagree with market prices and to concentrate holdings in a limited number of securities. The manager embraces asset concentration risk believing that, over time, other market participants will identify the mispricing he has noticed, and drive the security's price to its "true" price, generating better than market returns for his fund.
- Passive management attempts to earn market returns by buying all (or a statistically representative sample) of the securities within an asset class or index. Generally, passive management does not try to beat market returns, but rather to match them.

The distinction between active and passive investment strategies is nicely captured by the following distinctions: "passive investment management consists of tracking the market, without attempting to anticipate its evolution … the objective of active investment management is to perform better than the market, or better than a benchmark that is chosen as a reference."[4]

Active Management

The fund prospectus defines the investment objective(s) of an actively managed fund. Actively

[1] Porter, Gary E. and Trifts, Jack W., "The Career Paths of Mutual Fund Managers: The Role of Merit," Financial Analysts Journal (July/August, 2014), pp. 55-71, estimate that only 6.85% of managers having sole responsibility (control) of an actively managed mutual fund remain for a period of 10 years or more. Close to 40% of actively managed fund managers terminate during the first 2 years of their tenure as solo managers.

[2] The square root of R^2 is the correlation statistic. The reader should note that a high correlation to a benchmark, although important, may not be as critical as the selection of the benchmark used as a proxy for the asset class. For example, a small cap fund emulating the Citibank S&P Small Company Value Index will perform very differently from a fund emulating the Russell 2000 Small Company Index despite the fact that they are both small company index funds. Choice of appropriate benchmarks is a critical decision for both asset allocation policy, and for investment manager selection and retention policy. See the essay entitled "Small Company Stock Indexes" in the ***Investment Quarterly 2010 Q2***. This is available on the Schultz Collins web site.

[3] Technically, R^2 is a statistic derived from regression analysis. In many cases, it can serve as a "goodness of fit" measure. A high value of the R^2 statistic indicates a close correspondence between the returns of the fund and the returns of the index used to proxy the asset class.

[4] Amenc, Noel & Le Sourd Veronique, Portfolio Theory and Performance Analysis (John Wiley & Sons, 2003), pp. 6-8.

managed funds employ financial analysts to perform economic research and security analysis, and tend to experience relatively high portfolio turnover. A limited number of securities are selected from the investment universe (the "opportunity set"). Selection and timing of security purchases rely on either fundamental analysis (business cycle, inflation and interest rate forecasting), or on technical analysis (forecasting stock market trends based on price and volume movements). The fund's management attempts to beat the market.[5] Purchase and sale of individual securities may be based on macroeconomic or capital market forecasts, or forecasted inputs to pricing and asset volatility models. Success of investment decisions is largely a function of the accuracy of analyst predictions and on the reliability of their security valuation models.[6]

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Traditional wisdom holds that successful portfolios derive either from superior security selection, or astute market timing decisions, or both. A preponderance of academic evidence, however, indicates that it is difficult to sustain consistent market beating performance using either of these approaches.

FUNDAMENTAL ANALYSIS

The Efficient Market Hypothesis represents a challenge to classical approaches to stock investing.[7] Financial analysts had long used fundamental analysis to locate mispriced securities. At the heart of such systems lies the belief that analysts can use accounting ratios, valuation techniques, and data from corporate financial statements and economic reports to discover overvalued or undervalued stocks. Good fundamental analysis entails investigating a firm's financial statements, industry position, general economic trends, competitive advantages, earnings prospects, etc., to forecast its future profitability.

Historically, many believed that financial analysts were best positioned to predict future stock price movements. Their in-depth knowledge and close observations of particular firms or industries justified trading recommendations. Traditionally, the analyst would alert investors – through their brokers – to undiscovered

[5] Active managers seek to add value by beating their comparative benchmarks. Investors, however, should evaluate their personal objectives prior to portfolio design. Is the objective to beat a market or is the objective to solve an intertemporal cash flow problem (e.g., monthly retirement income) or a wealth accumulation objective (fund a college education)?

[6] A vast amount of literature explores the accuracy of analyst forecasts, the extent to which forecasts may be biased, and the impact of SEC disclosure obligations (Regulation FD's requirement for corporations to disclose material information publicly and uniformly). Dreman, David N. & Berry, Michael A, "Analyst Forecasting Errors and Their Implications for Security Analysis," Financial Analysts Journal (May/June, 1995), pp. 30-41 provides a good historical survey of the research. A comprehensive update is found in Francis, Jennifer, Chen, Qi, Willis, Richard H. & Philbrick, Donna R., Security Analyst Independence (Research Foundation of CFA Institute, 2004). The investor wishing to select active managers should be sufficiently skilled so that he can, at a reasonable confidence level, identify managers with positive forecasting abilities. Collins, Patrick J., "Prudence," The Banking Law Journal (January, 2007), pp. 3-70 discusses the money management industry's use of forecasting and security valuation models. This is available on the Schultz Collins website.

[7] For example, Benjamin Graham, a prominent advocate of techniques of fundamental analysis, writes, in 1976: "I am no longer an advocate of elaborate techniques of security analysis in order to find superior value opportunities... In the old days any well-trained security analyst could do a good professional job of selecting undervalued issues through detailed studies; but in the light of the enormous amount of research now being carried on, I doubt whether in most cases such extensive efforts will generate sufficiently superior selections to justify their cost. To that very limited extent I'm on the side of the "efficient market" school of thought now generally accepted by the professors." "A Conversation with Benjamin Graham" Financial Analysts Journal (September/October, 1976), p. 22.

buying opportunities or unsuspected problems.[8]

The widespread use of fundamental analysis by the major institutions that dominate trading is an important reason why bargains can no longer easily be found. The more numerous and more skillful analysts become, the more difficult it is to earn abnormal profits. As one Wall Street observer comments:

> *... the movement of increasing amounts of money into professional management ... would make it just that much more difficult for us to capture rewards for our clients' pocketbooks. With competition for information becoming ever more intense, professional managers were destined to have a hard time in trying to outperform one another. We could not beat the market because we were rapidly becoming the market.*[9]

Academic evidence raises questions whether analysts can add value for retail investors in a market dominated by institutional analysts:

> *Discovery of good firms does an investor no good in and of itself if the rest of the market also knows those firms are good. If the knowledge is already public, the investor will be forced to pay a high price for those firms and will not realize a superior rate of return.... This is why fundamental analysis is difficult. It is not enough to do a good analysis of a firm; you can make money only if your analysis is better than that of your competitors because the market price is expected already to reflect all commonly available information.*[10]

The existence of large numbers of savvy analysts who ensure that stock prices instantaneously reflect available information creates an investment environment in which successful security selection is difficult.

TECHNICAL ANALYSIS AND MARKET TIMING SYSTEMS

Technical analysts differ from financial analysts because they look primarily at information about a company's stock trading patterns, such as price, volume and other market-related trends. These analysts generally place less importance on accounting information and macro-economic data. However, the central question is whether a careful analysis of past stock price movements and overall market trends can create a successful investment strategy.[11]

In a pioneering 1953 statistical study, Maurice

[8] It was not that long ago that investors valued brokers because of their timely tips. Money managers were selected for their ability to act on insider information gleaned from their positions on boards of directors as well as from their relationships with corporate management. Today, those who trade on material nonpublic information end up in jail. In many respects the role of the broker has changed from a vigilant watchman of market developments who seeks to protect investors from adversity, or who alerts clients to emerging opportunity, to something akin to a waiter announcing the 'house specials' on the current investment menu.

[9] Bernstein, Peter., Capital Ideas: The Improbable Origins of Modern Wall Street. Maxwell Macmillan, New York (1992), p. 140.

[10] Bodie, Zvi, Kane, Alex, and Marcus, Alan J., Investments. Irwin, Burr Ridge, Illinois (1993), p.364.

[11] Technical analysis underlies two strategies: (1) market timing; and, (2) trade execution. Market timing refers to tactical asset allocation strategies such as sector rotation, fixed income duration management in light of interest rate forecasts, equity beta management in light of macroeconomic forecasts, and so forth. Tactical asset allocation assumes a willingness to deviate from the portfolio's long-term strategic asset allocation. The extent of the deviation is a function of the investor's confidence in his or her forecasting ability. Unlike fundamental analysts, technical analysts justify such deviation based on market-related information rather than on exogenous accounting/macro-economic information. This essay does not discuss the use of technical analysis in the formation of portfolio trade execution strategies. There is little question that technical analysis has great value in the areas of portfolio implementation and trading strategies. See, for example, Hasbrouck, Joel, Empirical Market Microstructure, Oxford University Press (2007), p. 4: "At a single instant there may be many prices, depending on direction (buying or selling), the speed with which the trade must be accomplished, the agent's identity or other attribute, and the agent's relationship to the counterparty ..." Close attention to price volatility, volume, evidence of buy/sell imbalances in the market, and so forth, may be critical to implementing successful trading strategies. See, also, Schwartz, Robert A. & Francioni, Reto, Equity Markets in Action: The Fundamentals of Liquidity, Market Structure & Trading (John Wiley & Sons, 2004), pp. 95-96.

Kendall considered this question. Kendall found no evidence that any statistically meaningful patterns could be found in stock prices. On any given day, it is equally likely that the price of a stock would increase or decrease, no matter what the stock's recent performance – a so-called "random walk."[12] Such randomness in price changes is characteristic of an efficient, rational market in which investors are quick to act on new events (information). According to this line of research, it is the events themselves that are unpredictable. In such a market, new information alters investor perceptions and, by definition, new information arises in an unpredictable fashion.[13]

Some technical stock analysts promote market timing systems. Market timing is the attempt to align portfolio exposure to market risk factors in anticipation of predicted changes in security prices. The lure of market timing is strong. It promises a system that generates gains and avoids losses. Market timing vocabulary is pervasive. It is found in many articles written by the popular press, and is constantly broadcast over radio and TV programs.

Claims of market timing ability are a fruitful area for independent, third party investigation because standard statistical tests can readily validate or invalidate such claims. In general, market timers justify their asset management strategies by advancing three assertions:

1. The decision maker or advisor possesses market timing ability;
2. Market timing transactions reduce investment risk; and,
3. Market timing transactions increase investment returns.

At the limit, market timing strategies eschew the benefits of diversification in favor of concentrating asset positions into a single capital market (stocks, bonds or cash). However, if the market timing call is *incorrect*, the effect on portfolio value can be catastrophic. This is easy to see when the market timing recommendation calls for movement from all cash to all stocks. Given the susceptibility of a 100% equity position to unanticipated economic shocks, such a concentrated bet demands a high level of confidence in forecasting skills. When a timing recommendation calls for abandoning stocks for cash, however, the risk may be less easy to see. In this case, however, the catastrophe to wealth occurs not in loss of principal, but in opportunity costs – the cost of missing the wealth-generating process of the stock market.

The first important inquiry into market timing abilities is the Treynor and Mazuy essay published in 1966.[14] The authors test the hypothesis that market-timing skill can be found in the universe of professional mutual fund managers. They define market timing skill

[12] Kendall, Maurice. "The Analysis of Time Series, Part I: Prices.," Journal of the Royal Statistical Society, London. Vol. 96 (1953), pp.11-25. Subsequent research indicates that long-term price changes evidence some degree of predictability. See, for example, Campbell, John Y. & Shiller, Robert J., "The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors," Review of Financial Studies (Fall, 1988), pp. 195-228 and Fama, Eugene F. & French Kenneth R., "Business conditions and expected returns on stocks and bonds," Journal of Financial Economics (November, 1989), pp. 23-49. Whether investment managers can successfully exploit market predictability to earn excess profits remains an open question. See, for example, Malkiel, Burton G., "Can Predictable Patterns in Market Returns be Exploited Using Real Money?" The Journal of Portfolio Management (30th Anniversary Issue, 2004), pp. 131-141.

[13] It is worth reiterating that an efficient market can have irrational investors. The market is ***informationally efficient*** in that it quickly impounds the financial impact of news. However, in assessing the financial consequences of news, investors may overreact. One cannot predict the direction and magnitude of these assessments; and, therefore, it is difficult to develop profitable investment strategies in respect thereto. Rational markets can develop bubbles, and such asset price bubbles may exist on both the downside and the upside. The classic study in this area is Blanchard, Oliver J. and Watson, Mark W., "Bubbles, Rational Expectations and Financial Markets," Crises in the Economic and Financial Structure, Paul Wachtel, editor, D.C. Heath and Company (1982) pp. 295-316. This study suggests that it is both difficult to determine the presence or absence of a bubble; and, assuming a successful diagnosis of a bubble's existence, it is often financially perilous to bet against it because it may be in the interest of many financial institutions to perpetuate it.

[14] Treynor, Jack & Mazuy, Kay, "Can Mutual Funds Outguess the Market?" Harvard Business Review (July/August, 1966), pp. 131-136.

as the ability to raise the sensitivity of the portfolio to the return of the stock market prior to the onset of bull market periods and lower portfolio sensitivity to stocks in anticipation of bear markets. Statistically, they compare (regress) returns in excess of the risk-free rate for a mutual fund's portfolio with returns in excess of the risk-free rate achieved by the stock market. If there is evidence of successful market timing ability, the characteristic line of the regression equation (i.e., Beta) should evidence a steep slope as the excess returns of the stock market grow large and a shallow slope as the excess returns turn negative (i.e., the market earns less than a T-Bill). Upon evaluating the professional management of 57 mutual funds over the period 1953 through 1962, the authors identify only one fund that exhibits statistically significant ability to time markets successfully.

In 1975, future Nobel Prize winner William Sharpe proposed another approach to measuring the market timing ability of investment professionals.[15] Sharpe assumes that a manager changes the composition of his or her portfolio based on market forecasts. Shifts in portfolio composition and weighting are, therefore, proxies for the manager's market predictions. A close correspondence between the predictions of the manager and the actual direction taken by the market is evidence of superior market timing skill. However, given the fact that markets tend to outperform risk-free investments approximately two-thirds of the time, a market timer who is an eternal optimist will exhibit a 67% success rate. Sharpe therefore proposes several statistical adjustments to measure the proportion of correct timing calls in both bull and bear markets. A perfect market timer generates a score of 200% (correct prediction of each bull and each bear market) while an eternal optimist with no prediction skills generates a score of 100% because he or she will always fail to predict a bear market but will never miss a bull market. Sharpe's research leads to two important conclusions:

1. There is little evidence of superior market timing skills among the population of professional investment managers (i.e. the scores do not statistically differ from 100%); and,
2. The onus of transaction costs and commissions incurred in a simple one-time-per-year market timing system between stocks and T-bills demands that the market timer make correct calls at a 74% frequency rate (i.e. achieve a score of 148 or better) to beat a naive buy and hold strategy.

Further refinements in statistical methodology characterize a sequence of studies in the 1970s and 1980s. The majority conclude that, in general, the professional money management industry possesses ***negative*** market timing skills.[16] The Journal of Financial Services Research published, in 1998, a study that extends research on market timing abilities to an evaluation of bank common ("pooled") trusts during the period 1984 – 1992.[17] The authors conclude that, in the aggregate, "bank trust department portfolio managers are unable to time the market successfully by changing their portfolio betas in anticipation of differential market conditions and, thus, are unable to outperform a passive buy and hold investment strategy." These results are what you would expect to find in relatively

[15] Sharpe, William F., "Likely Gains from Market Timing," Financial Analysts Journal (March/April, 1975).

[16] See, for example, the survey in Reilly, Frank K., & Brown, Keith C., Investment Analysis and Portfolio Management Fifth Edition (Dryden Press, 1997), pp. 1015-1016; and Jones, Charles P., Investments: Analysis and Management Eighth Edition (John Wiley & Sons, Inc., 2002), pp. 303-304.

[17] Sahu, A., Kleiman, R., & Callaghan, J., "The Timing and Stock Selection Abilities of Bank Funds: Evidence Based on Meta-Analysis," Journal of Financial Services Research (1998), pp. 137-152.

efficient markets.[18] These are markets in which the effects of economic, political, tax & regulatory, and firm-specific news are quickly impounded in the price of stocks. In this type of market, the price of any asset reflects the consensus opinion of investors regarding all information affecting the risks and rewards of owning the security.

When it's easy to make money, investment advice is a luxury; when markets tumble, investors value actions that preserve wealth.

Following the global recession of 2008-2009, the subset of market analysts who had correctly predicted a significant drop in financial markets attracted renewed interest from private investors who had suffered a great decrease in personal wealth. To a more limited extent, institutional investors also looked for managers who (1) reduced their portfolio's stock market risk throughout the first part of 2008; and, (2) increased risk measures in the Spring of 2009. When it's easy to make money, investment advice is a luxury; when markets tumble, investors value actions that preserve wealth. The search to identify advisors who could foresee forthcoming market volatility and, in anticipation of a market downturn, could take precautionary steps to soften its detrimental impact, became the new "prudence." The investment advice profession took a sharp turn towards the fortune telling profession.

During this period, one of the more successful market timers was Arch Crawford, author of Crawford Perspectives. The newsletter of August 11, 2008 correctly predicted the oncoming stock market debacle in the Fall and its subsequent recovery in the Spring. Although under most objective metrics, their performance over the last ten to fifteen years is excellent,[19] many believe that the Crawford Perspectives is merely the lucky monkey. You can judge for yourself by reading the text of the market prediction:

> *We reiterate that most of the false and underhanded will come to light under the passage of Mars in opposition to Uranus, beginning the potential Crash portion of that synodic cycle, from August 6 forward to late March of '09. Our government, in cahoots with Wall Street's Sell Side, has been plastering over the extent of economic dislocation which is yet to be revealed. It is our solemn belief that the powers that be, who have been holding back the inevitable corrective deluge, will NOT be able to stand against the onslaught of the Mars-Uranus energies this hurricane season, nor yet the Saturn oppositions to Uranus, the 1st of which appears as malevolent omen on our election day, November 4th.*

Here is the detailed monthly prediction for mid-August through mid-September:

- AUG 1 = SOLAR ECLIPSE is tightly square Vesta

[18] A notable exception to the preponderance of academic opinion is found in Grinblatt, M. & Sheridan, T., "Mutual Fund Performance: An Analysis of Quarterly Portfolio Holdings," Journal of Business (1998), pp. 393-416. This study finds evidence of market timing performance persistence and abnormal returns from market timing strategies. However, the magnitude of abnormal returns was not great enough to justify the costs of implementing timing strategies. Other studies (e.g. Wagner, Jerry C., "Why Market Timing Works," Journal of Investing (Summer, 1997), pp. 78-81), provide evidence of positive returns to market timing for only limited sample periods. The phenomenon of limited periods of success for market timers, however, has been more deeply examined (e.g. Bauer, R. & Dahlquist, J., "Market Timing and Roulette Wheels," Financial Analysts Journal (January/February, 2001, pp. 28-40) and the study reaffirms academic conclusions regarding the low probability of market timing success.

[19] The Crawford Perspectives newsletter website [www.crawfordperspectives.com] quotes Forbes ***Newsletter Watch*** "There have been five-year periods along the way when Crawford's timing was at or near the top."

according to Bill Meridian will bring "Security" issues to high priority!

- AUG 4 = Mercury/Sun parallel (declination) oppose (contra-parallel) Pluto on Sunday bringing Monday's market sharply lower.
- AUG 6 = Mars opposes Uranus = Violent = Beginning of our potential CRASH period. 5 difficult aspects = Market DOWN! August 7 the DJIA was off 224.64 and serious War activity noted between Russia and the Georgian State.
- AUG 14 = Likely a trading POP in the inflation hedge commodities Gold & Oil
- AUG 16 = LUNAR ECLIPSE and unrelated violent T-square with Pluto opposing Uranian Hades, Mars squares both! THIS is the most violent and explosive day since Saddam Hussein unexpectedly attacked Kuwait! Major News of WAR!
- AUG 19 = Mars enters Libra, Moon enters Aries in opposition. Annoyances, nervous or nonsensical speech patterns.
- AUG 27-29 = Mercury and Venus take turns squaring Pluto = Devastating stock market declines!
- SEPT 1 = Labor Day Monday = Enjoy an extra day of rest & relaxation. Watch foreign markets may give a clue.
- SEP 3-4 = Sun conjoins Saturn, then trines Jupiter = Sharp flip-flop from cautious to over-optimistic = sharp rally?
- SEP 7-10 = Huge energetic planetary output. Mars, then Mercury, then Venus tightly aspect the Stationing Jupiter/Saturn trine!
- SEP 15-19 = BRADLEY Model makes a low during this period. Could we rally from here? October lurks … but without Bradley!

The reader may remember that the Lehman Brothers bankruptcy filing of September 15th froze global credit markets and threatened to precipitate a new great depression. Financial markets continued heading downwards until the first part of March 2009.[20]

Appropriate Portfolio Management During an Investment Crisis

Investors wish to achieve attractive investment return with little or no risk. Some financial firms capitalize on this dream by shaping their marketing campaigns accordingly. The implication is that the firm has the expertise to identify forthcoming market declines – the new catchphrase is "market bubbles" – and to guide investors safely through periods of market distress. Often, this boils down to promoting a best-investments-to-own-now sales pitch.

An important study by Terry Marsh and Paul Pfleiderer seeks to quantify the appropriate tactical response for investors suffering portfolio losses in the midst of a major market disruption.[21] They begin with the observation: "Perhaps the most natural response to a crisis, at least for many investors, is to 'flee to safety' as confidence in the market erodes and prospects appear to dim, especially for equities." However, they also note: "… an investor who flees to safety must convince another investor to take the other side of his trade and 'flee' to increased risk. Thus, only a subset of investors can flee to safety." Stated otherwise, assuming tradable dollar wealth is equally divided between risk averse and risk tolerant investors, anyone wishing to make a change in one direction must be met by someone willing to make the same change in the opposite direction.

[20] A more wide-ranging discussion of market timing – including a detailed look at a cross-section of market timing calls during the financial crisis of the third quarter of 1998 – is found in the paper entitled "Is This a Good Time to be in the Market?". This is available on the Schultz Collins website.

[21] Marsh, Terry and Pfleiderer, Paul, "Flight to Quality and Asset Allocation in a Financial Crisis," Financial Analysts Journal (July/August 2013) pp. 43-57.

In a financial crisis, "... asset prices must adjust so that a substantial number of investors find it in their interest to hold risky assets despite the increased uncertainty in the economy. Market clearing essentially requires that the 'average' investor be willing to hold the available assets, including risky assets, in roughly their market proportions ..." Risk averse investors will want to decrease their holdings of risky assets; risk tolerant investors will want to increase portfolio risk in the expectation of capturing higher future returns. Here's the key point: at any moment in a crisis, the risk/return tradeoffs offered in the marketplace must reflect the desire of all market participants to adjust their portfolio risk (up or down). As more investors wish to flee to safety, the risk/return tradeoff expectations – nothing is ever guaranteed – must become increasingly attractive to induce a sufficient volume of counterparty interest.

The authors consider multiple models reflecting various assumptions regarding the dispersion of risk tolerance among investors. No model is based specifically on the 2008-2009 global recession. Rather, the authors develop the mathematics for a more general model applicable for use within any period of financial turbulence. The base case financial crisis model assumes that equities decline in value by 40% and bonds by 10%. Additionally, it assumes that price volatility and return correlations increase substantially.

A market crisis causes complex interactions. For example, the decline in asset prices has a greater impact on the subpopulation of risk tolerant investors because, relative to more conservative investors, the risk tolerant group suffers a greater proportional decline in wealth because they hold more risky assets: "the distribution of wealth will shift toward the less risk tolerant." When measured across the entire investor population, this causes the average or representative investor's risk tolerance to decrease. In a bear market, this decreases general investor demand for risky assets; drives down the price of risky assets as investors flee to safety; and increases the expected future reward for acquiring risky assets: "we found that risk premiums on both equities and bonds increase substantially in response to the crisis conditions ... In the crisis scenarios we considered, we found that equity premiums increase by 25%-35% and bond risk premiums generally increase by 7%."[22]

Given crisis conditions, the optimal portfolio adjustment by any individual investor depends on whether his risk tolerance is greater or lesser than that of the average or representative investor. However, any adjustments must be consistent with the laws of supply and demand. "In a crisis, prices and risk premiums must adjust so that, as a rough approximation, one can say that the 'average investor' will not want to trade. The trades that any particular investor will want to make depend on how that investor's risk preferences and other characteristics compare with those of the average investor."

The study's bottom-line conclusion is significant: "One of our key observations is that the appropriate tactical responses for most investors in a crisis can actually be rather small ... In our base case with no differences in investor expectations, we found that for 80% of the investors, the appropriate adjustment involves less than 4% turnover ... only investors who are extremely risk averse or risk tolerant will find it appropriate to make significant changes in their allocations." In most model variations, the optimal portfolio asset turnover is less than 10%.

PERFORMANCE OF ACTIVE MANAGERS

Research suggests that active managers find it difficult to earn abnormal profits, or alpha (i.e.,

[22] The risk premium is the expected future reward (return above the risk-free rate) for holding a risky asset.

profits in excess of benchmark returns, given the portfolio's risk level).[23] The performance of major pension and endowment funds, and publicly traded mutual funds, provides significant information on this topic. Major institutions attract above average money management talent. Publicly traded mutual funds operate under the spotlight of daily published investment results. Successful funds attract millions of dollars in new contributions, while lagging results can shrink funds rapidly as investors bail out.

Funds with high expense ratios do not generate enough extra return to overcome the burden of the added expense. Good performance is negatively correlated with high-priced management. This evidence strongly suggests that one key to long-term investment success is to keep expenses low...

Although some studies indicate that active managers can achieve superior performance results before fees, the ability to beat the market after costs remains elusive. As the next section notes, winning managers in one period often fail to repeat their success in the following period. One systemic problem faced by active managers is that, more and more, they are competing against themselves. Fifty years ago, individual investors represented approximately 90% of the trading activity on the New York Stock Exchange, while institutional investors represented the remaining 10%. These numbers have reversed: in 2013 over 95% of all trading in listed stocks was executed by institutional investors.[24]

A Brief History of Money Manager Performance

The preponderance of early studies of actively managed mutual fund performance find that managers fail to add positive value when results are compared to the returns of a comparative, risk-adjusted benchmark. One study that surveyed returns from 115 funds from 1955 through 1964 found no evidence of a consistent ability to achieve superior performance. Indeed, performance was worse than predicted by a 50/50 chance model.[25]

A study of actively managed mutual fund performance from 1965 to 1984 (143 funds) by Elton, Gruber, Das and Hlavka[26] found that the mean annual alpha of funds evaluated for this period was negative (-1.59). That is, the value added by active management, as compared with the performance of the relevant benchmark index, was -1.59% per year. Although there were 34 funds with positive alphas during the period, no positive alpha value was statistically significant. However, of the 109 funds with negative alphas, 21 negative results were statistically significant.[27]

Even more dramatic is the finding that significant levels of active management (as evidenced by levels of

[23] Managers, for example, investing in large company U.S. stocks might seek to outperform the S&P 500 Stock Index. If the portfolio takes more risk than the index – perhaps by leveraging the portfolio through the use of derivatives – then the realized returns should be adjusted to account for the extra risk.

[24] Ellis, Charles D., "The Rise and Fall of Performance Investing," Financial Analysts Journal (July/August, 2014), pp. 14-23.

[25] Jensen, Michael C., "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," Journal of Business 42, no. 2 (April, 1969) pp. 167-247.

[26] Elton, Edwin J., Gruber, Martin J., Das, Sanjiv, and Hlavka, Matthew, "Efficiency with Costly Information: A Reinterpretation of Evidence from Managed Portfolios," The Review of Financial Studies, Vol. 6, no. 1 (1993), pp. 1-22.

[27] The term 'statistical significance' suggests that a manger's results are not merely a byproduct of luck. For example, a negative alpha at a level of statistical significance indicates that, more likely than not, a manager lacks skill.

trading – i.e., portfolio turnover percentage) detracted from investment performance rather than added to it. **FIGURE 6-1** illustrates the study's findings. The x-axis measures the excess return (alpha) achieved by active management.

Although active management subtracted value in every portfolio turnover range, the lower turnover managers outperformed those with high turnover. A similar relationship was discovered between fund expenses and performance results. Funds with high expense ratios do not generate enough extra return to overcome the burden of the added expense. Good performance is negatively correlated with high-priced management. This evidence strongly suggests that one key to long-term investment success is to keep expenses low and to eschew trading oriented systems.

If the managers of publicly traded mutual funds find it difficult to beat the market, what is the record of the private money management industry? The Brookings Institution in 1992 published a comprehensive study of private money management.[28] This study utilized the proprietary SEI database (a private company specializing in evaluating manager performance), which contains a wealth of information on private money managers' performance, total funds under management, accounts gained and lost over specified time periods, fee schedules, equity share turnover, investment style, and so forth.

EFFECT OF TRADING ACTIVITY ON PORTFOLIO RETURN (1965-1984)

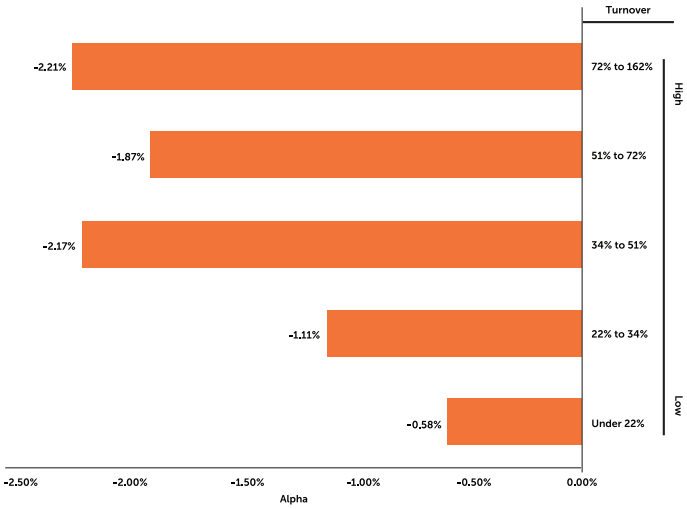

FIGURE 6-1

After adjusting for risk levels, the results for each rolling three year evaluation period 1983 through 1989 are shown in **FIGURE 6-2**.

According to the Brookings Institution, not only did the majority of private managers fail to beat an unmanaged index, but there was no consistency of performance which would indicate long-term superior management ability. Previous year's best performers

EQUITY MANAGERS VS. S&P 500

Interval	S&P 500 Return	Active Management Return	Percent Underperforming
1983 – 1985	19.8	17.4	65%
1984 – 1986	18.5	17.4	57%
1985 – 1987	18.1	17.7	51%
1986 – 1988	13.3	13.0	54%
1987 – 1989	17.4	16.4	60%

FIGURE 6-2

[28] Lakonishow, Josef, Shleifer, Andrei, and Vishny, Robert W., "The Structure and Performance of the Money Management Industry". Brookings Papers on Economic Activity: Microeconomics, Brookings Institution, Washington, D.C. (1992), pp. 339-391.

PRIOR YEAR PERFORMANCE AS AN INDICATOR OF SUBSEQUENT PERFORMANCE				
PRIOR YEAR PERFORMANCE	SUBSEQUENT YEAR PERFORMANCE			
	Top Quartile	Second Quartile	Third Quartile	Bottom Quartile
Top Quartile	26%	24%	23%	27%
Second Quartile	20%	26%	29%	25%
Third Quartile	22%	28%	26%	24%
Bottom Quartile	32%	22%	22%	24%

FIGURE 6-3

segregated themselves almost exactly according to random chance during the following year. Indeed, the study suggests that by selecting the worst performing managers of the base evaluation year, one would have had a slightly better chance of benefiting from top quartile performance in the following year (See **FIGURE 6-3**).

The study concludes that active manager trade strategies are unproductive when compared to naïve buy-and-hold portfolios:

> *... trades made by the funds were counter-productive, costing on average forty-two basis points relative to a portfolio frozen for six months and seventy-eight basis points relative to a portfolio frozen for twelve months.*[29]

There was no positive relationship between the fees charged by private managers and actual performance results. When management fees were considered, "the results from the search database would lead one to conclude that active management subtracts value."[30]

Burton Malkiel's comprehensive study of mutual funds from 1971 to 1991[31] points out that most performance evaluations overstate the benefits of active management because of "survivorship bias." Survivorship bias occurs when research evaluates only the track record of funds that have survived for the entire period. Presumably, the failed funds went out of business because of poor investment performance. Excluding the record of failed funds biases performance measurement (as seen in **FIGURE 6-4**).

The Best of the Best

From time to time one hears brokers or financial planners assert that their role is not to place client funds in average actively managed fund. Rather, it is to identify superior funds and to make sure that client money is invested in this "best-of-breed" category. We assess the efficacy of this strategy by reference to two studies that focus on the sub-group of investment managers that have achieved a better-than-average track record.

[29] Ibid., p. 354.

[30] Ibid., p. 351.

[31] Malkiel, Burton G., "Returns from Investing in Equity Mutual Funds 1971 to 1991," The Journal of Finance (June, 1995), pp. 549-571.

PERFORMANCE CONSISTENCY: THE FORBES MAGAZINE 'HONOR ROLL'

'Persistence' occurs when an investment manager produces returns consistently above or below the average performance for a group of similar funds or for a comparable manager peer group. More formally, performance persistence is a positive relation between performance ranking in an initial period and a subsequent period. Investors are interested in the issue of performance persistence because, if there is a strong performance correlation over time, investors can use past performance as a guide to predicting future investment performance.

Malkiel's study focuses on the issue of performance consistency. Ideally, the investor would like to identify funds with track records evidencing both high returns and consistency. Historical success is meaningful to a prospective investor only if he can reasonably expect that it will continue. Malkiel studies the Honor Roll of mutual funds published yearly by *Forbes Magazine:*

> *To earn a place on the honor roll, a fund not only had to have an extraordinary long-run performance record … but also had to meet certain consistency goals. Performance is measured in both up and down markets, and funds must be at least top-half performers in down markets to qualify for honor status. Thus, the Forbes method guards against the selection of only high Beta funds following a sharp rise in the overall market. It is interesting to ask if investors could have achieved superior returns buying these 'consistent performers'.*[32]

FIGURE 6-5 illustrates Malkiel's findings.

ESTIMATES OF MUTUAL FUND SURVIVORSHIP BIAS AS MEASURED BY INVESTMENT RETURNS (1971-1991)

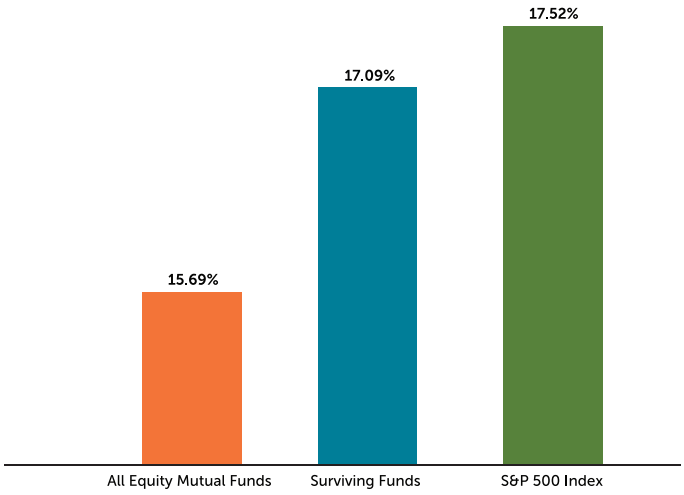

FIGURE 6-4

Malkiel concludes:

> *Most investors would be considerably better off by purchasing a low expense index fund, than by trying to select an active fund manager who appears to possess a 'hot hand.' Since active management generally fails to provide excess returns and tends to generate greater tax burdens for investors, the advantage of passive management holds….*[33]

TRACK RECORD, EXPERIENCE, AND INVESTMENT RESULTS

Over the roughly 80 years of data for mutual funds, which manager produced the best results? If you could identify the top 50 fund managers with track records of 10 years or more, would you invest money with any of them? Do managers with more experience

[32] Ibid., p.566.

[33] Ibid., p. 571.

FORBES' HONOR ROLL VS. S&P 500

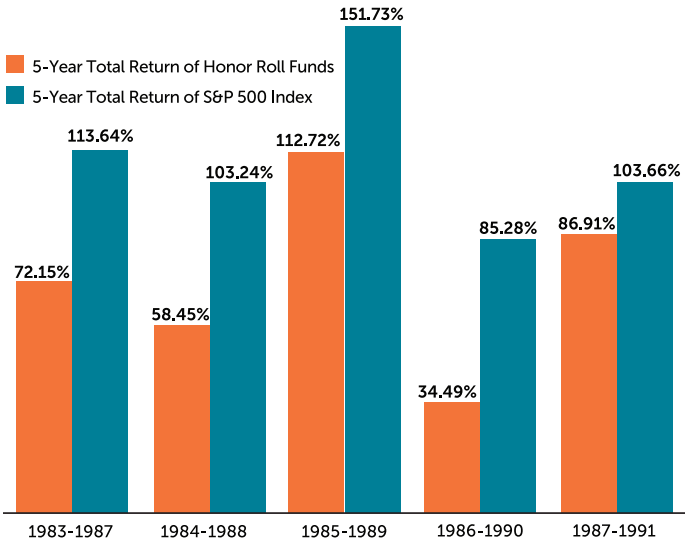

FIGURE 6-5

produce better returns than their less seasoned colleagues? If you find an excellent manager with an attractive long-term track record, how likely is the manager to continue with the fund after you decide to invest your money?

These are some of the questions addressed in a study published in 2012.[34] After identifying a population of 289 managers with sole control of an actively managed mutual fund's investment strategy for a continuous period lasting 10 years or more, they ranked the top performers according to several evaluation metrics. The best score, over all test metrics, was achieved by Peter Lynch during his tenure with the Fidelity Magellan Fund. Lynch's annual adjusted compound return [actual return – the return on the market][35] was an amazing 12.75%, far exceeding index returns.

Upon further examination of the track records generated by this select group of star managers, the authors uncover some interesting evidence:

- Virtually all of the long-term managers achieved spectacular results in the initial three years of their fund management tenure. Only the best 10 managers, however, were able to continue this outperformance. In the aggregate, the top 50 managers are likely to experience a decline in their performance beyond the third year.
- The tenure of a top 50 manager is often not appreciably greater than 10 years. The manager with the longest tenure is Phil Carret who managed the Pioneer A Fund for nearly 52 years – April 1928 through January 1980. However, among the group of star managers with 10-year plus longevity, the median tenure is only 12.8 years. If an investor requires at least a 10-year track record as a pre-condition to making an investment decision, there is a high likelihood that an investment will be made in a fund where the manager has one foot out of the door.
- Taken as a group, the impact of management tenure on investment performance is negative. This seems counterintuitive because one is predisposed to believe that experience brings additional investment wisdom. However, there is statistically significant evidence indicating that the longer a star manager is in charge of a fund, the poorer is the annual performance. The data suggest that most of the star managers developed a reputation for investment skill based on their first three years of fund management. However, the majority of the group exhibited declining performance in their later years.

The authors conclude: "While the evidence

[34] Porter, Gary E. and Trifts, Jack W., "The Best Mutual Fund Managers: Testing the Impact of Experience Using a Survivorship-bias Free Dataset," Journal of Applied Finance (no. 1, 2012), pp. 1-13.

[35] In this case, the "market" refers to indexes synced to the nine investment styles identified by Morningstar.

supports the notion that there may be a very small group of managers who can outperform the market over a period of 10 to 15 years (mean 11.51), we see no compelling evidence of improvement with experience, as 60% of the Best 25 generated poorer returns following their initial three years. The evidence is more indicative of a random process."

...there is statistically significant evidence indicating that the longer a star manager is in charge of a fund, the poorer is the annual performance. The data suggest that most of the star managers developed a reputation for investment skill based on their first three years of fund management. However, the majority of the group exhibited declining performance in their later years.

Academic studies have evaluated active management performance over approximately fifty years, and most have concluded that it is extraordinarily difficult for active management to add value consistently.[36] A comprehensive report by the Funds Management Research Centre reviews over 100 research papers published globally on the issue of the persistence of performance in managed funds.[37] The report concludes:

1. "Good past performance seems to be, at best, a weak and unreliable predictor of future good performance over the medium- to-long-term. About half the studies found no correlation at all between good past and good future performance. Where persistence was found, this was more frequently in the shorter-term, (one to two years) than in the longer term."
2. "More studies seem to find that bad past performance increased the probability of future bad performance."
3. "Where persistence was found, the 'out-performance' margin tended to be small. Where studies found persistence, some specifically reported that frequent swapping to best performing funds would not be an effective strategy, due to the cost of swapping."

Plausible explanations for these conclusions, in the authors' opinion, include:

- Methods that work well in one set of market conditions will not work well in new future economies;
- Fund managers, seeking to emulate the performance of their successful competitors, will copy investment methods and/or poach

[36] One performance study concludes that, on average, active mutual fund managers are, in fact able to select stock portfolios that consistently outperform relevant comparative benchmark portfolios. However, once returns are adjusted for cash holdings, expenses and transactions costs, their net returns underperform the market by one percent. Wermers, Russ, "Mutual Fund Performance: An Empirical Decomposition into Stock-Picking Talent, Style, Transactions Costs, and Expenses," The Journal of Finance (August 2000), pp. 1655-1695. Fischer, Bernd R. and Wermers, Russ, Performance Evaluation and Attribution of Security Portfolios, Academic Press, Oxford UK (2013) present evidence that actively managed funds perform better during recessions. They outline a method to select superior active managers by "... look[ing] for managers who have outperformed during historical economic conditions that are similar to current conditions ..."

[37] Allen, David; Brailsford, Tim; Bird, Ron & Faff, Robert, "A Review of the Research on the Past Performance of Managed Funds," Funds Management Research Centre (June, 2003). Cici, Gjergji and Gibson, Scott, "The Performance of Corporate Bond Mutual Funds: Evidence Based on Security-Level Holdings," Journal of Financial and Quantitative Analysis (February, 2012) pp, 159-178, fail to find evidence that bond mutual fund managers are, on average, able to select bonds that outperform benchmarks holding bonds with similar characteristics. They conclude that it is unlikely that a bond manager can overcome the costs associated with active management.

investment staffs;
- Large inflows of money to successful funds makes it difficult to find profitable new investments and to maintain relative performance;
- Future investment returns are difficult to forecast accurately and a significant portion of a fund's past performance may be attributable to random luck.

Interested readers may find a review of many articles on the performance evaluation of actively managed funds, investment advice newsletters, television pundits, etc. in previous issues of ***Investment Quarterly*** and ***Fiduciary Forum*** available on the Schultz Collins website.[38] The website also includes an in depth paper on investment manager selection and retention policy ["Without More: Trust Investment Manager Selection and Retention Policy"]. This paper provides an update on academic research with special emphasis on studies suggesting that active managers can provide the opportunity to earn excess profits.[39]

Statistical Analysis: A Tool to Evaluate Active Manager Performance

Although most unbiased studies indicate that capital markets are efficient, and that it is difficult to beat the market without assuming a correspondingly larger amount of investment risk, statistical analyses demonstrate that a small percentage of active managers consistently add value, after expenses. However, from the universe of thousands of active managers, random chance alone will produce some who fall into this elite category. Therefore, decisions to incorporate active management in an investment portfolio require statistical verification that the track record of the fund under consideration is both economically and statistically significant – i.e., is attributable to manager skill rather than luck. Further, actively managed funds should be regularly reviewed to determine their continued suitability for the portfolio.

Actively managed funds face a difficult burden of proof. In order to achieve returns in excess of a comparable benchmark, they must:
- Be able to forecast consistently and correctly those securities that offer better than average returns;
- Pay for their research costs from the returns that are actually generated;
- Implement their buy and sell decisions in a cost effective manner; and
- Avoid concentrating their 'bets' to the extent that investor risk is magnified.

Fortunately, there are several straightforward statistical tests that measure a manager's forecasting ability. These tests represent a set of diagnostics to determine whether proprietary investment strategies are likely to add or subtract value. Employing investment strategies leading to extreme levels of asset concentration, without performing appropriate diagnostics within the money management organization, however, may be evidence of imprudent asset management. In most respects, acting in the capacity of investment advisor or money manager without prudent diagnostics and internal controls is no different than selling medications without sufficient

[38] For example, Fiduciary Forum Vol. 5, #2 (September, 2001) offers an in-depth discussion of several articles: Chevalier, Judith & Ellison, Glenn, "Are Some Mutual Fund Managers Better Than Others? Cross-Sectional Patterns in Behavior and Performance," The Journal of Finance (June, 1999); Jain, P.C. & Wu, J.S., "Truth in Mutual Fund Advertising: Evidence on Future Performance and Fund Flows," The Journal of Finance (April, 2000) and Zheng, L., "Is Money Smart? A Study of Mutual Fund Investors' Fund Selection Ability," The Journal of Finance (June, 1999). This is available on the Schultz Collins website.

[39] Collins, Patrick J., "Without More: Trust Investment Manager Selection and Retention Policy" The Banking Law Journal (May, 2008), pp. 391-456. The paper indicates that success requires the existence of skilled managers ***and*** investors skilled in finding such managers. It concludes that active management is best employed in tax-favored accounts due to the tax liabilities generated by high turnover. It is difficult to find a manager adding positive alpha at a statistically significant level; it is even harder to find a manager able to generate an alpha sufficient to overcome the tax liabilities associated with active trading strategies. This is available on the Schultz Collins website.

research and testing and without sufficient quality control in the manufacturing and distribution of the pharmaceutical product.[40]

An especially important set of statistical diagnostics is the measurement of forecast errors. If a portfolio manager has perfect forecasting ability (a prophet), diversification would be a wasteful use of client money. He or she would simply own the single security that over the forthcoming planning horizon generates the greatest return. If a portfolio manager has forecasting ability that is less than perfect, the optimal number of securities that should be held within the portfolio exists on a spectrum that extends from only a few securities to a large number of stocks. As the forecasting ability approaches 50/50, the portfolio's composition should approach the fully diversified index or customized asset benchmark that aligns with the liabilities to be discharged by the portfolio. Managers who market time by overweighting or underweighting sectors must have exceptionally high levels of forecasting skill because their portfolios tend only to own a few stocks concentrated in a few industries.

Additionally, it is worth spending a few moments to consider the marketing of "disciplined" investment philosophy by many money management firms. Goldman Sachs' Abby Joseph Cohen notes: "... discipline sometimes does not give the right answer. It just gives a formulaic answer and can intensify the consequences of an incorrect answer."[41] There is a critical difference between being a disciplined investor (i.e., staying the course, not making common mistakes, etc.) and being a professional investment firm capable of adding value to a benchmark. Although the two propositions sound similar, the first claim merely suggests that the organization will not blunder as badly as amateur investors; the second that the organization possesses unique advantages that enable it to outperform its professional competitors.[42]

The essential question is: what makes the money manager believe that its 'disciplined' approach can create excess profits (profits beyond those reasonable for the risk to which it exposes client wealth)? The question is critical because without a verifiable answer, the investor should have no expectation that trades will be profitable. Organizations that do not possess true competitive advantages that allow them to generate excess profits (i.e., add value for their clients) tend to emphasize qualities like "discipline," "personal service," "enthusiasm for meeting organizational goals," and so forth in their sales and client communications materials. It is not enough, in a highly competitive market, merely to advance reasons why an investment strategy

[40] Martin Leibowitz, a managing director at Morgan Stanley, pointing out the folly of relying on past track record as a guide to future results, stresses the need for internal diagnostics as a necessary condition for prudent investment management. Leibowitz suggests rephrasing the prospectus warning on past performance: "A more ominous rephrasing would be, 'Past performance is not even a good guide to the ***quality of the decisions*** that went into that past performance.' Yet, the ultimate issue is the soundness of the decision process itself: Was all knowable information incorporated? Was the reasoning thorough and sound? Were alternative scenarios considered and contrary views sought? Was a well-planned implementation and monitoring program established – and then followed? Was there a routine postmortem analysis of lessons learned?" Leibowitz, Martin L., "Alpha Hunters and Beta Grazers," Financial Analysts Journal (September/October, 2005), p. 34.

[41] Cohen, Abby Joseph, "Aristotle on Investment Decision Making," Financial Analysts Journal (July/August, 2005), p. 29.

[42] Larry Harris, chief economist for the U.S. Securities and Exchange Commission, explains the problem as follows: "Traders who estimate values from the same information, using the same methods, tend to estimate the same values. Their estimates are highly correlated. They must compete with each other to profit from their insights. Traders whose estimates are not closely correlated with the estimates of other traders have orthogonal estimates (Orthogonal comes from a Greek word that means 'at right angles.') Traders obtain orthogonal estimates of value when they base their estimates on information that other traders do not use or when they analyze data using different methods than other traders use. The most profitable traders have very accurate estimates of value that are uncorrelated with the value estimates made by other traders." Harris, Larry, Trading and Exchanges: Market Microstructure for Practitioners, (Oxford Univ. Press, 2003), p. 237. Thus, a professional money manager can expect to beat the market only if he or she possesses high forecasting accuracy ***and*** the manager's forecasts deviate from the consensus forecasts of other market participants. It is hard to beat the market; and an organization should not claim that it is likely to do so prior to confirming its abilities and prior to charging fees to the public.

One danger of focused portfolios lies in the fact that active management offers only a "conditional expectation" of success. Return is conditioned on the portfolio manager's forecasting abilities and trading skills. Indexed or asset-class investing, however, offers "unconditional" return expectations because the investor has a positive and unconditional expectation that he or she will earn the risk-premium of the capital market.[44]

should work. One must also be clear on why and how other 'sharp-pencil' institutional trading organizations will lose when faced with your organization's resources and skills.[43] Professional money managers who are merely better than average (i.e., better than the average individual investor), will earn less than average returns in the market.

One danger of focused portfolios lies in the fact that active management offers only a "conditional expectation" of success. Return is conditioned on the portfolio manager's forecasting abilities and trading skills. Indexed or asset-class investing, however, offers "unconditional" return expectations because the investor has a positive and unconditional expectation that he or she will earn the risk-premium of the capital market.[44] If under-diversified portfolios tend to embrace active manager risk, diversified portfolios tend to own broad-scope indexes that offer unconditional return expectations. However, the trick to asset allocation is not merely to own bunches of index funds. Rather, a prudent well-constructed, broadly diversified, portfolio weights the investment positions so the aggregate portfolio aligns with the investor's risk/return requirements.[45]

It is also important to understand when active investment management may represent a prudent course of action for investors. In the context of this discussion, two points are of interest because they reflect the ongoing debate over the wisdom of selecting active investment managers:

1. The focused portfolio school of thought argues that implementing a benchmarked portfolio (benchmarked to liabilities or to an asset-side allocation only) is the risky gamble. Indexes, in this view, are capitalization-weighted vehicles that force investors to buy large portions of highly priced stocks and small portions of stocks that may represent potential bargains. Risk is avoided by deviating from the benchmarks (i.e., making active manager decisions) so that investors stand a better chance of making money; and, on the other side of the argument,
2. Statistical tests demonstrating that the active manager adds positive risk-adjusted value for the benefit of the investor may not be sufficient to justify placing wealth in the hands of the manager. This is because the investor could have achieved an unconditional return without active manager risk and; therefore, to justify assuming the extra risks and costs, the investor requires some amount of

[43] Harris explains the concept of comparative advantage as follows: "On average, better plays win games. Good players and even great players do not generally win when they play against even better players. A player has an absolute advantage when he or she can do something well … A 2:20 marathoner will win the vast majority of marathons that are run every year. Such a time, however, would have been good for only 36th place in the men's marathon at the 2000 Olympics… To win a game, you must not just play it well. You must play it better than your opponents." p. 476.

[44] Less a small fee for the cost of the indexed investment. The investor does not always attain the expected risk premium but lacking a positive expectation for reward, only risk-free investments would remain in the marketplace.

[45] Siegel, Laurence B., Benchmarks and Investment Management (The Research Foundation of AIMR, 2003).

positive alpha merely for taking "benchmark" risk. A second level of testing is required to determine, given the 'investor' risk aversion, whether positive value added by the manager justifies the extra risks.

A case can be made for active management provided that the investor selects the managers carefully.[46]

Can Institutional Investors Do Better?

Retail mutual funds have been extensively analyzed with respect to (1) investor strategies – many retail investors destroy wealth by chasing the returns of the previous period's winners, and (2) fund performance – there is little evidence to suggest that most funds can consistently outperform a comparative benchmark. But there are fewer academic studies of institutional investors. By institutional investors we mean pensions, foundations, endowments, and large private trusts.[47] What factors are significant in the decision making process of trustees responsible for the stewardship of endowments, foundations, pensions, and other large institutional pools of money? Can institutional trustees successfully identify investment managers likely to generate returns in excess of their comparative benchmarks?

Unlike retail investors, institutional investors often possess extensive resources that they can devote to financial analysis. If an institution lacks internal resources, it may access consultants who can supply a sophisticated investment perspective. Studies of institutional decision making, although utilizing a variety of methodological approaches and statistical testing procedures, arrive at several common underlying conclusions:

- In the aggregate, institutional money management firms do not offer products that generate positive alpha when reasonable adjustments are made for costs, risks, and market momentum factors.
- There is little evidence to suggest that a subset of management firms produce either consistently positive or negative alpha at a rate that is statistically different from chance. Given a distribution of returns over time, some lucky investment management firms will have top quartile performance results while other unlucky firms will exhibit bottom quartile results. However, close scrutiny of the statistical characteristics of the top and bottom tails of the distribution fails to find evidence of persistency with respect to either the presence or absence of investment skill
- Most of the academic research focuses on efforts to understand how and why institutional investors select the managers and investment products within their portfolios. The research usually sorts trustee decision factors into two broad categories: (1) quantitative analysis, and (2) qualitative analysis. In general, the research finds that institutional investors have an asset manager evaluation process that is generally more sophisticated than that of the average retail investor.
- Qualitative factors often dominate decision

[46] In some cases, it would be demonstrably imprudent not to select active management strategies. One example is the decision to utilize cash matching or immunization strategies when managing towards a fixed income liability cash flow stream. It would be highly unlikely that the characteristics of indexed investment products would match the characteristics of the funding liabilities.

[47] Among the relevant studies assessing the ability of institutional investors to select investment managers delivering above-average performance are: Goyal, Amit and Wahal, Sunil, "The Selection and Termination of Investment Management Firms by Plan Sponsors," The Journal of Finance (August 2008); Heisler, Jeffrey, Knittel, Cristopher, Neumann, John and Steward, Scott, "Why Do Institutional Plan Sponsors Fire Their Investment Managers?" Journal of Business and Economic Studies (Vol. XIII, 2007); LeBarge, Karen Peterson, "What Matters Most? An Analysis of Investment Committee Hire/Fire Decisions," Vanguard Research (September 2010); Busse, Jeffrey, Goyal, Amit and Wahal, Sunil, "Performance and Persistence in Institutional Investment Management," The Journal of Finance (April 2010); Jendinson, Tim, Jones, Howard and Martinez, Jose, "Picking winners? Investment consultants' recommendations of fund managers," Working Paper (University of Oxford, 2013) and, Steward, Scott, Neumann, John, Knittel, Christopher and Heisler, Jeffrey, "Absence of Value: An Analysis of Investment Allocation Decisions by Institutional Plan Sponsors," Financial Analysts Journal (November/December 2009).

RETURN (5-YEAR ANNUALIZED) ADDED OR SUBTRACTED BY DECISIONS REGARDING ALLOCATION OF FUNDS

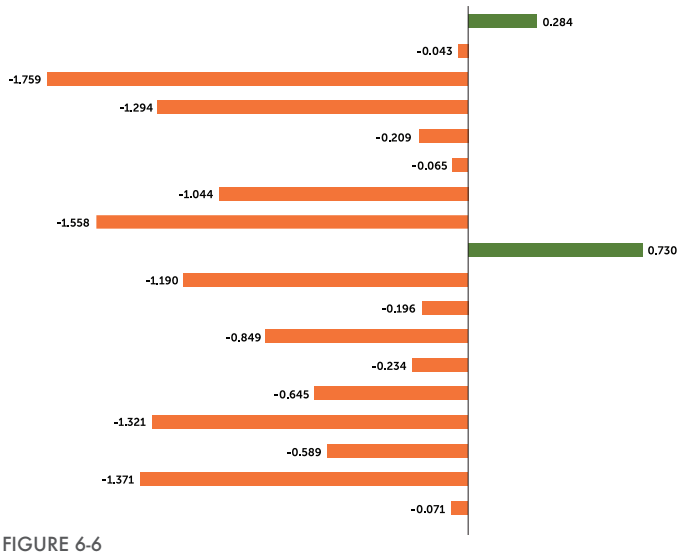

FIGURE 6-6

making. Evidence suggests that institutional investors prefer firms with fewer assets under management, sufficiently long operational history, modest turnover in personnel, reasonably long manager tenure, and primary reliance on in-house research as opposed to Wall Street reports. There is speculation regarding the extent to which these factors are proxies for "comfort." If the speculation is correct, subjective factors may play a significant role in trustee decision making.[48]

- Studies attempting to match decisions to hire/fire investment managers based on performance results fail to detect any significant statistical or economic differences between the returns achieved by newly hired managers and the returns that would have been achieved by sticking with the fired managers.[49] Investment selection and retention policy were, on average, unsuccessful in enhancing portfolio permanence. When the costs of transitioning from the old to the new manager are factored into the decision, there is evidence to suggest that hire/fire decisions subtract substantial value from institutional portfolios.

Examination of institutional fund flows generally indicates that money managers receiving contributions underperform those experiencing withdrawals. **FIGURE 6-6** is a graphical summary of one study's findings. The graph subtracts the five year performance between investment funds that captured the greatest amount of net new investment dollars, or net investment fund flows (top quintile ranked on fund flow) and funds that lost the greatest amount of investment dollars (bottom quintile ranked on fund flow). Stated differently, the study subtracts the five year post-dollar flow decision results of funds that institutional investors did not prefer from those that they did prefer.[50] The hypothesis being tested is that institutional investors possess the ability to identify successful funds – or, conversely, to avoid poorly performing funds. To prove the hypothesis there must be credible evidence indicating that decisions add value. In general, however, the evidence indicates otherwise.

The red bars depict a negative 5-year performance differential while the green bars depict a positive performance differential. The bar at the very bottom of Figure 6-6 depicts the most recent five year (2002-2006) differential between the top 20% of investment products ranked by net captured investment flows

[48] For an entertaining, if not acerbic, commentary on institutional investor decision making see Jack Treynor's two-page 1990 essay "The 10 Most important Questions to Ask in Selecting a Money Manager." For example, if the money manager presents his ideas smoothly and without hesitation, in a polished and stylish presentation format, this probably indicates that the presentation was made dozens of times before, that the "unique" ideas are stale and already incorporated into security prices, and that acting on the ideas will probably be of no help whatsoever to portfolio performance.

[49] In fact, the subset of fired managers achieved returns slightly greater than the subset of newly hired managers over a one through three year period. The magnitude of the returns, however, is not statistically significant.

[50] Results are similar for 1 and 3-year post-flow periods.

and the bottom 20% of investment products ranked by net captured investment flows. The top bar of the chart represents the beginning of the 5-year evaluation period (1985-1989). There is strong evidence to suggest that investment products receiving funds perform worse than those experiencing fund withdrawals. The process for manager selection and retention appears to be subtracting value from institutional portfolios.

PASSIVE MANAGEMENT

Passive funds usually attempt to mirror the returns and risks of an index or an asset class. There are several broad categories of passively managed investments.

Index Funds and Exchange Traded Funds

An index is an artificial indicator of price levels in a market segment. To build an index, securities are grouped together based on certain quantifiable characteristics and weighting criteria. The weighting given to a security within an index is often determined by, for example, a firm's relative market capitalization (the Wilshire 5000 Index tracks the stock performance of the 5000 largest companies; the S&P 500 is an index of 500 large firms from a cross-section of representative U.S. industries); or, by composition (the U.S. Treasury Bond Index is composed exclusively of Government Securities; the Corporate Bond Index is composed exclusively of corporate debt issues).

Index funds seek to replicate the behavior of a stock or bond index. They may buy every security in the index, or a representative sample of securities whose behavior mimics the index (sampling or sensitivity indexes). The fund manager makes no forecasting decisions. Management attempts to replicate the market rather than to beat it.

FULL REPLICATION INDEX FUNDS

These index funds hold most or all of the securities contained in the asset class benchmark, in the same weightings that exist within the benchmark. Purchase and sale of individual securities are based on changes in their relative market capitalization weights.

SAMPLE INDEX FUNDS

These index funds hold representative samples of the securities contained in the benchmark. Sample index funds built through a 'random sample' process often exhibit large tracking error ***vis a vis*** the benchmark index. Sample index funds built through a 'stratified cell' approach minimize tracking error. In a stratified cell approach, the risk/return characteristics of underlying securities are decomposed and quantified. Each cell represents one such characteristic, and securities are selected on the basis of how closely their composition reflects the required characteristic.

OTHER INDEX INVESTMENT APPROACHES

Several other approaches are used by index funds. In general, these approaches seek to provide performance superior to the index, while retaining the objectivity and risk characteristics of the index approach. These include 'optimization indexes', such as stratified cell index funds; 'enhanced index funds,' which generally use derivatives in an attempt to benefit from market mispricing; and index funds which apply different market weightings to component securities – 'equal weighted indexes,' 'fundamental indexes,' etc.

Passive management usually employs two types of pooled investment vehicles: Index Mutual Funds and Exchange Traded Funds.

Index Mutual Funds: These investment vehicles redeem and sell their shares to investors at the end of each trading day at the fund's Net Asset Value. An investor wishing to liquidate a mutual fund position sells the shares back to the fund. This means that funds must maintain a mix of cash reserves and credit lines in order to cover redemption obligations. Failure to manage cash positions effectively tends to increase tracking error.

Exchange Traded Funds [ETFs]: ETFs are open end funds that trade like individual stocks throughout the day. As with any individual stock, investors wishing to sell must find a counterparty willing to take the other side of the transactions. In general, this means that ETFs need not hold cash positions. Additionally, ETFs need not provide accounting data, custodial, and administrative services required by mutual fund shareholders. All else equal, this means that ETFs can track the index without the drag of cash or high expenses. Conversely, some ETFs may not reinvest dividends automatically, and this can increase tracking error.[51]

There are important structural differences between a Mutual Fund and an ETF.[52] ETFs have certain trading risks about which investors should be aware. Unlike Mutual Funds that are bought and sold and the end of the trading day at prices reflecting their Net Asset Value [NAV], ETF share prices fluctuate continuously throughout trading hours based on factors other than their NAV. During periods of market volatility, shares may trade at a premium or a discount to NAV. Although large premiums or discounts are unlikely to persist over the long term, under certain market conditions a fund's trading price may differ substantially from its NAV.

Structured Asset Class Funds

A Structured Asset Class fund is a group of securities that exhibit comparable risk/return characteristics. These funds usually decompose an index to capture a specific dimension of risk or return (e.g., the "value style" subset of S&P 500 stocks with low market value to asset value ratios); or, may group securities into a unique index reflecting certain historical risk/return characteristics (e.g., bond funds based on yield curve positioning).

Structured Asset Class funds capture returns by purchasing all securities with comparable risk/return characteristics along an identifiable investment dimension (e.g., market size, yield curve placement, etc.). They may or may not try to track a benchmark index. Unlike an actively managed fund, the fund manager makes no forecasting decisions. Management seeks neither to beat the market nor, strictly speaking, to replicate it. The primary objective is to capture the long-term returns that flow from exposure to risk factors specific to an asset class. Purchase and sale of individual securities are based on passive filters (see below) designed to preserve the stated risk/return characteristics of the fund.

STRUCTURED ASSET CLASS: EQUITY FUND MANAGEMENT

Whereas a large company stock index fund might own every security used to calculate its benchmark index, a large company structured asset class fund might impose passive inclusion or exclusion filters on the universe of securities. Inclusion filters often mandate purchase of securities with certain accounting ratios within a specified range, or purchase of target securities at prices below the bid/ask spread. Exclusion filters might reject ownership of bankrupt firms, or initial public offerings.

[51] Chapter Eight provides a more extensive discussion of ETFs.

[52] The article entitled "ETFs: A Critical Review of a Popular New Investment Product" in the ***Investment Quarterly 2007 Q3*** provides a more complete analysis. This is available on the Schultz Collins website.

STRUCTURED ASSET CLASS: FIXED INCOME FUND MANAGEMENT

Fixed income index funds might own a bond through all yield curve environments because the weighting of the index demands it. In contrast, a structured asset class fund investing in fixed income may shift maturities based on available yields (as reflected in the slope of the current yield curve) and on a horizon analysis of total expected return over the relevant holding period. Such an approach eschews forecasting (inter-sector spread or credit quality) because all analytical inputs are derived from the ***current*** yield curve environment rather than from ***forecasted*** changes in the yield curve.

EVALUATING PASSIVE FUND PERFORMANCE

Index Funds

When evaluating index funds, the investor is primarily interested in how well the fund matches the risks and rewards of its comparable benchmark index. For example, how closely does the Vanguard 500 Index Trust match the returns of the S&P 500 U.S. Stock Index? Is the investor getting what he or she paid for?

No index fund tracks its benchmark with absolute precision – mutual funds have expenses and benchmarks are merely paper portfolios with no expenses. Additionally, there is no generally accepted standard for determining whether an index fund remains prudent or suitable for an investment portfolio. Rather, the function of an evaluation is to present a range of credible and relevant information so that, taking the weight of the evidence, the investor can formulate intelligent judgments as to past performance as well as to likely future performance. Such a judgment is relative. Are there better investment vehicles? Is it worth incurring expenses to make changes? Are positive or negative trends likely to continue? Does the index fund offer benefits in some areas sufficient to outweigh negatives in other areas?[53]

Generally, two methods may provide important insight into index fund performance:

- Descriptive Statistics: This method of quantitative analysis is interested in the "shape" of the benchmark index's distribution of returns. What is the average return, the degree to which returns cluster around the average, and the degree to which the benchmark index generates extreme returns? Once the investor understands the risk and return characteristics of the benchmark index, he can determine how well the fund captures critical risk/return dimensions.
- Statistical Correspondence: Also known as regression analysis, this method plots the period-by-period fund returns against those of the benchmark index. Ideally, the benchmark and fund returns match perfectly. The extent to which the monthly return data points fail to plot on a straight line indicates the magnitude and prevalence of tracking error. A high degree of tracking error suggests that the index fund is not successfully capturing the risks and returns of the index – i.e., investors are not getting what they paid for.

Structured Asset Class Funds

Structured asset class funds are passively managed funds that incorporate asset management strategies sometimes found in actively managed funds. The most prominent manufacturer of structured asset class funds is Dimensional Fund Advisors (DFA). Dimensional funds avoid security selection decisions based on macro-economic forecasting, industry analysis, or security valuation models. Unlike most actively managed funds, Dimensional does not

[53] Collins, Patrick J., "Monitoring Passively Managed Mutual Funds," The Journal of Investing (Winter, 1999), pp. 49-61.

generate returns through price change forecasting or market timing activities. Additionally, Dimensional funds avoid asset concentration in only a few stocks or bonds in favor of owning a broad selection of securities within the applicable category (U.S. large, U.S. small, etc.). Hence, the term "asset class" funds – they own many of the eligible securities within the asset class.

Dimensional funds are "structured" by virtue of the application of certain passive filters or screens used to eliminate securities with undesirable characteristics. Thus, unlike most funds, investment decisions 'remove from' rather than 'select for.' Filters are passively applied to the universe of eligible securities. For example, the index of U.S. small stocks may be filtered to eliminate companies in bankruptcy, companies without sufficient market liquidity, companies that are primarily closely-held, IPOs, and so forth. Generally, all securities remaining after application of the filters are purchased on a capitalization-weighted basis. Thus, a Dimensional equity fund may look much like a full-replication index fund that has been "swept" to eliminate securities with certain undesirable characteristics. The filter rules for fixed income (bond) portfolios often take the form of decision rules based not on interest rate or yield-curve forecasts, but on identifying the position on the current yield curve that offers the most favorable credit or maturity risk spreads.

Many of Dimensional's equity funds are actively managed with respect to their market execution strategies. Unlike index funds that must present buy and sell orders quickly to avoid drifting away from their underlying index, structured asset class funds are not overly concerned with avoiding tracking risk (risk that the returns will differ from the index). As patient traders they may present transactions more slowly and, therefore, be less subject to unfavorable bid/ask spread expenses or market impact costs. Additionally, executing "off the market" trades through electronic communications networks that allow large institutions to deal directly with each other rather than through an exchange or broker/dealer intermediary, can reduce trading commissions and spreads. Dimensional tries to add value through application of filter rules and trading strategies rather than through price forecasting and market timing.

When evaluating structured asset class funds, the investor is primarily interested in whether the filter rules and trading strategies have added value vis-à-vis the relevant benchmark index. In some cases, adding value also extends to the concept of preserving value after fees and expenses. Many Dimensional funds, for example, operate in environments known for high liquidity costs. In these environments, underperforming a zero-cost paper index by only a few basis points per month is a major achievement.

PRUDENCE AND THE ROLE OF ACTIVE MANAGEMENT WITHIN THE PORTFOLIO

Under the Prudent Investor Rule an investor acting on behalf of others (i.e., a fiduciary) must justify any risks and costs attributable to active investment management:

- Active strategies, however, entail investigation and analysis (of) expenses and tend to increase general transaction costs, including capital gains taxation. Additional risks also may result from the difficult judgments that may be involved and from the possible acceptance of a relatively high degree of diversifiable risk... If the extra costs and risks of an investment program are substantial, these added costs and risks must be justified by realistically evaluated return expectations. Accordingly, a decision to proceed with such a program involves judgments by the trustee

[54] *Restatement of the Law, Third, of Trusts (Prudent Investor Rule)*, p. 30.

that:

- Gains from the course of action in question can reasonably be expected to compensate for its additional costs and risks;
- The course of action to be undertaken is reasonable in terms of its economic rationale and its role within the trust portfolio; and
- There is a credible basis for concluding that the trustee – or manager of a particular activity – possesses or has access to the competence necessary to carry out the program and, when delegation is involved, that its terms and supervision are appropriate.[54]

The investor selecting an active approach to investment management is well advised to examine the proposed investment critically lest he incurs extra costs and risks without a reasonable expectation of a compensating reward.