

## NEW WHITE PAPER ADDRESSES ISSUES OF ADMINISTRATIVE PRUDENCE

As the graphic to the right illustrates, and as regular readers already know, the purpose of *Fiduciary Forum* is to help fiduciaries understand how prudent portfolio management may be defined by insights from the legal, academic, and investment management communities. A truly prudent portfolio should reside where the inputs from each community overlap—the area on the graphic labeled “Investment Policy”.

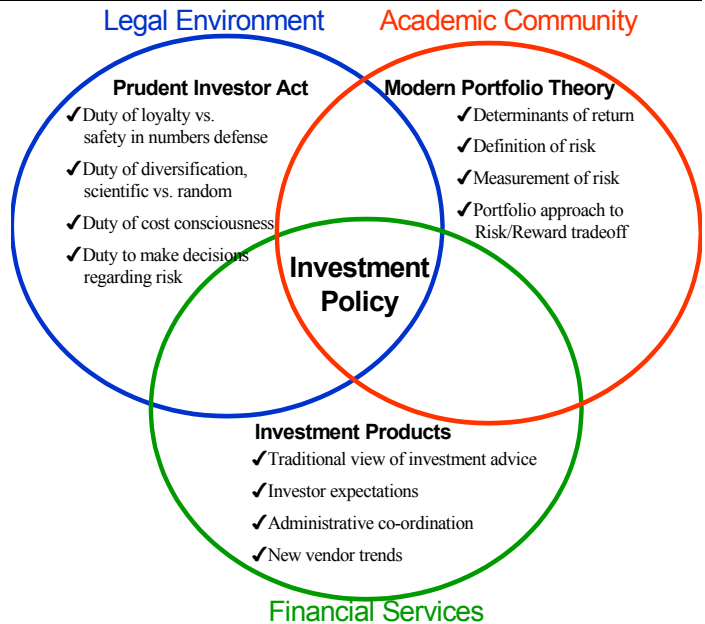
In an extensive new White Paper titled “Administrative Prudence,” SCLC Principal Patrick Collins addresses operational issues germane to determining whether fiduciary asset administration is legally defensible, academically sound and administratively reasonable. He reviews recent fiduciary breach litigation and developing academic theory to develop a set of “best practices” that underlie prudent portfolio management. This issue of *Fiduciary Forum* extracts sections from the White Paper. Extracts include a discussion of Modern Portfolio Theory in the context of fiduciary management, a sidebar on the Consumption Capital Asset Pricing Model (CCAPM), a primer on tests for investment skill (a key element in many fiduciary breach cases), and a question—how many stocks are enough?

The White Paper is available for review on the SCLC website ([www.schultzcollins.com](http://www.schultzcollins.com)). Mr. Collins is currently seeking feedback, comments and suggestions regarding the White Paper. He can be reached at (415) 291-3002 or at [patrick@schultzcollins.com](mailto:patrick@schultzcollins.com).

### IS MODERN PORTFOLIO THEORY PRUDENT?

The great debate over market efficiency / active vs. passive investment that currently rages in university business schools and economics departments threatens to spill over into both plaintiffs’ expert witness reports and defendants’ rebuttals. In both academic and legal publications one finds a range of arguments claiming that use of active investment management is unsound under principles of modern financial economics and, therefore, may be a *per se* breach of fiduciary responsibility, to claims that the “interior decorator” approach to investment management wherein the trustee selects a few good stocks tailored to the needs of the trust is a satisfactory approach to wealth management.<sup>1</sup>

The claims of the first camp flow, in part, from empirical data suggesting the difficulty of beating the market through security selection or market timing efforts, and from mathematical approaches suggesting that, as the number of securities increases within the portfolio, risk is dominated by the correlation structure of the securities (the cross-product or covariance terms) rather than by a security’s risk/return characteristics evaluated in isolation. Suitability is determined from



the portfolio context rather than from the individual investment context. Whereas a well-diversified portfolio mitigates unsystematic risk, it is a trustee’s duty to avoid unique, unnecessary and, ultimately, uncompensated risk that characterizes portfolios holding only a few securities.<sup>2</sup>

The claims from the second camp rest on the belief that forming ‘focused’ portfolios holding only a few securities allows trustees to customize trust assets to accomplish a variety of tax, income distribution, and other objectives either specified by the settlor within the trust instrument or required of the trustee to balance the competing needs of beneficiary classes. The focused (or, depending on one’s viewpoint, truncated) portfolio approach tends to reject modern portfolio theory [MPT] as having any special relevance to modern trust management for a number of reasons including:

- ⇒ The asset valuation models (especially the Capital Asset Pricing Model or CAPM) rest on assumptions that are clearly invalid for private wealth management for taxable trusts seeking to fulfill heterogeneous grantor objectives and beneficiary needs (i.e., in CAPM, utility is measured over a single-period planning horizon, for a non-taxable investor with unlimited capacity to borrow funds at the risk-free rate, operating in an environment where investors share homogeneous expectations on the market’s expected return, variance and correlation structure, and where there are no investment costs);

*If MPT is defined as the formation of portfolios derived from academic asset pricing models built during the period 1952 through 1992, then one is left with a serious quandary ...*

*Rather than representing an upgrading of trust law to reflect current investment practices, it is alleged that Restatement Third incorporates unproven or irrelevant academic theories into standards of fiduciary practice.*

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- ⇒ The performance evaluation metrics flowing from MPT (Jensen's Differential Alpha Measure, Sharpe's Reward to Risk Ratio based on standard deviation; Treynor's Reward to Risk Ratio based on Beta) rest on distributional assumptions that may be invalid, or on regression analyses wherein the independent variables are benchmarks (such as the S&P 500 stock index) that may be wholly inappropriate for trustees charged with unique distributional as well as terminal wealth objectives;
- ⇒ The parameters of early versions of CAPM and other asset valuation models (Beta as the sole measure of systematic risk in the single index CAPM model; asset price sensitivity to macroeconomic variables in the Arbitrage Pricing Theory or APT model; fundamental security attribute factors in the three and five-factor models developed by Fama and French) are ill defined, unstable over time, or difficult to measure at any specific point in time.

The second camp sometimes claims a behaviorist CAPM model based on markets driven by limited or severely flawed investor rationality wherein the role of the trustee is defined as the exercise of judgment and discretion that derive from the wisdom and experience of experienced market professionals using tried and true security valuation methods. In the limit, some suggest that (1) the simplifying assumptions or lack of testability of early asset pricing models (CAPM, APT, & multi-factor models), (2) the uncertainty of their key parameters, and (3) the irrelevance of popular benchmark regression variables to the actual tasks confronted by trustees who must produce periodic distributions of cash with safety and consistency and who must balance such distributional requirements against the need to provide inflation protection and reasonable asset growth across multiple time periods rather than at a single end point, makes the Restatement Third's adoption of an MPT basis for a modern Prudent Investor Rule singularly unfortunate. Rather than representing an upgrading of trust law to reflect current investment practices, it is alleged that Restatement Third incorporates unproven or irrelevant academic theories into standards of fiduciary practice.<sup>3</sup>

The Plaintiffs' Bar generally embraces the first camp's arguments because they provide:

- ⇒ A convenient set of damage measures based on index total returns;
- ⇒ A set of risk metrics against which the trust administration can be measured and evaluated; and,

- ⇒ A framework of asset management which has academic credibility.

In general, the Defendants' Bar embraces the arguments of the second camp because they provide:

- ⇒ A counter-argument to the assertion that there is a homogeneous set of proven academic principles that uniformly applies to all asset management activities;
- ⇒ A justification for portfolios that are not mere replications of paper indices; and,
- ⇒ A basis for traditional trust administrative practices based on market analysis, security valuation and portfolio construction principles tailored not to match an abstract benchmark but rather to match real world liabilities (cash flow expectations and terminal wealth accumulations).

The answer to the question 'Is MPT prudent for private trusts?', in large measure, depends on how one defines MPT.<sup>4</sup> If MPT is defined as the formation of portfolios derived from academic asset pricing models built during the period 1952 through 1992, then one is left with a serious quandary in that "the universe of private investors is heterogeneous, burdened by taxes, and often less well suited to the simplifying assumptions of modern financial theory."<sup>5</sup> Likewise, if one defines MPT as demanding a strict adherence to index construction principles, one may be left with an admittedly sub-optimal portfolio: "Indices are intended to be tools to measure performance, not rules for managing portfolios."<sup>6</sup> However, if one defines MPT, as does Nobel Prize winner Robert Merton, as a process to analyze portfolio choices based on the efficient use of risk,<sup>7</sup> then the trustee finds himself close to the demands of administrative prudence demanded in recent fiduciary litigation decisions.

Although academic research often emphasizes the construction of equilibrium models with explanatory value for characterizing the return generating process, modern principles of trust law only require trustees to utilize the requisite amount of care, skill and caution with respect to:

- 1) The portfolio composition problem: what strategic asset allocations enhance the likelihood that the trust's distributional/accumulation objectives can be met;
- 2) The portfolio selection problem: what securities, when considered in combination, offer an attractive

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tradeoff between risk and return while, simultaneously addressing the (sometimes competing) needs of trust beneficiaries and the preferences and constraints of the trust settlor;

- 3) The portfolio implementation problem: the determination that investing takes place on trading and administrative platforms that do not demand unreasonable or inappropriate fees, expenses, costs, and other portfolio frictions; and,
- 4) The portfolio performance evaluation problem: measuring progress towards a trust's unique economic goals rather than towards return maximum or benchmark matching.

There are many examples of portfolio customization that may be prudent under the standards of fiduciary asset management and academically sound under the principles of MPT. The multi-factor MPT models, developed by academic research extending and modifying William Sharpe's single index CAPM equilibrium model, comfortably co-exist with prudently constructed trust portfolios which deviate from index weightings because of a need to include a 'yield-tilt' factor. MPT's Consumption Capital Asset Pricing Model (see next page) comfortably co-exists with the trustee's decision to tilt the portfolio towards fixed income or tax-favored investments to secure greater after-tax spendable income. As both MPT and Restatement Third acknowledge, no investment or investment strategy is *per se* imprudent; hence, there is no academic or legal requirement that a prudent trust portfolio correspond to the single-index domestic or global capital market levered up or down to reflect investor risk tolerance.<sup>8</sup>

<sup>1</sup>The nature of the debate is nicely summarized by Harry Markowitz: "Before the CAPM [Capital Asset Pricing Model], conventional wisdom was that some investments were suitable for widows and orphans whereas others were suitable only for those prepared to take on 'a businessman's risk.' The CAPM convinced many that this conventional wisdom was wrong: the market portfolio is the proper mix amount of risky securities for everyone. The portfolios of the widow and businessman should differ only in the amount of cash or leverage used." Markowitz, Harry A., "Market Efficiency: A Theoretical Distinction and So What?" Financial Analysts Journal (September/October, 2005), p. 18.

<sup>2</sup> Systematic risk is the portion of an asset's price variability that can be attributed to a common factor (or factors). Nobel Prize winner William Sharpe defined a "single-index-market-model" to isolate the systematic and unsystematic components of an asset's return. This means that priced risk is a function of a single factor, that the single factor governs the variability of all assets within the market, that the market is a proxy for this single factor and, in turn, can be proxied by an index of securities like the S&P 500 index. Market-related risk represents the variance of returns attrib-

utable to factors that impact all securities within the market (e.g. unexpected inflation, GDP growth rate, changes in unemployment, etc.). The variance in returns attributable to non-market factors (i.e. risks that are unique to the specific firm) is termed unsystematic or unique risk. In a fully diversified portfolio, unsystematic risk can be eliminated and, per Sharpe, is not priced in the marketplace. Therefore, poorly diversified portfolios assume unsystematic risk for which the investor is not compensated. Under a CAPM world view, unsystematic risk is uncompensated risk that, if not eliminated, might presumably be a breach of trustee duty to avoid unreasonable costs.

<sup>3</sup> For a general overview of the role of MPT in modern trust administration, see Ellis, J., Hartog, J., Wolf, K. & Gifford, L. A., "Issues in Trust Administration and Experiences of Professional Trustees: Applying Prudent Investor and Principal and Income Act Adjustment Powers," Estate Planning 2005 (CEB California, 2005), especially §9.16 Does MPT Require Trustees To Index? For a general critique of MPT's ability to provide useful guidance for attainment of practical investment goals, see Mitchell, M., "Is MPT the Solution - or the Problem?" Investment Policy magazine (July, 2002). As a counterpoint, Don Chance provides an overview of the contributions of MPT insights to the practical needs of the investment management industry. See, Chance, D., "The Strange Relationship Between Academics and Practitioners in Derivatives and Risk Management," Financial Engineering News (July/August, 2005). Chance observes that investment theory and practice integrate by virtue of the necessity to adhere to the principle of arbitrage: "The absence of arbitrage opportunities is a necessary but not sufficient condition for a market to be efficient. Arbitrage opportunities of the purest form, such as those that allow an option to trade for less than its exercise value at the time of expiration, simply cannot exist" p. 19.

<sup>4</sup> "Modern Portfolio Theory has become a customary tool used by investment professionals and, as such, constitutes an industry standard that prudent fiduciaries cannot ignore." Op. Cit., Ellis et al, p. 344, quoting the editor of the ACTEC Journal.

<sup>5</sup> Bronson, J., Scanlan, M. & Squires, J., "Managing Individual Investor Portfolios," Managing Investment Portfolios: A Dynamic Process, 3<sup>rd</sup> Edition p. 3.

<sup>6</sup> French, K., "Mission: Impossible," CFA Magazine (September/October, 2005), p. 42. See, also, Markowitz, Op. Cit., p. 19: "... the market portfolio need not be an efficient portfolio. This departure from efficiency can be quite substantial. In fact, the market portfolio can have almost *maximum* variance among feasible portfolios with the same expected value rather than *minimum* such variance; that is, the market portfolio can be about as *inefficient* as a feasible portfolio can get." Markowitz argues that a CAPM investor (i.e., a rational investor selecting a portfolio under conditions of market equilibrium) cannot arbitrage away the inefficiency of the market portfolio because, in part, unconstrained short positions imply either a negative or a zero demand for certain securities. Such a result violates CAPM's equilibrium conditions.

<sup>7</sup> Bodie, Z., & Merton, R. C., Finance (Prentice Hall, 1998). P. 232: "Portfolio theory is defined as quantitative analysis for optimal risk management."

<sup>8</sup> Trivially, all models, economic or otherwise, are incorrect in that they are mere approximations of a more complex reality. The model of a jet airplane that has utility for an accountant differs greatly from either the model that attracts a small child or the model that is of interest to an aeronautical engineer. However, each model may be useful for a specific purpose.

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## THE CONSUMPTION CAPITAL ASSET PRICING MODEL

Mark Rubenstein and Douglas Breeden originally introduced the Consumption Capital Asset Pricing Model (CCAPM) in the 1970s. Under this model, investors are not primarily interested in the utility of terminal wealth. Rather, wealth is valued not for its own sake but for the standard of living that it supports. Investment portfolios capable of supporting targeted levels of real (inflation-adjusted) consumption over the applicable planning horizon may be more valued than portfolios providing high levels of ending wealth or safety of principal.

In a CCAPM context it is vital for the trustee to go beyond “the four corners of the trust document” [*Hatleberg v. Norwest Bank Wisconsin*, 678 N.W.2d 302 (WI App, 2004)] to ascertain the needs of the trust beneficiaries. Utility derives only from expenditures above a threshold level of subsistence. The higher the subsistence level, the more total human wealth is decremented by the “negative labor income” required to achieve the threshold standard of living level. Under CCAPM, settlors with high gift or bequest preferences for remaindermen may prefer trustees to act like Markowitz/Sharpe investors seeking to maximize end of period wealth. However, CCAPM settlors also may prefer trustees to maximize the utility of consumption for current beneficiaries. At the limit, a highly risk averse investor under a CCAPM model, may seek to mitigate longevity risk (the risk of living longer than “life expectancy”), investment risk (the risk that returns may be insufficient relative to economic objectives), and consumption risk (the risk of bankruptcy prior to death of the income beneficiary) by “spending” all wealth to secure a real (inflation-indexed) immediate annuity.

Trustees creating portfolios based on Consumption Capital Asset Pricing Models consider, in part, utility of wealth functions, utility of consumption functions, and the beneficiary’s elasticity of intertemporal substitution [EIS]. The latter term means both a willingness to consume under economic regimes that change over time (equal willingness to spend an equal proportion of wealth in recession or prosperity denotes an EIS equal to 1; willingness to spread consumption equally over the planning horizon as opposed to front or back end loading consumption denotes an EIS equal to 1, etc.). See, Campbell, John Y. & Viceria, Lewis, *Strategic Asset Allocation* (Oxford University Press, 2003).

As noted, the basic notion underlying trust portfolio construction under a CCAPM strategy is that, in a multiperiod setting, the investor derives utility primarily from consumption; and, because consumption above the threshold level is critical to maximizing utility, the importance of terminal wealth conditions gives way to the

importance of financing adequate consumption at each intermediate point in time. In fact, the time horizon can go to infinity (planning horizon is no longer a critical determination in investment policy) as long as the model calibrates period-by-period consumption preferences through subjective time discount factors (e.g., some money now may be more important than more money later). Maximum utility is achieved when the marginal utility of spending a dollar equals the marginal benefit of reinvesting the dollar to enhance the probability of (discounted) future consumption. At the limit, as the subjective discounting rate goes to zero, investors behave as single-period Markowitz/Sharpe CAPM investors.

Trust portfolios based on a single index / single period model, for example, might avoid an asset class like long-term bonds because of their relatively low reward-to-risk (Sharpe) ratio. Under a CCAPM portfolio approach, however, the trustee might favor higher coupon long-term bonds where the trust settlor indicates a preference for the current beneficiary’s consumption requirements. For a highly risk-averse CCAPM investor, the risk-free asset may be an inflation-indexed annuity as opposed to a U.S. T-Bill. The key points are: (1) there is no single “prudent” portfolio (strict conformity with an index may not be prudent); and, (2) the trustee must be able to justify the trust portfolio in terms of a well-articulated and fully documented investment strategy.

Parenthetically, it might be a good idea to communicate the strategy to interested parties at the time of portfolio formation—i.e., prior to the onset of litigation. The ability to articulate and document rational investment policy might, for example, have provided defense with a partial counter to plaintiff’s expert-witness testimony in *Meyer v. Berkshire Life Insurance Company*, 250 F. Supp.2d 544 (D. Md.2003, aff’d, 372 F.3d 261 (4th Cir. 2004)). An insurance agent foolishly defended a decision to load a retirement plan with high cost annuity products because he “would rather have a return of your money than a return on your money.” The court concluded that there was a fiduciary breach for failure to maintain a 50% allocation to equities.

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The office of trustee requires skills sufficient for the design, implementation and ongoing management of portfolios. Prudent asset management requires a skill set, not a set of good intentions. However, without data on the fiduciary's internal diagnostic systems, it is difficult to make a definitive judgment regarding the prudence of portfolios that drastically limit the number of securities selected from the available opportunity set. How does the outside observer form an opinion regarding the prudence of a fiduciary's self-evaluation regarding the portfolio selection and implementation processes?

**Evaluating Portfolio Buy/Sell Decisions**

One way to obtain some intuitive understanding of a trustee's forecasting ability is to conduct a test with explanatory power in the face of incomplete information. This "back-of-the-envelope" measure of forecasting skill involves a comparison between two portfolios at two different moments in time.<sup>1</sup> The following example, taken from a fiduciary breach allegation case against a commercial fiduciary, provides insight into this type of performance evaluation. The example compares a 19 stock equity portfolio dated January 1, 1997 with a 12 stock equity portfolio dated January 1, 1998. The equity positions within the trust account as of the beginning of 1998 are:

|                   |                             |
|-------------------|-----------------------------|
| Amoco             | IBM                         |
| Boca Research     | Johnson & Johnson           |
| Boeing            | J P Morgan                  |
| Cisco Systems     | PepsiCo                     |
| Crown Cork & Seal | Security First Network Bank |
| Ford Motor        | United Companies Financial  |

Listed in the tables below are the stocks that left the portfolio during 1997 (the 'sold portfolio') and the stocks that entered the portfolio during 1997 (the 'bought portfolio'). Of course, the snapshots do not reveal interim trade dynamics; but they provide some indication as to the fiduciary's security selection skill. The sold portfolio's securities generated the following returns during the evaluation period :

|                         |        |
|-------------------------|--------|
| AT&T                    | 53.19% |
| Texaco                  | 14.41% |
| Fleet Financial         | 55.15% |
| Atlantic Richfield      | 25.75% |
| Hewlett-Packard         | 25.25% |
| Mobil                   | 21.77% |
| Rubbermaid              | 13.26% |
| Sundstrand              | 19.74% |
| Electronic Data Systems | 3.13%  |
| Sara Lee                | 54.21% |

By contrast, the bought portfolio's securities generated the following returns:

|                             |         |
|-----------------------------|---------|
| Cisco Systems               | 31.43%  |
| Boeing                      | -7.10%  |
| Security First Network Bank | -29.27% |

Absent further inquiry, it appears that the trustee reduced the number of securities in the portfolio during a period when its forecasting ability was questionable. If this proves to be the case, it is a good example of asset management based on a treasure-hunting model where bets are further concentrated in order to chase returns. This wealth-seeking behavior is found in Las Vegas where gamblers 'double-down' in the futile expectation that their strategies will be rewarded. There is a fiduciary duty (upheld in a variety of court decisions where the fiduciary failed to take appropriate action in the face of patently poor performance) to abandon asset management approaches that do not work.<sup>2</sup> It is difficult to imagine a set of circumstances that would allow the fiduciary to defend successfully the prudence of its investment activities when such activities are based solely on the treasure-hunting model and when wealth management is conducted solely on the asset side of the balance sheet.

The bought/sold portfolio comparison not only provides the outside evaluator with some insight into the fiduciary's investment skill, but also forms a basis that allows the money management organization to achieve precise statistical tracking of employee investment skill. At least one major mutual fund, for example, tracks each portfolio manager's buy/sell investment decisions in real time over various evaluation periods to determine the extent to which investment decisions add or subtract value (as well as the trading costs required to implement the decisions). It is not enough, for compensation bonus purposes, for the portfolio manager to demonstrate that his or her portfolio decisions were profitable; rather, the relevant question is whether they added value over a naive 'no-change' model. Did the acquired securities add more value than the sold securities would have added if they remained in the portfolio?

**Attribution Analysis**

A second example of a "holdings-based" test sometimes used by outside observers is known as an attribution analysis.<sup>3</sup> Attribution analysis provides insights into the market timing and security selection abilities of the portfolio manager. It tests the managed portfolio against a comparable benchmark portfolio to determine the value added or subtracted by the manager's tactical allocation and stock-picking

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decisions. An attribution analysis may be done on a macro 'asset class' level by considering only the decisions to change allocations between cash, fixed income and equities, or at a more detailed level by considering allocations within each asset class (changing weightings between investment grade bonds and high-yield bonds, between U.S. stocks and foreign stocks, and so forth). The goals of the analysis are to provide data for evaluation of one or both of the following portfolio management elements:

- 1) The decision to allocate funds between investment markets [market timing].
- 2) The security selection decisions within each market.

The comparable benchmark portfolio must, by definition, consist of passively managed investments such as indexes. Indexed portfolios screen out the 'noise' that enters into averaged performance figures of the aggregate universe of active managers each of whom are making bets on specific securities or strategies. In counterpoint, indexed benchmarks can be considered to be neutral with respect to their security selection decisions. Additionally, an indexed benchmark holding a constant ratio of cash to fixed income to equity can be said to be neutral with respect to its asset allocation across asset classes. Presumably, the manager will make a series of ongoing changes in his or her asset mix in order to capture returns generated from being in the right market at the right time or in order to capture returns from being in the right stocks at the right time.

Given the availability of a comparative benchmark, the affect of the shifts made by the active manager can be measured. On a period-by-period basis, the performance evaluator subtracts the return earned by the benchmark portfolio from the return earned by each of the specific asset classes, industries or sectors within the portfolio. Superior performance relative to the benchmark portfolio is achieved when the portfolio manager overweights investments in asset classes or industries that perform better than the composite return of the benchmark. That is to say, the manager shifts funds to investment markets that perform well and underweights markets that perform poorly.

To determine the contribution of management's security selection decisions to the success of a portfolio, the evaluator determines the period-by-period difference between the actual performances of the portfolio's investment positions with the performance of benchmarked positions at the same allocation weighting.<sup>4</sup> Superior performance within a given market segment is achieved when, for example, the portfolio manager's commitment to U.S. mid cap stocks does better than the comparative

fully-diversified mid cap index. A detailed attribution analysis may reveal managerial skill in certain market segments and an absence of skill in others. Presumably the prudent fiduciary would index those areas in which it fails to add value and continue active management in the remaining areas.<sup>5</sup>

**Using Internal Diagnostics in Litigation**

In a recently settled fiduciary breach action (subject to confidentiality restrictions), detailed discovery revealed that the defendant trust company performed an internal attribution analysis to facilitate compensation and promotional policies for its employees. The trust company allowed trust officers to form portfolios by selecting individual securities from an "approved list" with the constraint that no single security could constitute more than 5% of the portfolio.<sup>6</sup> Although no analysis beyond this naive diversification test was performed on the portfolio level, the defendant trustee argued that the portfolio was prudent because the organization employed skilled analysts, using disciplined investment methods, and proven proprietary valuation models, to identify exceptionally promising securities well suited to a trust portfolio. However, the organization used an attribution analysis for compensation, internal quality control, and stock selection evaluation. The attribution analysis focused on security selection only; and the case settled quickly when plaintiff discovered that the attribution tests recorded significant and persistent negative performance numbers. The prudent fiduciary has an obligation to evaluate what it is doing; and has an obligation to cease doing those things that do not work.

Let's consider the "disciplined" investment philosophy marketed by many commercial fiduciaries. Goldman Sachs' Abby Joseph Cohen, cited earlier, notes: "...discipline sometimes does not give the right answer. It just gives a formulaic answer and can intensify the consequences of an incorrect answer."<sup>7</sup> 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.<sup>8</sup>

**To Be Prudent, "Skill" Must be Relative**

Thus, the essential question is: what makes the fiduciary believe that its

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‘disciplined’ approach can create excess profits (profits beyond those reasonable for the risk to which it exposes the trust’s wealth)? The question is critical because without a verifiable answer, the fiduciary should have no expectation that its trades will be profitable (at least not for its clients). Competing institutional investors offering comparable money management services to prospective clients can easily purchase information regarding the fundamental value of securities through a variety of services such as BARRA, Bloomberg, Bridge Information, Dow Jones, Dun & Bradstreet, Edgar, IBES, Moody’s, Standard & Poors’, Zacks Investment Research, and other firms. Furthermore, Regulation FD (adopted by the SEC in 2000) requires that publicly traded companies disclose material information immediately to all members of the public before they disclose to any unrelated person (such as a bank trust department or brokerage house analyst). Organizations that do not, in fact, 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 efficient and competitive market, merely to advance reasons why an investment strategy 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.<sup>9</sup> 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.

skill. Fiduciaries continuing to employ investment strategies that generate significant and persistently negative ratios may be vulnerable to fiduciary breach allegations for imprudent investment management and bad faith. Style based analysis is useful when the evaluator of portfolio performance is unable “to look under the hood”—i.e., cannot access detailed information regarding day-to-day trading decisions and dynamics. Mutual fund evaluators, for example, often use style-based analysis because the funds reveal their investment holdings only semi-annually.

<sup>4</sup> Eugene Fama developed a more precise form of attribution analysis, known as ‘net selectivity’ analysis.

<sup>5</sup> There is an additional cross-product term representing the interactions between a manager’s asset allocation and security selection decisions. A variation on attribution tests for verification of skill in security selection is the “Portfolio Opportunity Distributions” approach developed by Ronald Surz. Surz constructs the universe of securities that match the decision rules followed by the active investment manager. Random portfolios comparable to the manager’s actual portfolio are then formed from the securities within this universe. If the actual portfolio attains results uniformly superior to the randomly formed portfolios, this is taken as a sign that the manager is adding value. Surz, R. J., “Portfolio Opportunity Distributions: A Solution to the Problems with Benchmarks and Peer Groups,” *Journal of Performance Measurement* (Winter, 1996).

<sup>6</sup> It is interesting to note that this policy parallels the minimum diversification requirement for mutual funds under the 1940 Investment Advisor Act. However, there are many mutual fund portfolios containing twenty to thirty stocks that are, in fact, highly concentrated sector funds.

<sup>7</sup> *Op. Cit.*, p. 29.

<sup>8</sup> 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.

<sup>9</sup> Harris explains comparative advantage as follows: “On average, better players 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 36<sup>th</sup> 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.

<sup>1</sup> For a more complete description of this method see Elton, E.J., & Gruber, M. J. *Modern Portfolio Theory and Investment Analysis* Fifth Edition (John Wiley & Sons, 1995), pp. 684-685.

<sup>2</sup> Much academic research further suggests that assuming extreme asset concentration is a sub-optimal portfolio strategy even in the face of demonstrable forecasting skill. The thinking behind this argument rests, in part, on the observation that exogenous shocks (surprises) are an important determinant of future price change. By definition these surprises cannot be predicted; and, with only a few stocks held in the portfolio, the portfolio could realize catastrophic losses from which it may never recover. Examples of events that could not be forecasted include the placement of arsenic in bottles of Tylenol (J&J), the destruction of the city of Bhopal (Union Carbide), the accounting fraud on corporate financials (Enron), the meltdown of the Three Mile Island reactor (General Public Utilities), and so forth. Unpredictable surprises may be normal when investing under conditions of uncertainty.

<sup>3</sup> Outside evaluators can also evaluate the prudence of the fiduciary’s investment management activities by using “style based” tests. The basis for these tests is the Sharpe Selection Ratio (which differs from the classic MPT Sharpe Reward to Risk Ratio) calculated through a constrained regression analysis. A positive Sharpe Selection Ratio is a preliminary indication of investment

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## HOW MANY STOCKS ARE ENOUGH?

The answer to this question lies, in part, on the level of confidence provided by the fiduciary's internal self-assessment process. The answer also lies in the nature of the engagement. If the terms of the trust encourage the fiduciary to speculate, or to 'beat the market' (whether one chooses to define the market narrowly with, for example, an S&P 500 stock index proxy, or broadly with an MSCI world market index proxy), with little or no concern for risk, then such an engagement might support a strategy of owning concentrated investment positions. Portfolios constructed on the prudence model do not merely bundle together stocks of blue chip companies (firms exhibiting strong current and historical financial statements and favorable accounting ratios). Rather, optimal portfolios combine securities (the number of which is, in part, a function of the confidence levels revealed by the fiduciary's internal diagnostics) with differing economic characteristics as measured by their volatility and tendency to move either in tandem or separately from each other. Investors who seek only to maximize returns (i.e., those who do not care about risk) will put all of their money in the single most promising security or sector. Investors who are concerned about risk, however, will employ an asset management strategy based on prudent diversification.

In one MPT sense of the term, diversification does not mean owning many investments. Rather, it refers to eliminating non-market risk. A statistic that captures the degree of closeness between the actual investment portfolio and the market in general is correlation (or, the square of correlation known as the  $R^2$  or the coefficient of determination statistic). When stocks are selected *randomly* (i.e., not screened according to a manager's pre-determined valuation criteria), there is an expectation (but not a guarantee) that the risks and returns of the randomly assembled portfolios will correlate highly with asset class proxies. Thus, a random selection of U.S. large company stocks will, on average, tend to exhibit a high  $R^2$  value when regressed on a proxy such as the S&P 500 stock index. In most studies, randomly selected portfolios formed from twenty to sixty stocks achieve 90 to 95% diversification.

Lest an unsophisticated investor make a horrible mistake, however, there are three concepts that require additional clarity:

**Randomly Selected:** This selection process refers to random sampling from the population under the condition that no security has any greater or lesser likelihood of selection than any other security. This condition obviously fails when investment managers employ pre-defined security valuation criteria. The stocks selected by the managers are less likely to exhibit statis-

tical independence; and, therefore, are less likely to provide diversification benefits under changing economic conditions. An important extension of this concept is the notion of 'equal weighting.' If portfolios that are randomly selected overweight or underweight certain securities or sectors, their risk/return characteristics may become extremely idiosyncratic relative to a fully diversified capitalization-weighted comparative benchmark.

**On Average:** If hundreds of portfolios are randomly assembled, the central tendency (median result) is to provide risk/return benefits that are closely correlated to those of the asset class proxy. For example, a diversification study focusing on the period January 1986 through June 1999 compares the volatility of the S&P 500 index (standard deviation of 14.5) to the median (50<sup>th</sup> percentile) result of 60-stock portfolios (standard deviation of 15.2). Not surprisingly, these values are fairly close. However, at the 5<sup>th</sup> percentile of results, the standard deviation of the randomly formed 60-stock portfolio was 17.2—approximately 19% higher risk. The comparable increase in risk for a 15 stock portfolio was approximately 33%. Reliance upon average results works well when the investor owns thousands of portfolios. Usually, however, the investor owns only one. Without understanding the perils of reliance on average values, the trustee is likely to repeat the tragedy of the naïve statistician who drowned while crossing a river averaging only three feet in depth.

**Asset Class:** An asset class such as the S&P 500 is only one of many asset classes that institutional investors utilize to exploit the global opportunity set for the benefit of their clients. If a professional money manager artificially limits the opportunity set, he or she should make it clear that the client is hiring a U.S. large cap manager, or a U.S. mid-cap manager, or an international bond manager. Constructing a balanced and globally diversified portfolio may require 10 or more asset classes. This, of course, raises the number of required securities accordingly.

<sup>1</sup> ERISA mandates diversification to eliminate the risk of large losses. MPT, as narrowly characterized by the history of asset pricing model construction, defines diversification as elimination of unsystematic risk. In a broader sense, however, MPT also defines diversification as the elimination of uncertainty in the process of generating dollar wealth.

<sup>2</sup> Technically, random sampling without replacement.

<sup>3</sup> Surz, Ronald & Price, Mitchell, "The Truth About Diversification by the Numbers," *The Journal of Investing* (Winter, 2000).