This program will focus on examining and explaining the existence, management and performance of pools of capital. The program will initially concentrate on three institutions: pension funds, mutual funds, and hedge funds. The approach will be both normative and positive. In addition to portfolio theory, topics will include the theory for the existence of these institutions, models of how they should perform, an examination of how they have performed, and analysis of structural changes that might improve their performance. The objective of the program is to understand how well these institutions have served the needs of the investor and retirement communities and how better they can do so.

—Martin J. Gruber

IN THIS NEWSLETTER

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Working Papers

Conferences

- **Financial Econometrics: In Celebration of Robert Engle’s Work**, 2003 Nobel Laureate in Economics, September 30-October 1, 2004
- **The Credit Market: Recent Advances in Credit Risk Research**, May 19-20, 2004
- **NBER Market Microstructure Meeting**, May 7, 2004
- **National Forum on Corporate Finance**, May 6-7, 2004
- **Five-Star Conference**, December 5, 2003

External Academic Board

- Sanford J. Grossman
- Robert Litzenberger
- Myron S. Scholes

Corporate Associates

- Alliance Capital Management Corporation
- Bear Stearns
- Canadian Imperial Bank of Commerce
- Cantor Fitzgerald
- Chicago Board Options Exchange, Inc.
- Depository Trust & Clearing Corporation
- Deutsche Bank
- Dresdner AG
- Fitch
- Franklin Mutual Advisers, LLC
- General Motors Investment Management
- The Guardian Life Insurance Company
- International Securities Exchange, Inc.
- Jacobs Levy Equity Management
- Metropolitan Life Insurance Company
- Moody's Investors Service
- New York Stock Exchange
- PricewaterhouseCoopers, LLP
- Resurgence Asset Management, LLC
- Reuters
- Standard & Poor's Corporation
- State Street Windham Alliance
- Susquehanna International Group, LLP
- TIAA-CREF
- Turnaround Management Association
INTRODUCTION

This is the first in a series of newsletters to be issued by the Salomon Center over time. The idea of each of these newsletters is to present a topic of interest to both the academic and business communities and to highlight important research conducted at NYU as well as the academic community in general. I am pleased to begin this series of newsletters in the area of Asset Management.

MATTHEW RICHARDSON

This is the first newsletter from the Asset Management Group of the Salomon Center. We intend to publish a newsletter in Asset Management approximately every two years. In each of these newsletters, we intend to feature an article written by either a well-known academic or practitioner; to profile a well-known figure in the field of Asset Management; to summarize some of the recent research being done by associates at the Salomon Center and to list all working papers in the area of Asset Management at the Salomon Center.

In this issue, we include an interesting and provocative article by one of the best known practitioners and philosophers in the mutual fund industry: John Bogle. In addition, we include an interview with the founder of Modern Portfolio Theory, Nobel Laureate Harry Markowitz. We also present summaries of nine recent papers written by associates of the Center and members of the faculty at New York University. These papers deal with issues related to the comments of John Bogle as well as issues of importance to Mutual Funds and Pension Funds.

MARTIN J. GRUBER
RESEARCH PAPERS

INDEX FUNDS THAT PROVIDE IDENTICAL SERVICES CHARGE VASTLY DIFFERENT FEES

Arguably, the most important issue in the mutual fund industry right now is the fees they charge investors. Are these fees excessive, and, if so, why in a competitive capital market don’t all investors just go to the lowest fee funds? One of the reasons is that it is difficult ex ante to determine whether the fee is appropriate compensation for services provided by the fund manager, whether that is excess performance, diversification, low transactions costs, etc. In fact, these are standard reasons provided by the industry to regulators and others concerned about the magnitude of fees.

Salomon Center Asset Management members Edwin Elton and Martin Gruber, along with co-author Jeffrey Busse, have come up with a novel way to look at the problem. Rather than looking at a particular fund’s service/performance versus its fee, they look cross-sectionally at virtually identical funds and compare their fees. In particular, though S&P index funds hold virtually the same securities, they differ by more than two percent per year in the fees they charge investors and the returns they offer investors. In Are Investors Rational? Choices Among Index Funds (SCAM working paper no. 02-08), the authors’ big finding is that the relative returns offered by alternative S&P index funds are easily predictable – one can simply select funds based on low expenses.

In fact, an investor holding a portfolio of the ten percent of funds with the lowest historical fees received an extra 0.92% annually compared to the investor who held the ten percent with the highest fees. Similarly, investing in funds with high past returns gives an extra 0.97% per year compared to investing in funds with poor past returns.

These results suggest that dominated products (e.g., high expense index funds) can prosper. Why? The authors conclude that it is likely that these funds are being bought by uninformed investors who are swayed by marketing and the advice of investment advisors with questionable incentives. The informed investors cannot short sell the funds, and so they continue to exist and some even prosper.

There is a growing literature in finance that questions the rationality of investor behavior. This paper provides a natural laboratory to address this issue, and suggests substantive irrationality on the part of investors who choose to go into these predictable poorly performing index funds. What this suggests for regulators is an open question, but, at the very least, one would think that providing transparent information to investors on this issue would affect their investment patterns. There is a sense that some of these results must partly be due to ignorance.

— Jonathan Spitzer

WHAT’S A MUTUAL FUND CONTRACT WORTH?

The mutual fund industry manages 13 trillion dollars of assets worldwide. It has recently gone through tremendous turmoil as the industry has been attacked for various practices from a lack of corporate governance structure, to violations of fiduciary responsibility for allowing market-timing of its funds, to “excessive” fees charged investors, etc… Given the latter criticism on the fee front, it may seem surprising that no researchers to date have produced a valuation framework for mutual fund contracts. This would seem to be crucial not only for commenting on the present value of the fees in the industry, but also on the industry’s incentives vis a vis its investors.

Now in The Valuation of Mutual Fund Contracts (SCAM working paper no. 03-09), Salomon Center Asset Management members Jacob Boudoukh, Matthew Richardson and Robert Whitelaw, along with co-author Richard Stanton, show how to do this. They provide a valuation methodology for mutual fund contracts under the standard mutual fund expense method in which fees are a fixed percentage of assets under management.

At first glance, this may seem like a trivial exercise. One could imagine taking the percentage fee charged by mutual funds, then multiplying it by the assets under management, and then summing this amount over the relevant life of the fund. This is possible because, putting distributions and growth aside, the expected return and discount rate of the assets under management offset each other. This key insight is picked up by the authors as they recognize that, in an
efficient market, the present value of a claim on the future value of say IBM is simply the current value of IBM.

Their big contribution, however, is to incorporate the well-known empirical finding that the flows going into the fund depend on the fund’s performance. Thus, increases in assets under management come from two sources: (I) high returns on the underlying assets, and (II) large flows due to these high returns. This induces an option-like payoff in the value of the mutual fund contract. They derive a closed form solution that shows the value can be written in terms of three elements: (1) the current value of assets under management, (2) the volatility of this value and the risk-free rate (due to option-like features), and (3) a set of parameters that describe the fund, most importantly including the fees, the growth rate of the flows into the fund, and the sensitivity of the fund flows to performance. Since the latter two flow parameters can be shown to depend on the fund’s fee structure, age, size, asset class and style, the paper produces interesting and complex effects for mutual fund contract valuation.

For example, they show that the contract is increasing in the volatility of the fund’s return but decreasing in both the correlation and volatility of the index the fund is benchmarked against. The former result on volatility has been found elsewhere in the literature in the asset management area as a result of incentive fees. But here the risk-taking incentive occurs naturally in a fixed fee framework due to the fund flow relation. Moreover, contrary to conventional wisdom, the fund flow relation does not have to conform to a “winner take all” tournament.

The functional relation between the mutual fund value and the underlying net asset value of the fund is nonlinear. The degree of the nonlinearity depends on the sensitivity of the fund’s flows to its excess performance. In fact, it is possible to characterize the fundamental determinants of the return on mutual fund contracts. Under assumptions about a fund family’s expenses, the return on the mutual fund business can be described by an observable set of factors. This has important practical implications for the risk management of mutual fund businesses, as well as providing an interesting laboratory for academic analysis of the price efficiency of these companies.

In an extension of their closed-form framework, the authors build a complex model in which fund flow growth rates and sensitivities to performance are nonlinear, path and state dependent, incorporating such features as asset class, volatility, fees, age and size. The big result is that both fund flow growth and sensitivity are strongly negative in size and age of the fund. Thus, old funds tend to wither away but can be cash cows even with poor performance. With this in mind the paper provides simulation results for mutual fund contract values. They tend to be highly skewed cross-sectionally with a few winners providing significant value to the sector. Given the exponential relation between the mutual fund contract value and its NAV, this skewness arises through a fund getting a significant number of “lucky” draws as a young fund which is quite rare. Note that this coincides with empirical characteristics of the mutual fund sector but here is derived endogenously as an outcome of the model.

The result also leads to a natural analysis of how mutual funds optimally set their fee structure. The authors show that there are multiple offsetting effects of higher fees. On the one hand, higher fees increases value through higher current revenues. On the other hand, fees decrease value because they hurt fund growth directly through fees’ negative impact on net asset value and through its negative effect on relative performance. Moreover, to the extent the fund flow parameters depend on fees, e.g., the growth rate declines in the fee, this also has a negative impact on value. Thus, higher fees are not always optimal. Quite generally, given the estimated fund flow/performance relation, the optimal strategy is to choose lower fees initially and then hike them up down the road. To the extent there are regulatory limitations on funds being able to do this, the authors’ result explains why many funds offer fee forgiveness in their early lives.

— MR

FEES ON FEES

Funds of funds (FOF), hedge funds themselves, are an increasingly popular avenue for hedge fund investment. There are many requirements that restrain investors from investing in a hedge fund (minimum wealth levels, closed funds, no performance and holdings disclosure). This environment has allowed the creation of hedge funds, FOF, that invest in hedge funds, therefore providing a tool for diversification. Additionally FOF allow investors to invest in otherwise closed funds, and provide professional management services and access to information that would be difficult or expensive to obtain on a fund by fund basis by the investor.
Stephen Brown, along with co-authors William N. Goetzmann and Bing Liang, in Fees on Fees in Funds of Funds (SCAM working paper no. 02-06) connects the facts about the poor average performance of FOF to the way FOF get paid - their fee structure. FOF charge their investors a fixed proportion of the before-fees FOF return as management fees, and an additional incentives fee. This fee structure is also applied by the individual hedge funds. The before-fees FOF return is calculated as the return on their capital after they have paid the individual hedge fund fees. Therefore the FOF investors bear all the fees. The authors demonstrate that this double fee tactic is one reason for the poor performance of FOF compared to hedge funds, and also they suggest a new fee structure that would be less expensive for the FOF investor, and fairer.

The paper starts by looking at the historical performance of FOF and hedge funds. FOF are good in diversification but under-perform hedge funds in monthly returns. They reduce by a third the standard deviation of monthly hedge fund returns, and also significantly reduce the value at risk, but their monthly returns are half the corresponding average hedge fund returns. Also the Sharpe ratios for FOF are lower than those of individual hedge funds. Subsequently the authors find that the current performance of FOF is not related to the management fees, or incentives fees. Actually they find that a negative relation exists between current performance and management fees of FOF.

The authors then show how the FOF investors may end up paying fees, even when the before-fee return on the FOF is negative. This is not surprising, and actually, any individual investor who would like to diversify across hedge funds, would (almost) always have to pay fees even when her return on investment was negative. What is however of interest is to see whether the FOF try to hedge the incentive fees of the individual hedge funds or not, which is something that individual investors cannot do, due to lack of information or high costs of acquiring it. The results mentioned above indicate that FOF do not hedge individual hedge fund incentive fees. The expected value of these unhedged fees then becomes a deadweight cost that impairs the performance of FOF investments.

The most important contribution of the paper is to calculate the deadweight cost, that a FOF investor faces, associated with not hedging the underlying hedge fund incentive fees. They compute this cost for different FOF investment strategies, and they always find that the cost is always positive and substantial. This cost then is one reason for the relatively poor performance experience of most FOF. However the authors mention that these numbers may be an overstatement of the potential gains from hedging the incentive fees, because in practice certain hedge fund strategies would generate incentive fees that would be difficult to hedge.

The paper finally concludes with a proposal of a new fee structure that is actually the practice elsewhere in the funds management business. This is to have the FOF manager absorb the individual fund incentive fees in return for a higher FOF management fee and/or incentive fee structure.

— Antonios Sangvinatsos

DOES MUTUAL FUND PERFORMANCE VARY OVER THE BUSINESS CYCLE?

Mutual fund performance has been of interest to financial economists, both because of its implications for market efficiency and because of its implications to investors. A key question in evaluating performance is the choice of benchmark model. With a model for normal returns, it is impossible to define an abnormal mutual fund return. The relative success of conditional asset pricing models raises important questions for the mutual fund researcher. How does one evaluate a performance when the underlying model is conditional? Might performance itself be conditional? In principle, conditional model allows both risk loadings and performance over a period to be a function of information available at the start of the period. Several recent papers allow risk loadings to be time-varying but they either assume that conditional performance is constant, conditional betas are linear in the information variables, or both.

Salomon Center Asset Management members Anthony Lynch and Jessica Wachter, along with co-author Walter Boudry in their paper “Does Mutual Fund Performance Vary over the Business Cycle?” (SCAM working paper number 03-03) develop a new methodology that allows a conditional performance to be a function of information available at the start of the period, but without assumptions on the behavior of conditional betas. Their methodology uses the Euler equation restriction that comes out of a factor model rather than a beta pricing formula itself. It only assumes that stochastic discount factor (SDF) parameters are linear functions in the information variables. While the Euler equation does not provide
direct information about the nature of time variation in risk loadings, it can provide direct information about time-varying conditional performance. In contrast, classic regression methodology can provide direct information about time-varying performance only if strong assumptions are imposed on time-varying betas.

Another important contribution is based on the Anthony Lynch and Jessica Wachter earlier work “Generalized Method of Moments for Data Series of Unequal Lengths” (New York University Working Paper, 2003). This methodology allows for non-linear estimation of Euler equation restrictions taking into account longer time-series of factor return and dividend yield data, than mutual fund data.

The authors use Euler equation restrictions to assess the conditional performance of funds in the Elton, Gruber and Blake (1966) mutual fund data set. Conditional performance is estimated for equal-weighted portfolios grouped by fund type. Three of four fund types are the Weisenberger categories, maximum capital gain, growth, and growth and income, while the fourth group includes all other funds in the sample. The dividend yield is used as the information variable for it has been found to predict stock returns and move with the business cycle. The fund data is from January 1977 to December 1993, and factor and instrument data is from January 1927 to December 1993.

Three different models are estimated in the current study: the CAPM, whose only factor is the excess return on the value-weighted stock market; the Fama and French (1993) model whose three factors are the market excess return, the return on portfolio long high and short low book-to-market stocks, and the return on a portfolio long big stocks and short small stocks; and the four-factor model of Carhart (1997) whose factors are the three Fama-French factors plus the return on a portfolio long stocks that performed well the previous year and short stocks that performed poorly. The authors estimate three different versions of each model: unconditional model; conditional model, whose performance is not allowed to depend on the information variable; and the conditional model with performance allowed varying with the information variable.

They find that conditional fund performance moves with the dividend yield. In particular, the Wald test for equality to zero of the performance coefficients on dividend yield for the four fund types is always rejected, irrespective of the pricing model being used as a benchmark. The authors also find that the conditional abnormal performance varies across the four fund types. They find that for all fund types, except growth funds, abnormal performance rises during economic downturns, while abnormal growth fund performance rises during peaks. These results hold regardless of what benchmark model is used.

The authors also check (and rule out!) an alternative hypotheses that their pricing model is misspecified. They repeat their testing using the 25 Fama-French portfolios sorted on size and book-to-market instead of their four fund type portfolios. If the pricing model misspecification is driving the fund performance results, the dividend yield performance coefficients should be lower and for the low book-to-market portfolios than for either the rest of high-to-book-market portfolios. Instead, for their fund sample period, the point estimates go in the opposite direction, irrespective of the pricing model benchmark or estimation method employed. Additional very important robustness check the authors do is the application of their unequal-samples methodology. The results are unchanged quantitatively with regard to those of the short-sample GMM methodology. However, use of longer time-series for factor return and dividend yield data methodology allows them to produce substantially more precise estimates with the percentage reduction in standard error estimates of near 50% for SDF and around 30% to 40% for the performance parameters!

—Olesya Grishchenko

**DOES YOUR 401K PLAN OFFER THE RIGHT CHOICE?**

401K plans are the sole financial investment for more than half of plan participants, so the company’s choice of investment alternatives becomes extremely important. This is even more so given that recent research suggests that 401K plan participants often spread their wealth equally across the investment choices offered. Are companies choosing investment menus wisely? Or are plan participants missing investment opportunities?

Salomon Center Asset Management members Edwin Elton and Martin Gruber, as well as co-author Christopher Blake explore these questions in *The Adequacy of Investment Choices Offered By 401K Plans* (SCAM working paper no. 03-10). In the paper, they examine the investment alternatives offered in four hundred and seventeen 401K plans.
There does seem to be some evidence of the funds being carefully selected since the naïve strategy of equally weighting the available mutual funds does provide a lower variance than a comparison portfolio consisting of an equal number of random mutual funds. However the variance of the naïvely selected portfolio does become higher if the investor chooses to hold at least one stock and one bond fund.

Of course, return variance is only one dimension of risk, so the authors test whether the investment menu offered to plan participants is able to span a set of carefully chosen benchmarks. In only 38% of the plans is the investments menu rich enough to satisfy the investors needs and, perhaps unsurprisingly, these funds tend to be those offering the greatest number of alternatives. It is notable that the inclusion of company stock as an investment alternative (which is offered in 22.9% of the plans) does not affect any of the spanning results.

While some companies appear to be doing a fine job of selecting investment alternatives for their employees, there are some firms that perhaps need to improve upon their choices of investment alternatives for the 401K plans they offer employees.

— Jonathan Spitzer

WHY FUND MANAGERS WANT TO GATHER UNDER THE UMBRELLA OF A FUND FAMILY?

Open-end mutual funds intermediate much of the investment in financial securities. However, a mutual-fund manager does not usually work directly for investors, but rather for a mutual-fund family like Fidelity. The existence of this additional layer of agency is a significant complication whose economic role, other than possibly economies of scale and scope, has to date been somewhat of a puzzle.

Fund Families as Delegated Monitors of Money Managers (SCAM working paper no. 03-14), Salomon Center Asset Management member Anthony Lynch, along with coauthors Simon Gervais and David Musto provides a resolution to the puzzle that recognizes that investors typically learn less about manager quality than managers can learn themselves. In such a setting, the authors argue that the fund family can act as a validation mechanism for the manager by conveying to investors the manager’s own information about her skill, which she could not otherwise convey. But just as all managers have an incentive to say that they are skilled, fund families have an incentive to say that all the managers they hire are skilled. So why would investors believe fund families any more than managers? They show how mutual fund families can credibly convey manager quality with a commitment to fire a return dependent fraction of managers. Investors know that when it comes time to bite the bullet, the fund family will fire the worst managers first. The remaining managers are thus of better expected quality, and an investor can use this information to make a better-informed decision about whether to invest in a fund or not. The family does not completely solve the problem since the fraction to be fired is determined ex ante and can differ from the ex post fraction that is unskilled. But as the number of funds monitored by the family grows, the per-manager likelihood of a difference goes to zero and, in the limit, managers are fired if and only if they are unskilled, as a first-best scenario would dictate.

Their analysis centers around a two-period model of the money-management problem in which everybody has the same information about manager quality at the outset. Critically, managers are assumed to learn their skills faster and more precisely than investors do, which is reasonable since managers know about many dimensions of their trading strategies that investors can only imperfectly infer. Moreover, information about the manager’s trading strategies cannot be safely shared with individual investors because of concerns about front-running. In contrast, this information can be safely disclosed to closely-watched board members affiliated with a fund family.

At the beginning of second period, investors update their beliefs only based on observed returns, while the manager’s private information allows her to learn much more about her skill. Since observed returns are a noisy proxy of manager skill, a manager with a good return could privately know she is not worth hiring, and a manager with a poor return could privately know she is worth hiring. However, with limited liability, managers cannot credibly publicize their private information, and as a result, contracts with the investors can only depend on the investors’ information. The result is inefficient rehiring decisions and lower average compensation for managers. A manager can solve this credibility problem and improve her expected compensation by joining a fund family that is capable of determining her quality and credibly conveying information about that quality to investors.

This paper not only provides an economic rationale for mutual-fund families, but also yields some interesting empirical predictions. For example, it
predicts that the efficiency gain of fund family grows with its size; monitoring adds value early in a manager’s career, and fund families add more value when public information is less informative. Their framework could also be used to consider other issues in money management, such as when a fund manager would be better off leaving a fund family to manage independently. And interestingly, their results that monitoring captures more value as number of funds grows may relate to the recent development of “funds of funds.”

— Yang Lu

WHAT IS THE NATURE OF FUND MANAGERS’ RISK-SHIFTING, AND HOW CAN THIS BEHAVIOR BE PREVENTED?

It is well known that the amount of new inflow a fund manager gets next year is positively related to his current year performance. This creates a degree of convexity in a fund manager’s compensation which in turn may induce her to deviate from her otherwise optimal asset allocation choice. In addition, the difference in appetite for risk of the manager and her investors may also lead to sub-optimal asset choice for fund investors. Given the tremendous size and the retail nature of the mutual fund industry, the ensuing costs born by investors can be significant. It is therefore crucial to have a framework to analyze the impact of fund managers’ misbehaviors and more importantly to design and evaluate preventive measures.

Salomon Center Asset Management member Alex Shapiro, along with co-authors Suleyman Basak and Anna Pavlova, in Offsetting the Incentives: Risk Shifting and Benefits of Benchmarking in Money Management (SCAM working paper no. 03-15), offer a simple, intuitive approach to this issue by realizing that managers trade off between gambling incentives and their own risk aversion. In sharp contrast to the traditional view, the authors point out that the maximum risk shifting behavior can occur at some critical level of underperformance. This is simply because the manager is risk-averse, and her risk aversion always counteracts the tendency to gamble. Moreover, the incentives to gamble may actually force the manager to reduce the volatility of her portfolio, which is also in contrast to the common view based on the traditional risk-shifting intuition.

In addition, the authors show that it may be optimal for the manager to reach maximum deviation from the index via selling the risky asset despite its positive risk premium. Under multiple sources of risk, with both systematic and idiosyncratic risks present, it is shown that optimal managerial risk shifting may not necessarily involve taking on any idiosyncratic risk.

Costs of managers’ misaligned incentives are shown to be economically significant. For example, if the investor’s relative risk aversion is 2 and the manager’s is 0.5, the authors show that the cost to investor can be as high as 54% of his initial wealth. This cost is particularly severe when manager’s and investor’s attitude towards risk differ substantially, while the cost due to manager’s gambling behavior is high when the payoff function is highly convex or when the index is very risky. Given the magnitude of these costs, it is important to have some mechanism in place to ward off the manager’s adverse incentives.

To this extent, the authors introduce a simple instrument, referred to as “minimum performance constraint” or a “benchmarking restriction,” which prohibits any year-end shortfall in the manager’s return relative to a reference portfolio to exceed a pre-specified level. This simple, yet versatile, constraint is closely related to some popular risk management practices (e.g., portfolio insurance, pure indexing, tracking error constraints), and involve no monitoring costs. They show that a benchmark that is less risky than the index can temper deviations from the investors’ desired risk exposure in states where the manager is tempted to deviate the most, and hence is beneficial. For example, as a result of imposing a benchmark consisting of 5% in the stock market and 95% in the money market, most of the loss of 54% in the earlier example can be recouped. Through tailoring the composition of the benchmark and the allowed shortfall, the recouped fraction can be increased further. This thus provides a rationale for benchmarking type restrictions observed in the industry.

—Anh Tuan Le

TRADING WITHOUT INFORMATION

Remunerating fund managers based upon risk adjusted performance measures such as the Sharpe ratio is common place in the fund management industry. Recent research has shown that such measures can be effectively gamed by zero investment informationless trading strategies. That is, a superior Sharpe ratio to the benchmark can be obtained by trading puts and calls on the benchmark (or if they are not available by dynamically trading
the benchmark). The fact that such strategies exist would not be overly concerning except for the fact that these strategies have the property that their payoff is a concave function of the benchmark return. This means that while they appear to provide superior performance, they expose investors to significant downside risk. This places the mutual fund industry in a precarious situation – fund investors may simply be rewarding fund managers for exposing them to large downside risk, rather than for utilizing asset management skill to produce superior returns.

Informationless Trading (SCAM working paper no. 04-01) by Salomon Centre Asset Management Member Stephen Brown (with David Gallagher, Onno Steenbeek and Peter Swan) provides some empirical evidence on this issue. Motivated by the real world examples of Nick Leeson and Long Term Capital Management, the authors examine one of the simplest informationless trading strategies that can game the Sharpe ratio: doubling. In their model, the fund manager makes an initial investment and if the fund value increases past the high water mark they sell off gains and reestablish the position. If the fund value falls, however, the fund manager then increases their position in the fund assets in the hope that the asset prices will increase and they will make back their losses.

Creating a powerful test of informationless trading strategies is typically difficult because it is often impossible to obtain trading and holding data for mutual funds due to their proprietary nature. What makes the empirical results of the paper so interesting, is that the authors have exactly this data set – daily transactions and holdings data for forty successful Australian mutual funds. While not the complete universe of Australian mutual funds, it does represent a significant cross section of the industry.

Using this unique dataset to test their model, the authors find evidence that some managers do in fact engage in this doubling type of trading strategy, with it being more common among fund managers who form part of a decentralized money management team and who are compensated in the form of an annual performance based bonus. Interestingly, this doubling does not occur at the fund level, as would be suggested from the maximal Sharpe ratio model above, rather it occurs at the stock level. The authors argue that this result is consistent with several theories in behavioral finance, in particular prospect theory and the disposition hypothesis.

Although the paper only considers the Australian mutual fund industry, the fact that such strategies appear to be present there, does give rise to the notion of similar strategies existing in the US market. Such a possibility should be of concern to regulators, institutions and individuals alike because of the chance of significant unforeseen losses. This leaves us with one last question: Do you know what your fund manager is doing?

— Walter Boudry

WHAT SHOULD BE AN OPTIMAL CONTRACT FOR PORTFOLIO MANAGERS?

The appropriate evaluation and compensation of portfolio managers is an ongoing topic of debate among practitioners and regulators. One commonly used performance measurement criterion by practitioners is the simple benchmark comparison method, but academic literature provides more negative results than positive ones on the question of the optimality of benchmarking. One reason for the disagreement between practitioners and academic researchers could be oversimplification of assumptions in the literature. Although performance measurement and optimal managerial contracting are two sides of the same coin, the academic literature has largely considered the two questions separately. So could a contract combining both incentive consideration and realistic portfolio choice and asset pricing models replicates what practitioners are doing?

In Portfolio Performance and Agency (SCAM working paper no. 04-03), Salomon Center Asset Management member Jennifer Carpenter, along with co-authors Philip Dybvig and Heber Farnsworth, derives optimal contracts for portfolio managers in the tradition of agency theory but uses a rich model of security returns with full spanning of market states. In this model, the manager can expend effort to influence the precision of a private signal about future market prices. The investor’s problem is to find a contract for the manager that provides incentives to take costly effort and to use the signal in the investor’s interest while still sharing risk reasonably efficiently.

The model is developed in three cases: the first best problem where the manager’s effort to extract signal is contractible; the second best problem where manager’s effort is not contractible but the signal itself is; and the third best problem where both are not contractible.
In the first-best world, the optimal risk-sharing rule is to pay a fixed proportion of funds under management. This will induce the manager not only to take the first-best effort but also choose to report the signal honestly.

In a second-best world, in which the manager’s signal is observable but his effort is not contractible, the optimal fee for the manager is to give him a “bonus” that is proportional to the excess return of the fund over a benchmark in addition to a fraction of end-of-period assets under management. This suggests using excess returns over a benchmark as a measure of portfolio performance. This is intriguing since measuring portfolio performance relative to a benchmark is common practice in the portfolio management industry.

In a third-best world, neither the effort nor the signal is contractible. An additional incentive to report extreme signals or choosing riskier portfolios may be required. The intuition for this is straightforward. In order to induce effort the manager is over exposed to the risk of the signal through the bonus of the second-best contract. So a manager who can misreport will try to report a signal that is too conservative in order to reduce this risk exposure. Therefore, the compensation should provide an extra reward for risk taking. In addition, the optimal contract includes restrictions on the set of permitted strategies. These institutional features are more similar to practice than other existing agency models in finance.

— Zheng Sun
PROFILE: HARRY M. MARKOWITZ

HARRY M. MARKOWITZ won the Nobel Prize in Economics for his work on Portfolio Analysis. Few academics have matched his achievement in virtually creating one of the central themes in Finance. Harry agreed to take part in a short interview for our first volume.

Q: What was the initial reception and impact of your original article on Portfolio Theory?

A: Not much. My article “Portfolio Selection” appeared in 1952. Mark Rubinstein provided an extensive bibliography on Portfolio Theory for the 1970 edition of my 1959 book. Mark’s bibliography contained only 4 or 5 articles on Portfolio Theory published in the 1950’s. I do not know of any additional ones. The turning point with respect to general interest in Portfolio Theory seems to be Bill Sharpe’s 1963 and 1964 articles which, respectively, presented the one-factor model and CAPM.

Q: Is there any incident or incidents that strike you as either very important or humorous in the early states of acceptance of your work on Portfolio Theory?

A: An early article on Portfolio Theory was published by Weston and Beranek. I met Bill Beranek many years later and he told me the following story. Beranek was asked to read my 1952 article when he was a student in a class by Professor Weston, since he had more math than others in the class. He not only joint authored a resulting article with Weston but also proposed to work on Portfolio Theory for his Ph.D. dissertation. His advisor (not Weston) recommended that he “not bother with Portfolio Theory but work on something practical instead”. He followed the advice of his advisor.

Q: What influenced you to become an economist?

A: The choice of Economics was a last minute decision on my part. When I was in high school I read Philosophy (original authors) and Physics and Astronomy at a popular level. When I entered the University of Chicago I was excused from their survey course on the physical sciences because I did well on the placement exam. Two years later when I finished their 2-year Bachelors program and had to choose an upper division, I forgot my previous
interest in Physics and Astronomy and remembered my interest in economics in the survey course on the Social Sciences I had taken recently.

Q: Who had the most influence on your professional career?


Q: How did your life change after you won the Nobel Prize?

A: Actually there are 3 honors for my work in Portfolio Theory that I hold very dear. The first is the Elton and Gruber volume on Portfolio Theory 25 Years Later: Essays in Honor of Harry Markowitz; the second is the Nobel Prize; and the third is the selection by Pensions and Investments of Andrew Carnage and me as their “Men of the Century”. Of equal or greater importance is the fact that Portfolio Theory is extensively used in practice.

Q: What, in your view, is your most underappreciated paper?

A: The paper by Nilufer Usmen and me that appears (in 2 parts) in a 1996 issue of the Journal of Risk and Uncertainty, on “The Likelihood of Various Stock Market Return Distributions”.

Q: If you were to recommend one book to a young business school graduate, what would it be?

A: Peter Bernstein’s “Against the Gods”.

Q: What is your favorite non-academic book and what are you reading now?

A: My favorite non-finance book is David Hume’s A Treatise of Human Nature. What I am reading now is Connecting Quarks and the Cosmos, put out by The National Research Council.

Q: What is your favorite movie?

A: It is a toss-up between Fantasia (the original one), It’s a Mad, Mad, Mad, Mad, World, and Who Framed Roger Rabbit.

Q: What is your favorite vacation spot?

A: Any warm place that has coral where I can snorkel.

Q: If you had to choose one hobby, what would it be?

A: Listening to music.

Q: Which paper in the past decade do you think has had the most impact?

A: I don’t know if it is less than a decade old but Bill Sharpe’s proposals with respect to style analysis seem to me to be the last big idea to become standard practice.

Q: What is a typical day in your life today?

A: I arrive at the office about 10:00 a.m., work until a little after noon, walk for a mile to lunch, walk for a mile back, work for the afternoon, then go home for dinner with Mrs. Markowitz.

Q: What is the most interesting project you have worked on in the last five years?

A: Among the ones which are now finished and published, I guess I would say the one with Erik van Dijk in the Financial Analyst Journal “Single Period Mean-Variance Analysis in a Changing World.

Q: What finance projects are you currently working on?

A: The largest is a detailed stock market simulator with Bruce Jacobs and Ken Levy.

Q: What projects do you have planned for the future?

A: That would be like telling where I think there is gold to be mine.
SPECIAL TOPIC: JOHN Bogle ON MUTUAL FUNDS

JOHN C. BOGLE, 74, is Founder of The Vanguard Group, Inc., and President of the Bogle Financial Markets Research Center. He created Vanguard in 1974 and served as Chairman through 1997 and Senior Chairman through 1999. (The Vanguard Group is one of the two largest mutual fund organizations in the world, comprising more than 100 mutual funds with current assets in U.S.-based funds totaling about $600 billion.) He had been associated with a predecessor company since 1951, immediately following his graduation from Princeton University, magna cum laude in Economics. He is a graduate of Blair Academy, Class of 1947.

In 1997, Mr. Bogle was named one of the “Financial Leaders of the 20th Century” in Leadership in Financial Services (Macmillan Press Ltd., 1997), and in 1996 he was named “Fund Leader of the Year” by Fund Action magazine. In 1999, Fortune magazine named him one of the investment industry’s four “Giants of the 20th Century,” and earlier that year he received the Woodrow Wilson Award from Princeton University for distinguished achievement in the Nation’s service.

Mr. Bogle was born in Montclair, New Jersey, on May 8, 1929. He now resides in Bryn Mawr, Pennsylvania, with his wife, Eve. They are the parents of six children and the grandparents of twelve.

MEASURING MUTUAL FUNDS WITH THE “STEWARDSHIP QUOTIENT”*

Ever since the first of the mutual fund scandals came to light shortly after Labor Day 2003, the circle of fund organizations involved has continued to grow. To date, more than a dozen firms have been implicated in some form of late trading (illegal manager behavior) or international “time-zone” trading (unethical manager behavior). Many of the charges brought by state and federal regulators have already been settled, with the managers agreeing to financial penalties.

Make no mistake about it. Most of the firms involved in the scandals are major industry participants. Their aggregate fund assets of nearly $1.4 trillion represent nearly 20% of the industry’s $7.2 trillion total. As the scandals have unfolded, investor reaction turned from incredulity to revulsion, and then to self-defense, with rising share liquidations at the firms that were affected. And there may be more enforcement actions to come.

These firms have betrayed the trust of their clients. Accordingly, those clients are justified in their reaction. What’s really the point of keeping your money with a firm that has betrayed your trust? Even the new CEO of one of the largest firms involved seems to agree. “. . . There were individuals here,” he said, “who had a lapse of judgment and who put their interests first ahead of shareholders . . . I believe that was the wrong judgment. When an investment professional violates a fiduciary trust, you don’t get a second chance. And I don’t think there’s a statute of limitations.”

Yet investors seem unsure as to where they should turn to replace those funds that have failed to measure up to the trust that they placed in them. In my view, they should select funds from those organizations that have strived to strike a proper balance between the interests of fund shareholders and the interests of fund managers—those who, if you will, have placed a heavier weight on stewardship than on salesmanship; those who have done their best to put service to shareholders above service to themselves; those who have emphasized professional standards rather than business conduct.

I’m not naïve about this subject. Every profession has elements of a business. No organization in which expenses exceed revenues will long exist. But when I look at some of our nation’s proudest professions—medicine, law, accounting, journalism, architecture, and, of course, trusteeship—I fear that the traditional balance has been gradually shifting away from that of trusted profession and toward that of commercial enterprise. Writing in The New York Times Magazine early this year, Roger Lowenstein bemoaned the loss of the “Calvinist rectitude” that had its roots in “the very Old World notions of integrity, ethics, and unyielding loyalty to the customer.” “America’s professions,” he wrote, “have become crassly

* Mr. Bogle is founder and former chairman of The Vanguard Group. The opinions expressed in this article do not necessarily represent the views of the firm’s present management.
commercial...with accounting firms sponsoring golf tournaments,” and, he might have added, mutual fund managers not only doing the same thing, but also buying naming rights to stadiums. “The battle for independence,” he concluded, “is never won.” And so it is in the field of investment management.

A Challenge to Judgment

While I have no particular wisdom to offer other professions about the importance of returning to their roots, I do have some ideas on that score about the trusteeship of other people’s money. In this article, I challenge investors to evaluate the firms that manage their funds—whether they have been implicated in the scandals or not—by the extent to which these firms have appropriately balanced the inevitable conflicts between business and profession. The scandals have arisen when fund managers have clearly put their own interest in asset-gathering, business-building, and the maximization of fee revenues ahead of the interest of their fund shareholders in financial integrity, fair treatment, honest disclosure, and optimal investment returns. Their misconduct has given us all the opportunity to address that balance in a new light.

The scandals, then, are a blessing in disguise. They awaken us not only to the shoddy illegal and unethical practices of various extreme forms of mutual fund “market timing,” but to the damage done by the equally pernicious but far more subtle forms of market timing resulting from our creation of specialized “style-box” funds and sector funds, bought today to be sold on some date near or far, rather than truly diversified equity funds bought to be held, well, forever.

We have departed a long, long way from the mutual fund industry that I joined in 1951. Then, the field was composed primarily of funds whose returns would more or less track the stock market itself; funds with low costs and low portfolio turnover; funds designed for long-term investors; and fund organizations that measured up to this standard: We sell what we make. What a difference a half-century makes! Today, most of the funds that our industry offers to investors are relatively undiversified funds with high costs and high portfolio turnover; funds too often designed for market traders and short-term speculators; and fund organizations that hew to a new standard: We make what will sell.

Some funds and fund managers have attempted to hold the fort against the industry’s new paradigm in which marketing has superceded management. For investors who decide that they have had enough of the sharp practices and misbehavior that have characterized the scandalized firms and decide to move assets to another fund or organization, it is to these firms that I believe they should turn. Even if they own funds that are not—or not yet—participants in the scandals, investors might consider using these firms presented to re-appraise how they think about all of the mutual funds that they favor with their trust.

The Stewardship Quotient

How can investors identify fund organizations that are trustworthy, and have the optimal chance of meeting the investor expectations over the long term? Certainly not by past fund performance. The record is clear that past performance is a highly unreliable guide to the returns that funds earn in the future. Rather, such organizations should be measured by the extent to which they have placed the interest of their shareholders ahead of the interest of their managers—the very principle suggested by the Investment Company Act of 1940. When the Act says that mutual funds must be “organized, operated, and managed” in the interests of their shareowners rather than in the interests of their “investment advisers and underwriters” (i.e., distributors), it calls for the stewardship of investor assets to be placed above the salesmanship of the, well, “products” of the managers. Through what I call the Stewardship Quotient (SQ), we can measure twelve elements that will help investors to measure the degree to which the funds balance these two distinct, and often competing, interests.

Before I describe these twelve elements, a disclaimer. I offer the highly subjective viewpoint that was the driving force in my creation, 30 years ago this coming September, of a firm that endeavored to hold stewardship as its highest principle. You may regard my listing of these stewardship elements as self-serving, especially since the Vanguard model of a fund group with a mutual, shareholder-owned structure has yet to be emulated, or even copied. Perhaps it is. But please know that I gain no pecuniary benefit by advocating these standards, only the profound conviction that they are not only the right values for fund investors, but in the long run, the right values for the fund industry.

Exhibit 1—“The Stewardship Quotient”—lists twelve major differentiators that help determine the extent to which a fund organization places the interests of its fund owners ahead of the interests of its managers and their own stockholders. Each fund organization can be rated on these twelve criteria,
from three points (best) to zero (worst). An organization’s SQ is calculated by adding up the scores, dividing the sum by 18 (the median score) and multiplying the result by 100. For example, a firm earning two points in each category (24 in total) would have an SQ of 133.

Now, let’s examine the twelve standards, and see how the ratings reflect stewardship behavior:

1. **Fund Costs – Management Fees and Operating Expense Ratios.** Nowhere is the conflict between fund managers and fund shareholders more sharply and obviously manifested than in the level of management fees and operating expense ratios. Fund expenses range from 2.21% for the high-cost quartile of equity funds to 0.65% for the low-cost quartile—a 1.56% differential that accounts for nearly 70% of the 2.38% enhancement in annual returns earned by the low-cost quartile over the past ten years. This pattern is not period-dependent. During the 1983-1993 decade, for example, the return enhancement was an almost-identical 2.27%—an advantage that an investor can obtain simply by fishing, as it were, in the low-cost-fund pond.

The relationship between expense ratios and returns is consistent not only over time, but over styles as well. The range of annual returns of the highest-and lowest-cost quartiles is remarkably consistent in seven of the nine Morningstar “style boxes,” running between 1.9% and 2.5%. It actually rises to 3.8% and 4.6% respectively in the small-cap blend and small-cap growth categories, which have relatively few funds. **Table 1.** Such a gap, of course, is intuitively obvious: If all of these expert professional fund managers, competing with one another, are, and indeed probably must be, average before the deduction of costs, then it is costs that will differentiate them.

One major aspect of stewardship, then, is the setting of management fees, reconciling the clear conflict between managers (who seek to maximize their fees) and shareholders (who benefit by minimizing them). Lower fee rates, therefore, reflect a higher stewardship score. Since lower expense ratios clearly lead to higher returns, it is only common sense for investors to do their fund shopping in the low-cost quartile. For when you select a mutual fund, you don’t get what you pay for. You get what you don’t pay for. So award three stewardship points to the tiny handful of firms with very low costs, and none to those above the (high) industry norm.

### Table 1: RETURNS vs. EXPENSE RATIOS

<table>
<thead>
<tr>
<th></th>
<th>Low-Cost Quartile</th>
<th>High-Cost Quartile</th>
<th>Low-Cost Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-Cap Value</td>
<td>10.8%</td>
<td>8.5%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Large-Cap Blend</td>
<td>10.4</td>
<td>7.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Large-Cap Growth</td>
<td>8.8</td>
<td>6.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Mid-Cap Value</td>
<td>11.7</td>
<td>9.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Mid-Cap Blend</td>
<td>12.6</td>
<td>10.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Mid-Cap Growth</td>
<td>9.7</td>
<td>7.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Small-Cap Value</td>
<td>13.9</td>
<td>11.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Small-Cap Blend</td>
<td>11.7</td>
<td>7.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Small-Cap Growth</td>
<td>9.9</td>
<td>5.3</td>
<td>4.6</td>
</tr>
<tr>
<td>All Funds</td>
<td>10.4%</td>
<td>8.0%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

2. **Portfolio Turnover.** A similar inverse relationship exists between a fund’s portfolio turnover and its returns: Higher turnover correlates with lower returns. For example, the lowest-turnover quartile of equity funds (average turnover of 15% per year) earned fully 2.3 percentage points of extra annual return vs. the highest-turnover quartile (an amazing average turnover of 176% per year). **Table 2.** This relationship too was remarkably strong, ranging from almost 1% to 2.3% in eight of the nine style boxes, but reaching 3.9% in the small-cap growth group. These return gaps appear to reflect largely the costs of turnover. For taxable investors, however, turnover also increases the tax burden, and on an after-tax basis the advantage for the low-turnover quartile rises from 2.2 percentage points to fully 3.1 percentage points. Let’s award three stewardship points for lower turnover (say, below 30%), and none when turnover exceeds 100%.

Interestingly, if we look at funds on a total cost basis (including expense ratios and turnover costs, which I’ve estimated at a conservative 1% of the turnover rate i.e., an annual cost of 0.5% for a fund with a portfolio turnover of 50%), we find a combined cost/benefit ratio that is even stronger than its two individual parts. The combined expense/turnover cost ratio for the lowest-cost quartile is 0.97%, and for the highest-cost quartile 3.43%, a cost-advantage

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1 It’s also a good idea to look at the dollar amount of fees as well as the fee rate. 1% for a $100 million dollar fund may be reasonable; even ½ of 1% for a $30 billion fund—$75 million per year—may be excessive.

2 Like management fees, there may be special considerations regarding turnover. Quantitative funds, for example, often have turnover in excess of 100%, but they typically are effective at minimizing transaction costs.
of fully 2.46% per year. This gap is manifested in an even larger three percentage point advantage in annual performance—10.7% vs. 7.7%. Table 2a.

Further, since the high-cost funds (annual standard deviation of 23.7%) have assumed about 30% more risk than the low-cost funds (standard deviation of 18.1%), the gap in risk-adjusted returns is even larger. Low-cost quartile 10.7%, high-cost quartile 7.1%, a huge 3.6 percentage point annual edge in risk-adjusted returns for the low-cost funds. Whether we like its decision or not, the jury is in, and it has rendered its verdict: Costs matter. Funds that are managed with a view toward low operating and turnover costs for their investors reflect a significantly higher concern for the stewardship of investor assets than their peers.

### Table 2: RETURNS vs. TURNOVER

<table>
<thead>
<tr>
<th>Annual Rate of Return</th>
<th>Low T/O Quartile</th>
<th>High T/O Quartile</th>
<th>Low T/O Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-Cap Value</td>
<td>10.1%</td>
<td>8.7%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Large-Cap Blend</td>
<td>10.2</td>
<td>8.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Large-Cap Growth</td>
<td>8.6</td>
<td>7.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Mid-Cap Value</td>
<td>12.3</td>
<td>10.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Mid-Cap Blend</td>
<td>11.8</td>
<td>9.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Mid-Cap Growth</td>
<td>9.9</td>
<td>8.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Small-Cap Value</td>
<td>13.9</td>
<td>11.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Small-Cap Blend</td>
<td>12.6</td>
<td>11.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Small-Cap Growth</td>
<td>10.9</td>
<td>7.0</td>
<td>3.9</td>
</tr>
<tr>
<td>All Funds</td>
<td>10.4%</td>
<td>8.2%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

### Table 2a: RETURNS vs. TOTAL COSTS

<table>
<thead>
<tr>
<th>Low ER + T/O Quartile</th>
<th>High ER + T/O Quartile</th>
<th>Low ER + T/O Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-Cap Value</td>
<td>11.1%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Large-Cap Blend</td>
<td>10.3</td>
<td>7.9</td>
</tr>
<tr>
<td>Large-Cap Growth</td>
<td>9.2</td>
<td>7.6</td>
</tr>
<tr>
<td>Mid-Cap Value</td>
<td>13.0</td>
<td>10.6</td>
</tr>
<tr>
<td>Mid-Cap Blend</td>
<td>12.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Mid-Cap Growth</td>
<td>9.9</td>
<td>7.6</td>
</tr>
<tr>
<td>Small-Cap Value</td>
<td>14.2</td>
<td>11.3</td>
</tr>
<tr>
<td>Small-Cap Blend</td>
<td>12.8</td>
<td>7.3</td>
</tr>
<tr>
<td>Small-Cap Growth</td>
<td>11.5</td>
<td>4.7</td>
</tr>
<tr>
<td>All Funds</td>
<td>10.7%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

### 3. Equity Diversification.

Even as stewardship has something to do with organizing, operating, and managing mutual funds that have low costs and low turnover, it also has something to do with offering mutual funds that are broadly diversified and designed to be held for the long-term. At one extreme lies the all-stock market index fund, owning substantially all of the publicly-traded equities in the U.S. and holding them forever. At the other extreme, we have the specialty funds, investing in industry group areas such as telecommunications and technology, created so that investors can effectively “bet” on narrow market sectors and trade among them. In the middle lie the funds following various styles—mid-cap value, small-cap growth etc. Here, investors can bet on which style will outpace, at least for a time, the market as a whole. Such funds may be owned as part of a portfolio, or traded on an opportunistic basis, or both.

In its early era of stewardship, the fund industry was dominated by broad, market-oriented funds, in effect, what we describe today as “Large-Cap Blend Funds” that invest both in “growth” stocks and “value” stocks. Table 3. But in its recent era of salesmanship, such funds find themselves in a small minority, surrounded by an army of more specialized funds with narrow policies.

### Table 3: Number and Type of Equity Funds

<table>
<thead>
<tr>
<th>Style</th>
<th>1949</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Large-Cap Blend</td>
<td>66</td>
<td>88%</td>
</tr>
<tr>
<td>Other Equity</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Specialty</td>
<td>9</td>
<td>12%</td>
</tr>
<tr>
<td>International</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100%</td>
</tr>
</tbody>
</table>

I admit to a strong bias toward highly-diversified funds, especially low-cost index funds. Why? Because they deliver no more nor less than what they promise—as close to 100% of the stock market’s annual rate of return as is achievable. Because of costs, beating the market is by definition a loser’s game for investors as a group, so earning the market return itself is a virtual guarantee that an investor will, over the long-term, accumulate more assets than his neighbors. Let’s award three stewardship points for highly-diversified funds (including all-market index funds) and none for sector funds.
4. Marketing Orientation. What is more, the record is clear that the gap between the returns earned under the highly-diversified, low-cost, broad market concept, relative to the more concentrated funds-as-individual-stocks concept, is far larger than the cost differential. Why? Because the cost differential reflects only the economic component of the investment management service. But there is also large emotional component to the returns earned by investors. Since buying and holding the entire market is apt to entail far less trading and far less emotion, such investors are likely to capture most of the market return.

Stewardship has something to do with eschewing the fads and fashion in investing, and holding to time-tested investment principles. For when fund managers act as salesmen of specialized funds, investors almost universally act at the wrong time. They favor the fads that are in the momentary limelight, in the expectation that investors will take the bait. Partly because of their own greed, investors do exactly that, jumping in after a particular style peaks, and just before it goes, well, out of style. As a wise man said, “the issue is not people with investment problems, it is investments with people problems.”

Fund managers cannot possibly be unaware that the best time to sell an exciting new fund concept is usually the worst time to buy it, a trend so clearly illustrated by the industry’s forming more and more technology funds as their prices soared during the recent bubble. Early in the 1990s, for example, it was rare to see more than a single new tech fund created in a single year. But in 1998-2001, 133 new tech funds were created. Table 4. After the bubble burst, of course, the number of new tech funds plummeted, with only three created in 2002, and none in 2003.

The manager’s range of choice between solid, diversified funds that largely reflect the stock market as a whole, and narrow, specialized funds whose popularity blows back and forth with the market winds is a powerful reflection of its emphasis on stewardship vs. salesmanship. The fact is that the highest stewardship is reflected by managers with the strongest discipline against pandering to the public taste for the hottest new investment ideas, especially those managers who limit their offerings to what they do well—maybe only a single fund, perhaps even a half-dozen. Managers who jumped on the “new economy” bandwagon a few years ago and lured in, collectively, hundreds of billions of investor dollars that went up in smoke when the bubble burst were firms that made what would sell. No stewardship points for them; three points for firms that had the courage to stay the course and simply sell what they made.

5. Advertising. When it comes to advertising, the stewardship-salesmanship orientation is patently obvious. Who pays for advertising? The existing shareholders of the fund. Who benefits from it? The managers who gain revenues by enticing new shareholders to invest in the fund. (It is often argued that the manager is spending “its own money” to promote the fund, but of course it is the fees paid by shareholders that are the source of this money, which could otherwise be waived and returned to the fund.) There is simply no evidence whatsoever that, by bringing in new assets adequate to create economies of scale that more than offset the amount spent, advertising benefits fund investors.

On the other hand, there is considerable evidence that building fund assets above a certain size harms fund investors. For giant size impinges on a manager’s ability to provide superior performance. By generating costs to investors, advertising expenditures reflect a serious question about stewardship; spending these dollars to promote fund growth suggests that salesmanship is in the driver’s seat. For whatever reason, however, most large fund firms find it necessary to spend shareholder dollars to promote new and existing funds. So let’s award the three point maximum to firms that don’t advertise, two points to those that do so only on a limited basis, and one point to those whose advertisements are rife.

But zero points to funds that advertise their performance. Why? Because, almost universally, fund firms advertise only their most successful funds, and they do so only after funds have generated high returns. When the funds fail, or when the stock market has tumbled, the promters lapse into complete silence. Ads that follow that pattern strike me as inherently misleading. At the stock market’s peak in March 2000, 44 funds advertised in MONEY

| Table 4: Number of Technology Funds Created |
|-----------------|-----------------|
| Year | Funds | Year | Funds |
| 1990 | 1 | 1997 | 10 |
| 1991 | 0 | 1998 | 8 |
| 1992 | 0 | 1999 | 29 |
| 1993 | 1 | 2000 | 79 |
| 1994 | 4 | 2001 | 17 |
| 1995 | 3 | 2002 | 3 |
| 1996 | 7 | 2003 | 0 |
magazine, preening about returns that averaged an astonishing 85.6% during the preceding year alone. Could those fund advertisers really have been thinking stewardship? Today, 3½ years later, it sure looks a lot more like salesmanship. Of those 44 funds, nine no longer exist. The average return since then of the funds that survived the next three years came to minus 39.5%, a mere 125 percentage points short of the gains they had so recently touted.

6. Shelf Space. When funds pay for “shelf-space” to build distribution, fund advertising finds a baneful counterpart. A decade ago, when the first of today’s mutual fund supermarkets came into existence, it was a transforming moment for the industry. No longer would investors pay their own commissions or transaction costs when they shopped there. Rather, the managers whose funds were effectively listed for sale would pay for what came to be known as “shelf space,” a marketing concept if ever there were one. Few observers expressed concern that the ability to make what appeared, however incorrectly, to be “free” transactions would lead to a rise in market timing or to a high-turnover mentality by investors; or that all of the fund’s shareholders were effectively paying for the shelf space, even though few of them were actually utilizing the service.

It wasn’t long, of course, before the national brokerage houses that did not view themselves as supermarkets demanded similar treatment. As the going rate for shelf space rose—from 0.20% to 0.25%, to 0.30%, to what now seems to be 0.40%, firms that never considered their funds to be “products” sold at “supermarkets” soon found that sharing their management fees with brokers was a requisite to receiving the broker’s support. Somewhere along the way, an important line was crossed, and stewardship was on the wrong side of it. So three points for funds that take no part in paying for shelf space, one or two points (depending on how much they pay) for funds that are paying for broker-dealer space, and zero for funds that are spending their shareholders’ resources (directly or indirectly) in supermarkets.

7. Sales Loads. It is no secret that the fund industry, like the financial services industry in general, is in many respects a marketing business. Indeed, this industry would be but a fraction of its present size today had there not been securities brokers and salesmen to carry our message to investors who otherwise might have learned about mutual funds not only far later, but with far less information. Although the costs of information obviously detract from the returns that investors earn, that service is essential for most investors, and it clearly has value. But I’m not at all sure that we are getting the right information to investors. We focus on past performance, knowing that, if it is not negatively correlated with future returns, the linkage is anything but causal. Financial advisers should instead focus the information they provide on factors such as sound asset allocation, broad diversification, cost, and simplicity.

For owners of the funds involved in the scandals—especially if they have purchased them recently—what should they do if they have already paid the sales commissions? If they decide to liquidate their holding, one obvious choice would be reinvesting in funds that don’t carry commissions. They’ve already bought the ticket for their investment voyage, and they shouldn’t have to pay for it again. They won’t have to pay again if they seek out no-load funds that meet the standards of stewardship that have been, to some degree at least, ignored in the funds they held. Even if they are subject to penalty sales charges when they redeem, it’s probably better to move out of the fund rather than continuing to pay 12b-1 fees for years more.

In broad generalization, no-load funds are less engaged in salesmanship than load funds. After all, the purpose of the load is to compensate a salesman. So let’s think about awarding three stewardship points to pure no-load funds, and drop it to two points if a small 12b-1 fee is charged. While there are a number of good fund managers with reasonable sales charges and 12b-1 fees, the fact is that these costs constitute a significant drag on returns. So consider awarding no stewardship points for these funds; if other factors such as low expense ratios and low turnover so dictate, award one point.

8. Shareholder Stability. During my first two decades in this business, market timing was anathema. Shareholder redemptions averaged about 8% of assets, suggesting a holding period of 12-plus years for the average investor. But the redemption rate then began to steadily rise, reaching an average of 41%(!) in 2002, a holding period of just 2.4 years for the average fund investor.

Part, but only part, of the increase was accounted for by illegal late-trading and by the unethical time-zone trading that I noted at the outset. (The average redemption rate for international funds has typically run to some 100% per year) But most of the increase is shareholder turnover of funds is accounted for by the fact that we’ve created an industry dominated by funds with relatively narrow styles and funds focusing on concentrated sectors; funds, if you will,
bought by investors, not to be held for an investment lifetime, but bought to be sold at some point along the way. That the investors who engage in such strategies are playing a loser’s game (unless, of course, they’re given free rides through late trading and time zone trading!) is only the tip of the iceberg. The problem is that substantial trading by fund owners generates costly portfolio turnover for the fund itself, a disservice to its long-term investors who trusted the fund managers to be their faithful stewards.

The proof of the pudding is in the eating. If funds are heavily focused on stewardship, they ought to have redemption rates, in today’s historically high-fund-turnover environment, of no more than about 20% per year. (About 1800 funds, or one-fifth of the total, meet this test.) While that seems like a high number to me, let’s award these funds three stewardship points, with two points to funds with rates somewhat below the current 41% norm—say 21% to 35%—and a stingy one point if the redemption rate stays below 60%. But zero points when rates exceed that level, along with a warning that when redemptions exceed 100% of fund assets there must be heavy market timing going on. (There are, unbelievably, 1,133 mutual funds in that category!) If you want to subtract a stewardship point for firms that countenance—or even encourage—high levels of trading activity, or add a point for those that have voluntarily imposed a redemption fee on short-term trades, don’t hesitate to do so.

9. Limitations on Fund Size. Most fund managers are in the business of gathering the maximum possible amount of assets, the better to increase their fee revenues. Yet it is no secret that in the field of investment management, “nothing fails like success.” Promoted aggressively, funds with apparently superior performance records draw large amounts of capital, and eventually get muscle-bound. Their investable universe shrinks; the impact of their portfolio transactions on the prices at which they buy and sell stocks rises; and their ability to recover the glory of their early days gradually vanishes.

A perfect example is a fund (call it Fund X) whose glory days in 1978-1983—an annual return of 26% above the Standard & Poor’s 500 Stock Index—carried its assets from $30 million to nearly $2 billion. Table 5. It did fine in the next ten years, too (+3½% a year ahead of the Index), growing to $32 billion by 1993, on the way to $100 billion in 1999. But its performance excellence had long since come to an end. In seven of the past ten years, Fund X has fallen short of the S&P Index return; its cumulative return during the decade has lagged the Index by 2% per year.

In cases like this, salesmanship is clearly in the driver’s seat, with any notion of stewardship seemingly powerless to influence the speed and direction of the automobile. While some funds (for example, index funds and other funds with very low turnover) are relatively immune to the burdens of dinosaurism, most funds are not. So let’s award three stewardship points to firms that announce in advance any limitations on assets (and then live by them!), two points to those that frequently close funds to new investors so as to preserve their investment characteristics for existing shareholders; just one point to firms that have closed funds, even if infrequently and too late, or, even worse, have announced the closing in advance, a sure-fire way to increase cash flow; and a zero to organizations that allow their funds to grow without concern for the obvious consequences.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Assets $ billion</th>
<th>Return vs. S&amp;P 500</th>
<th>Year</th>
<th>Total Assets $ billion</th>
<th>Return vs. S&amp;P 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>0.03</td>
<td>+25.2%</td>
<td>1991</td>
<td>19.1</td>
<td>+10.6%</td>
</tr>
<tr>
<td>1979</td>
<td>0.04</td>
<td>+33.3%</td>
<td>1992</td>
<td>22.3</td>
<td>-0.6%</td>
</tr>
<tr>
<td>1980</td>
<td>0.05</td>
<td>+37.5%</td>
<td>1993</td>
<td>31.7</td>
<td>+14.6%</td>
</tr>
<tr>
<td>1981</td>
<td>0.1</td>
<td>+21.3%</td>
<td>1994</td>
<td>36.4</td>
<td>-3.1%</td>
</tr>
<tr>
<td>1982</td>
<td>0.5</td>
<td>+26.6%</td>
<td>1995</td>
<td>53.7</td>
<td>-0.8%</td>
</tr>
<tr>
<td>1983</td>
<td>1.6</td>
<td>+16.1%</td>
<td>1996</td>
<td>54.0</td>
<td>-11.3%</td>
</tr>
<tr>
<td>1984</td>
<td>1.9</td>
<td>-4.2%</td>
<td>1997</td>
<td>63.8</td>
<td>-6.8%</td>
</tr>
<tr>
<td>1985</td>
<td>4.1</td>
<td>+11.4%</td>
<td>1998</td>
<td>83.5</td>
<td>+5.0%</td>
</tr>
<tr>
<td>1986</td>
<td>7.4</td>
<td>+5.1%</td>
<td>1999</td>
<td>105.9</td>
<td>+3.0%</td>
</tr>
<tr>
<td>1987</td>
<td>7.8</td>
<td>-4.3%</td>
<td>2000</td>
<td>93.1</td>
<td>-0.2%</td>
</tr>
<tr>
<td>1988</td>
<td>9.0</td>
<td>+6.1%</td>
<td>2001</td>
<td>79.5</td>
<td>+0.2%</td>
</tr>
<tr>
<td>1989</td>
<td>12.7</td>
<td>+2.9%</td>
<td>2002</td>
<td>56.7</td>
<td>-1.6%</td>
</tr>
<tr>
<td>1990</td>
<td>12.3</td>
<td>-1.4%</td>
<td>2003</td>
<td>65.0</td>
<td>-3.6%</td>
</tr>
</tbody>
</table>

ANNUAL RETURNS

<table>
<thead>
<tr>
<th></th>
<th>Fund X</th>
<th>S&amp;P 500</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-1983</td>
<td>41.7%</td>
<td>15.4%</td>
<td>+26.3%</td>
</tr>
<tr>
<td>1984-1993</td>
<td>18.4%</td>
<td>14.9%</td>
<td>+3.5%</td>
</tr>
<tr>
<td>1994-2003</td>
<td>9.1%</td>
<td>11.1%</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

10. Experience and Stability of Portfolio Managers. A critically important part of measuring stewardship is what happens behind the scenes of
fund management. Do the managers act like, well, stewards? It is not easy to measure trust and confidence and integrity, but information about the age, education, professional experience, and tenure of fund executives and portfolio managers is widely available. In general, it’s a good idea for investors to cast their lot with veterans who have worked through a market cycle or two, who can clearly articulate their philosophy and strategy, and who manage portfolios that give living expression to those factors. Typically, it seems to me, such managers also focus on the long term, whether they emphasize what are (rather crudely) called value stocks or growth stocks.

The Morningstar statistical service reports that the typical portfolio manager runs a fund for just five years, which seems a long way from stewardship to me. Consider a typical shareholder who owns five funds—and holds them, however unlikely that may be, over an investment lifetime. Employing 50 different portfolio managers over 50 years seems much more like a choice of “products” than the selection of a trustee. So I’d reserve three stewardship points for managers with something like 15 years of experience and tenure, with no points (except under special circumstances) for those with less than seven years on duty.

More than incidentally, while we’ve come to think about “portfolio managers” as our prime consideration, please don’t ignore funds run by teams or investment committees. We now know that many seemingly well-qualified portfolio manager stars have turned out to be comets, burning out after a few years in the limelight. In a real sense, the wisdom of the collective seems more suggestive of stewardship (especially since the individual “stars” are often promoted with dazzling salesmanship), so let’s award a full three points to funds run by experienced investment committees.

11. Insider Ownership. Put me squarely in the camp of those who prefer that fund directors, executives, and portfolio managers “eat their own cooking” by investing importantly in the shares of the funds they manage. A few firms even take this philosophy to a (wonderful!) extreme, requiring their insiders to invest all of their liquid assets in their funds. Three stewardship points for them, and for others who approach that goal in spirit, if not quite in letter. After all, we can expect stewards to have special concern in the administration of their own investments. If there’s little or no ownership by the fund insiders, zero points.

Unfortunately, there’s little solid information on this vital issue, with no requirement that management company officials and portfolio managers disclose either their holdings of fund shares or their fund share transactions. (As the scandals have shown, some fund managers were even engaging in market timing in the shares of the very funds they were managing!) I hope the Securities and Exchange Commission will soon require this disclosure; in the meantime, investors and their advisers ought to ask for this information. If the answer is “none of your business,” it may be prudent to consider investing in funds in which the stewards are not only willing, but eager, to disclose their policies, their holdings, and their transactions alike.

As to fund holdings by directors, a serious, indeed inexcusable, information gap also exists. Somehow the Investment Company Institute persuaded the SEC to exempt fund directors from disclosing the precise number of shares they own, a standard which must be met by all other public corporations. Rather, fund directors need only disclose the range of their holdings: none; $10,000 or less; $10,000 to $50,000; $50,000 to $100,000; over $100,000, both for the fund and for all funds in the group. What earthly good does for an investor to learn that a trustee has spread a modest $100,000 (or more?) among 100 or more funds in the group? That may be better than no disclosure at all. But barely! The sooner we revise the regulations to provide full and accurate disclosure, the better.

And last, but hardly least:

12. Organization of Managers. When I came into this industry 53 years ago, virtually all fund management companies were small partnerships or corporations, closely held by their principals. They were but a step removed from the funds they managed, and most looked at themselves as trustees, stewards of the assets entrusted to their care, members of the profession of investment management. By 1958, this sound structure was on the way out. Public offering of management company shares became possible, and numerous management company IPOs quickly followed. At that point, managers began to focus on the price of their stock and the interest of their new public owners. Their earlier focus on the welfare of their fund shareholders had to compete with their focus on the welfare of their own owners, which would be fostered by building the fund group’s asset base, increasing revenues, marketing aggressively, and making as much profit as they could.
But that was only the beginning. Gradually, both public and private management companies were purchased by giant financial conglomerates—banks and brokers and insurance companies, U.S. and international—whose principal interest was not the return on the capital of the fund investors they served, but on the return on their own capital. If a bank bought a fund manager for $1 billion, by golly, it would earn its, say, 12% cost of capital—$120 million per year—come hell or high water. As a result, professional interests—the stewardship of shareholder assets—were superseded by business interests—salesmanship, marketing, and revenues. Asset gathering and manager profits became the name of the game, and the industry’s values changed accordingly.

Today, among the 50 largest fund managers, 36 are owned by giant financial conglomerates and seven are publicly-held, with six remaining private. Table 6. The remaining firm (Vanguard) is mutually owned by the funds it manages (and therefore by their shareholders). You are free to agree or disagree with my awarding three stewardship points to firms that choose the mutual structure (so far, Vanguard is all alone!), two points to the firms that remain private, and one point for those that are publicly-held. And if you agree that the spirit of stewardship is vastly diminished when a fund manager is owned by a conglomerate that is far removed from the fund’s operations, a score of zero seems the right judgment for funds operating under that structure.

If you decide to move away from the fund groups that have betrayed your trust, these twelve elements of the Stewardship Quotient are worthwhile in considering the selection of replacement funds. Of course you need not accept the precise standards and point ratings suggested in this essay. Make your own judgments; even add some elements of your own. But I hope that you will agree that you will be best served if you focus on firms that strike a balance between stewardship and salesmanship—a balance between professional standards and business pressures—in which the interests of fund shareholders are maintained at the highest possible level. After all, this is your money we’re talking about.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>1951</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td>Mutual</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Public</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

*Representing 85% of industry assets in each year.

The Stewardship Quotient list may also have a broader use than merely providing a series of checkpoints for the selection of new funds by investors who have been burned by investing in the scandal-ridden firms. Even investors who have not been burned but are otherwise dissatisfied with their fund holdings can use these checkpoints for the selection of the funds that they will rely on in the coming years and decades.

Investors will find few fund firms that have SQs higher than 150, and many that have SQs below 50. It is a very safe bet, in my hardly objective view, that the former group will deliver significantly higher returns than the latter during the decade that lies ahead. Even if they don’t take action, investors should write down the scores for the funds they own today and are considering for tomorrow, and calculate their Stewardship Quotients. When 2014 rolls around, let’s compare notes.
### Exhibit 1.

#### The Stewardship Quotient* 

<table>
<thead>
<tr>
<th>SQ Scores</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Management Fees and Operating Expense Ratios</td>
<td>Very Low</td>
<td>Below Average</td>
<td>Roughly Average</td>
<td>Above Average</td>
<td></td>
</tr>
<tr>
<td>2. Equity Portfolio Turnover</td>
<td>Under 30%</td>
<td>30%-60%</td>
<td>60%-100%</td>
<td>Over 100%</td>
<td></td>
</tr>
<tr>
<td>3. Equity Diversification</td>
<td>Owns total market</td>
<td>Large cap-blend</td>
<td>Other style box</td>
<td>Sector Fund</td>
<td></td>
</tr>
<tr>
<td>4. Marketing Orientation</td>
<td>Sells what it makes</td>
<td>Gives in, but rarely</td>
<td>Gives in sometimes</td>
<td>Makes what will sell</td>
<td></td>
</tr>
<tr>
<td>5. Advertising</td>
<td>None</td>
<td>Limited</td>
<td>Extensive</td>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td>6. Pays for Shelf Space</td>
<td>No</td>
<td>Broker-Dealer Low pay</td>
<td>Broker Dealer High pay</td>
<td>Supermarkets</td>
<td></td>
</tr>
<tr>
<td>7. Sales Commissions</td>
<td>Strictly no-load</td>
<td>No-load with small 12b-1 fee</td>
<td>Low-load</td>
<td>Substantial sales loads +12b-1 fees</td>
<td></td>
</tr>
<tr>
<td>8. Shareholder Stability (Redemption Rate)</td>
<td>Under 20%</td>
<td>21-35%</td>
<td>36%-60%</td>
<td>Over 60%</td>
<td></td>
</tr>
<tr>
<td>9. Limitations on Fund Size</td>
<td>Clear size limits</td>
<td>Frequent fund closings</td>
<td>Rare fund closings</td>
<td>No limits on size</td>
<td></td>
</tr>
<tr>
<td>10. Experience, Stability of Portfolio Managers</td>
<td>More than 15 years</td>
<td>10-14 years</td>
<td>7-10 years</td>
<td>Less than 7 years</td>
<td></td>
</tr>
<tr>
<td>11. Insider Ownership of Fund Shares</td>
<td>Large, in many funds</td>
<td>Moderate, in many funds</td>
<td>Moderate, in few funds</td>
<td>Small or none</td>
<td></td>
</tr>
<tr>
<td>12. Organization of Manager</td>
<td>Mutual</td>
<td>Privately owned</td>
<td>Publicly owned</td>
<td>Conglomerate subsidiary</td>
<td></td>
</tr>
</tbody>
</table>

| Total Points |     |

\[ \text{SQ}^* = \left( \frac{\text{Total score}}{18} \right) \times 100 \]

* Stewardship quotient for manager = (Total score ÷ 18) x 100
The literature traditionally assumes that a portfolio manager who expends costly effort to generate information makes an unrestricted portfolio choice and is paid according to a sharing rule. However, the revelation principle provides a more efficient institution. If credible communication of the signal is possible, then the optimal contract restricts portfolio choice and pays the manager a fraction of a benchmark plus a bonus proportional to performance relative to the benchmark. If credible communication is not possible, an additional incentive to report extreme signals may be required to remove a possible incentive to underprovide effort and feign a neutral signal.


The defaulted and distressed, public and private debt market in the United States performed exceptionally well in 2003. The NYU Salomon Center Defaulted and Public Bond Index increased by over 85% and the Defaulted Bank Loan Index by 27.5% – the Combined Index surged by 49.3%. Record annual performance was recorded for all three indexes.

The recovery rate on defaulted bonds (price just after default) rebounded impressively from a low of 25 cents on the dollar in 2002 to over 45 cents in 2003; likewise, the weighted average bank loan recovery rate in 2003 increased substantially. New defaulted bonds in 2003 fell to about $38.5 billion in 2003 from the record total in 2002, resulting in a slightly below average, but still substantial default rate of 4.66%.

The face value size of the Combined Defaulted and Distressed, Public and Private debt market decreased by $356 billion from the record high year of $942 billion, one year earlier, to about $585 billion – a reduction of 38%. The market size decrease in 2003 from $513 billion to $369 billion was a more modest 28%. The drop was completely a function of the dramatic reduction in distressed debt (bonds selling at more than 1,000 basis points over ten-year US Treasuries). Still, a market size of $369 billion is far greater than the estimated demand from dedicated distressed investors of $70-80 billion.

Expected default rates in 2004 and 2005 are 3.5% and 4.1% respectively. The size of the Defaulted and Distressed debt market is expected to continue its fall by 14% in 2004 to $319 billion (market value) and to rise a bit in 2005 to $328 billion.


The recent paper by Goetzmann et al. (2002) suggests that fund managers subject to a performance review have an adverse incentive to engage in portfolio strategies that have the unfortunate attribute that they can expose the fund investor to significant downside risk. Weisman (2002) uses the term “informationless investing” to describe this behavior, and argues that these strategies are “peculiar to the asset management industry in general, and the hedge fund industry in particular” and that these strategies “can produce the appearance of return enhancement without necessarily providing any value to an investor.” Just how prevalent are these practices in the fund management business? On the basis of a unique database of daily transactions and holdings of a set of forty successful Australian equity managers, we find evidence that individual managers do engage in this trading behavior, particularly when they form part of a team within a large decentralized money management operation and are compensated in the form of an annual bonus based on performance. This result is broadly consistent with the theoretical and empirical results of the principal agent literature which highlight the adverse consequences for the long term objectives of principals where agents are compensated based on observable short term performance.

It is also consistent with recent results from the behavioral finance literature which suggest that agents narrowly focus on individual security gambles independent of overall portfolio value considerations.


Portfolio theory must address the fact that, in reality, portfolio managers are evaluated relative to a benchmark, and therefore adopt risk management practices to account for the benchmark performance. We capture this risk management consideration by allowing a pre-specified shortfall from a target benchmark-linked return, consistent with growing interest in such practice. In a dynamic setting, we demonstrate how a risk averse portfolio manager optimally under- or over-performs a target benchmark under different economic conditions, depending on his attitude towards risk and choice of the benchmark. The analysis therefore illustrates how investors can achieve their desired gain/loss characteristics for funds under management through an appropriate combined choice of the benchmark and money manager. We consider a variety of extensions, and also highlight the ability of our setting to shed some light on documented return patterns across segments of the money management industry.

Money managers are rewarded for increasing the value of assets under management, and predominantly so in the mutual fund industry. This gives the manager an implicit incentive to exploit the well-documented positive fund-flows to relative-performance relationship by manipulating her risk exposure. In a dynamic portfolio framework, we show that as the year-end approaches, the ensuing convexities in the manager’s objective induce her to closely mimic the index, relative to which her performance is evaluated, when the fund’s year-to-date return is sufficiently high. As her relative performance falls behind, she chooses to deviate from the index by either increasing or decreasing the volatility of her portfolio. The maximum deviation is achieved at a critical level of underperformance. It may be optimal for the manager to reach such deviation via selling the risky asset despite its positive risk premium. Under multiple sources of risk, with both systematic and idiosyncratic risks present, we show that optimal managerial risk shifting may not necessarily involve taking on any idiosyncratic risk. Costs of misaligned incentives to investors resulting from the manager’s policy are economically significant. We then demonstrate how a simple risk management practice that accounts for benchmarking can ameliorate the adverse effects of managerial incentives.


Because a money manager learns more about her skill from her management experience than outsiders can learn from her realized returns, she expects inefficiency in future contracts that condition exclusively on realized returns. A fund family that learns what the manager learns can reduce this inefficiency cost if the family is large enough. The family’s incentive is to retain any given manager regardless of her skill but, when the family has enough managers, it adds value by boosting the credibility of its retentions through the firing of others. As the number of managers grows the efficiency loss goes to zero.


We examine how investor sentiment affects the cross-section of stock returns. Theory predicts that a broad wave of sentiment will disproportionately affect stocks whose valuations are highly subjective and are difficult to arbitrage. We test this prediction by studying how the cross-section of subsequent stock returns varies with proxies for beginning-of-period investor sentiment. When sentiment is low, subsequent returns are relatively high on smaller stocks, high volatility stocks, unprofitable stocks, non-dividend-paying stocks, extreme-growth stocks, and distressed stocks, consistent with an initial underpricing of these stocks. When sentiment is high, on the other hand, these patterns attenuate or fully reverse. The results are consistent with theoretical predictions and are unlikely to reflect an alternative explanation based on compensation for systematic risks.


Using a unique dataset of private equity funds over the last two decades, this paper analyzes the investment behavior of private equity fund managers. Based on recent theoretical advances, we link the timing of funds’ investment and exit decisions, and the subsequent returns they earn on their portfolio companies, to changes in the demand for private equity in a setting where the supply of capital is ‘sticky’ in the short run. We show that existing funds accelerate their investment flows and earn higher returns when investment opportunities improve and the demand for capital increases. Increases in supply lead to tougher competition for deal flow, and private equity fund managers respond by cutting their investment spending. These findings provide complementary evidence to recent papers documenting the determinants of fund-level performance in private equity.


The methodology of Bai and Ng (2002, 2003) for decomposing large panel data into systematic and idiosyncratic components is applied to both returns and turnover. Combining this with a GLS-based principal components approach, we demonstrate that their procedure works well for both returns and turnover despite the presence of severe heteroscedasticity and non-stationarity in turnover of individual stocks. We then test Lo and Wang’s (2000) theoretical model’s restriction that returns and turnover should have the same number of systematic factors. This is strongly rejected by the data, suggesting stock price and trading volume may not be compatible under the existing multi-factor asset pricing-trading framework. We also demonstrate that several commonly used turnover measures may underestimate the price impact of stock trading.

Edwin J. Elton, Martin J. Gruber and Christopher R. Blake, “The Adequacy of Investment Choices Offered By 401K Plans,” SC-AM-03-10

Defined-contribution plans represent a major organizational form for investors’ retirement savings. Today more than one third of all workers are enrolled in 401K plans. In a 401K plan, participants select assets from a set of choices designated by an employer. For over half of 401K-plan participants, retirement savings represent their sole financial asset. Yet to date there has been no study of the adequacy of the choices offered by 401K plans. This paper analyzes the adequacy and characteristics of the choices offered to 401K-plan participants for over 400 plans. We find that, for 62% of the plans, the types of choices offered are inadequate, and that over a 20-year period this makes a difference in terminal wealth of over 300%. We find that funds included in the plans are riskier than the general population of funds in the same

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categories. We study the characteristics of plans that are associated with adequate investment choices, including an analysis of the use of company stock, plan size, and the use of outside consultants. When we examine one category of investment choices, S&P 500 index funds, we find that the index funds chosen by 401K-plan administrators are on average inferior to the S&P 500 index funds selected by the aggregate of all investors.

Jacob Boudoukh, Matthew Richardson, Robert Whitelaw and Richard Stanton, “The Valuation of Mutual Fund Contracts.” SC-AM-03-09

Combining insights from the contingent claims and the asset-backed securities literatures, we study the economics of value creation in the asset management business. In particular, we provide a theoretical model and a closed form formula for the value of fund fees in the presence of the well-known flow-performance relation, giving rise to interesting nonlinearities and volatility-related effects. The theoretical model sheds light on the role of fees, asset growth, asset and benchmark volatility, and the intensity of the flow-performance relation. To better understand the role of changing fund characteristics such as age and size on the fund value and fund risk, we estimate the empirical relation between returns and flows conditional on these characteristics for various asset classes. We study these effects using Monte Carlo simulations for various economically meaningful parameter values for specific asset classes. Measuring value as a fraction of assets under management, we find that both value and risk, systematic and idiosyncratic, decline in size and age. In addition, value is a complex, non-monotonic function of the fee charged on the fund.

Ingo Walter, “Conflicts of Interest and Market Discipline Among Financial Services Firms” October 2003. SC-AM-03-08

There has been substantial public and regulatory attention of late to apparent exploitation of conflicts of interest involving financial services firms based on financial market imperfections and asymmetric information. This paper proposes a workable taxonomy of conflicts of interest in financial services firms, and links it to the nature and scope of activities conducted by such firms, including possible compounding of interest-conflicts in multifunctional client relationships. It lays out the conditions that either encourage or constrain exploitation of conflicts of interest, focusing in particular on the role of information asymmetries and market discipline, including the shareholder-impact of litigation and regulatory initiatives. External regulation and market discipline are viewed as both complements and substitutes – market discipline can leverage the impact of external regulatory sanctions, while improving its granularity though detailed management initiatives applied under threat of market discipline. At the same time, market discipline may help obviate the need for some types of external control of conflict of interest exploitation. JEL G21, G24, G28, L14. Keywords: Conflicts of interest. Financial regulation. Financial services. Banking.


The suspension of trading on the New York Stock Exchange for more than four months following the outbreak of World War I fostered a substitute market on New Street as a source of liquidity. The New Street market suffered from a lack of price transparency because its transactions were not disseminated on the NYSE ticker and its quotations were blacklisted at the leading newspapers. This paper shows that despite the impaired information flow and the somewhat wider bid-ask spreads compared with the New York Stock Exchange, New Street offered economically meaningful liquidity services. The absence of price transparency turned an individual stock’s reputation for liquidity into an important variable in explaining the structure of bid-ask spreads on New Street.


There is an ongoing debate in the literature about the apparent weak or negative relation between risk (conditional variance) and return (expected returns) in the aggregate stock market. We develop and estimate an empirical model based on the ICAPM to investigate this relation. Our primary innovation is to model and identify empirically the two components of expected returns—the risk component and the component due to the desire to hedge changes in investment opportunities. We also explicitly model the effect of shocks to expected returns on ex post returns and use implied volatility from traded options to increase estimation efficiency. As a result, the coefficient of relative risk aversion is estimated more precisely, and we find it to be positive and reasonable in magnitude. Although volatility risk is priced, as theory dictates, it contributes only a small amount to the time-variation in expected returns. Expected returns are driven primarily by the desire to hedge changes in investment opportunities. It is the omission of this hedge component that is responsible for the contradictory and counterintuitive results in the existing literature.


This paper studies the association between the market’s expectations of Saddam Hussein’s fall from power, reflected in "Saddam contract" prices, and stock prices, oil prices and exchange rates. During the war, a rise in the probability of Saddam’s fall, which also indicated a speedy end to the war, was positively and significantly associated with stock prices, strengthened the dollar against the Euro, and lowered oil prices. Before the war, a rise in the probability of Saddam’s fall, which may have also indicated the probability of a costly war breaking out, lowered stock prices, which adjustment gradually to this information.

Jacob Boudoukh, Matthew Richardson, YuQing Shen, and Robert F. Whitelaw, "Do Asset Prices

The behavioral finance literature cites the frozen concentrated orange juice (FCOJ) futures market as a prominent example of the failure of prices to reflect fundamentals. This paper reexamines the relation between FCOJ futures returns and fundamentals, focusing primarily on temperature. We show that when theory clearly identifies the fundamental, i.e., at temperatures close to or below freezing, there is a close link between FCOJ prices and that fundamental. Using a simple, theoretically motivated, nonlinear, state dependent model of the relation between FCOJ returns and temperature, we can explain approximately 50% of the return variation. This is important because while only 4.5% of the days in winter coincides with freezing temperatures, two-thirds of the entire winter return variability occurs on these days. Moreover, when theory suggests no such relation, i.e., at most temperature levels, we show empirically that none exists. The fact that there is no relation the majority of the time is good news for the theory and for market efficiency, not bad news. In terms of residual FCOJ return volatility, we also show that other fundamental information about supply, such as USDA production forecasts and news about Brazil production, generate significant return variation that is consistent with theoretical predictions. The fact that, even in the comparatively simple setting of the FCOJ market, it is easy to erroneously conclude that fundamentals have little explanatory power for returns serves as an important warning to researchers who attempt to interpret the evidence in markets where both fundamentals and their relation to prices are more complex.


Conditional factor models allow both risk loadings and performance over a period to be a function of information available at the start of the period. Much of the literature to date has allowed risk loadings to be time-varying while imposing the assumption that conditional performance is constant. We develop a new methodology that allows conditional performance to be a function of information available at the start of the period. This methodology uses the Euler equation restriction that comes out of the factor model rather than the beta pricing formula itself. The Euler equation restrictions that we develop can be estimated using GMM. It is also possible to allow the factor returns to have longer data series than the mutual fund series as in Stambaugh (1997). We use our method to assess the conditional performance of funds in the Elton, Gruber and Blake (1996) mutual fund data set. Using dividend yield to track the business cycle, we find that conditional mutual fund performance moves with the business cycle, with all fund types except growth performing better in downturns than in peaks. The converse holds for growth funds, which do better in peaks than in downturns.

Antonios Sangvinatsos and Jessica Wachter, "Does the Failure of the Expectations Hypothesis Matter for Long-Term Investors?" January 2003. SC-AM-03-02

We consider the consumption and portfolio choice problem of a long-run investor when the term structure is affine and when the investor has access to nominal bonds and a stock portfolio. In the presence of unhedgeable inflation risk, there exist multiple pricing kernels that produce the same bond prices, but a unique pricing kernel equal to the marginal utility of the investor. We apply our method to a three-factor Gaussian model with a time-varying price of risk that captures the failure of the expectations hypothesis seen in the data. We extend this model to account for time-varying expected inflation, and estimate the model with both inflation and term structure data. The estimates imply that the bond portfolio for the long-run investor looks very different from the portfolio of a mean-variance optimizer. In particular, the desire to hedge changes in term premia generates large hedging demands for long-term bonds.


Using a unique dataset of private equity funds over the last two decades, this paper analyzes the cash flow, return, and risk characteristics of private equity. Unlike previous studies, we have detailed cash flow data for each fund, rather than aggregate or accounting returns. We also know the exact timing of investments and capital returns to investors and the number and types of companies each fund invested in. We document the draw down and capital return schedules for the typical private equity fund, and show that it takes several years for capital to be invested, and over ten years for capital to be returned to generate excess returns. We provide several determining factors for these schedules, including existing investment opportunities and competition amongst private equity funds. In terms of performance, we document that private equity generates excess returns on the order of five to eight percent per annum relative to the aggregate public equity market. Moreover, while we estimate the betas of the private equity funds’ portfolios to be greater than one, we show that on a risk-adjusted basis the excess value of the typical private equity fund is on the order of 24 percent relative to the present value of the invested capital. One interpretation of this magnitude is that it represents compensation for holding a 10-year illiquid investment.
CONFERENCES

Forthcoming

FINANCIAL ECONOMETRICS: IN CELEBRATION OF ROBERT ENGLE’S WORK, 2003 NOBEL LAUREATE IN ECONOMICS, September 30-October 1, 2004

THE CREDIT MARKET: RECENT ADVANCES IN CREDIT RISK RESEARCH, May 19-20, 2004

NBER MARKET MICROSTRUCTURE MEETING, May 7, 2004

NATIONAL FORUM ON CORPORATE FINANCE, May 6-7, 2004

Recent

NYU STERN FIVE-STAR CONFERENCE ON RESEARCH IN FINANCE, December 5, 2003

Moody’s Corporation & the Salomon Center, NYU Stern School of Business present

THE CREDIT MARKET: RECENT ADVANCES IN CREDIT RISK RESEARCH

NYU STERN SCHOOL OF BUSINESS
MAY 19-20, 2004

May 19
7:30  Registration & Continental Breakfast

8:15  OPENING REMARKS
John Rutherfurd, Jr. - Chairman and CEO of Moody’s Corporation
Edward I. Altman - Director of the Credit and Debt Markets Research Program at the Salomon Center

8:40  THE INFORMATION CONTENT OF DEBT AND EQUITY PRICES moderated by Hayne Leland, UC Berkeley
(i) Structural Models of Credit Risk Are Useful: Evidence from Hedge Ratios on Corporate Bonds, Stephen Schaefer, London Business School
Discussed by Pierre Collin-Dufresne, UC Berkeley
(ii) Credit Ratings and Stock Liquidity, Elizabeth Odders-White, University of Wisconsin
Discussed by Jeremy Stein, Harvard University

10:20  Refreshment Break

10:40  PERSPECTIVES ON KEY RESEARCH CHALLENGES IN CREDIT MARKETS
Ken Singleton, Stanford University
Stephen Kealhofer, cofounder KMV-Moodys

11:50  Lunch
Keynote Address: Robert C. Merton – 1997 NOBEL LAUREATE, Harvard University, A retrospective look at 30 years of the Merton model
Introduction by Stephen Figlewski, Director of the Derivatives Research Project at the Salomon Center

1:20  EXPECTED DEFAULT LOSS moderated by Stuart Turnbull, University of Houston
(i) Multi-Period Corporate Failure Prediction with Stochastic Covariates, Darrell Duffie, Stanford University
Discussed by Bob Geske, UCLA
(ii) Understanding the Recovery Rates on Defaulted Securities, Viral Acharya, London Business School
Discussed by Roger Stein, KMV-Moodys

3:00  Refreshment Break

3:20  CREDIT RISK MODELING
I. Overview by David Lando, Copenhagen Business School
(ii) Correlated Defaults in Reduced-Form Models, Fan Yu, University of California, Irvine
Discussed by Philipp Schonbucher, ETH Zurich
II. PERSPECTIVES
(i) Hedging Bank Loan Portfolios, Oldrich Vasicek, cofounder KMV-Moodys
Dynamic Conditional Corelation Models of Tail Dependence, Robert Engle - 2003 NOBEL LAUREATE, NYU Stern School of Business

5:30  Cocktail Reception

May 20
7:45  Continental Breakfast

8:15  THE IMPLICATIONS OF BASEL II
I. Overview by Michael Gordy, Federal Reserve Board of Governors
II. Loan Pricing under Basel Capital Requirements, Rafael Repullo, CEMFI
Discussed by Jean-Charles Rochet, Toulouse University
III. PERSPECTIVES
Objectives of Basel II and Implications for Credit Markets, Darryl Hendricks, FRB of New York

9:45  Refreshment Break

10:00  CREDIT DEFAULT SWAPS moderated and discussed by John Hull and Alan White, University of Toronto
(i) An empirical analysis of the dynamic relationship between investment grade bonds and credit default swap, Ian Marsh, Bank of England
(ii) The Credit Default Swap Market: Is Credit Protection Priced Correctly? Francis Longstaff, University of California, Los Angeles

11:40  PERSPECTIVES ON THE ROLE OF INTERNAL AND EXTERNAL RATINGS IN THE CREDIT PROCESS
Edward I. Altman, NYU Stern School of Business
Richard Cantor, Moody’s Investor Service

12:50  Conference Close
NYU STERN FIVE STAR
CONFERENCE ON RESEARCH IN FINANCE

December 5, 2003

Sponsored by Deutsche Bank and NYU Salomon Center

Organized by Yakov Amihud and Kose John, New York University

Program participants from
Columbia University
New York University
Princeton University
University of Pennsylvania
Yale University.

The conference brought together finance researchers from several northeastern universities. We invited colleagues at all schools in the northeast, and others interested in current finance research, to a day of research presentations in finance. Faculty from each of the program participant schools presented one of the papers on the program.

Chair: Richard Kihlstrom, University of Pennsylvania


Discussant: Arturo Bris, Yale University

Chair: Robert Hodrick, Columbia University

“Investor Sentiment and the Cross-Section of Stock Returns,” Malcolm Baker, Harvard University and Jeffrey Wurgler, New York University

Discussant: Geoffrey Tate, University of Pennsylvania

Chair: Ivo Welch, Yale University

“Equilibrium Asset Prices under Imperfect Corporate Control,” James Dow, Gary Gorton, University of Pennsylvania and Arvind Krishnamurthy, Yale University

Discussant: Thomas Philippon, NYU

Chair: Jose Scheinkman, Princeton University


Discussant: Robert Kimmel, Princeton University

Chair: Peter Garber, Deutsche Bank Research

“Simple Forecasts and Paradigm Shifts” Harrison Hong, Princeton University and Jeremy C. Stein, Harvard University and NBER

Discussant: Lawrence Glosten, Columbia University
DERIVATIVES 2003: REPORTS FROM THE FRONTIERS

January 31, 2003

Organized by Stephen Figlewski, Professor of Finance, NYU Stern School of Business

The knowledge base supporting the world of derivatives and risk management—let us say "rocket science"—keeps expanding rapidly. In the academic world, theoretical advances have made it possible to construct models that are significantly more complex technically than what was attempted just a few years ago. We now have the technology to deal with instruments that are subject to time varying volatility, Poisson jumps, time and state-dependent correlations, and more. At the same time, innovation in the real world is also proceeding at a remarkable pace. New classes of securities, such as Collateralized Debt Obligations, are transforming the derivatives landscape.

This conference brought together an extraordinary group of speakers, all of whom have made important contributions, both theoretical and practical, in this area. The conference title "Reports from the Frontiers" captures the idea that our objective is at least partly to learn about what is happening at the forefront of academic research and real world practice from those who are on the spot.

The speakers in the morning sessions covered a range of important frontier topics from the academic perspective, discussing their own work and also describing the current state of the art in the area. The keynote speaker, Robert Litzenberger, shared his thoughts on several timely topics, gained from his years as Head of Firmwide Risk Management at Goldman Sachs, following an extremely productive academic career as a finance professor at Wharton and Stanford.

In the afternoon, we heard from practitioners in several areas about the latest developments in their respective fields. The final session of the conference brought together some of the most respected people in finance to discuss their views on what new ideas they expect will have the greatest impact on the real world.

THE FRONTIERS IN THEORY I: MODELING THE PRICE PROCESS
Chair: Emanuel Derman, Columbia University

“Modeling Volatility,” Robert Engle, NYU Stern School of Business

“Modeling Distributions: Extreme Value Theory and Copulas,” Paul Embrechts, Dept. of Mathematics, ETH Zurich

“Option Pricing using Integral Transforms,” Peter Carr, NYU Courant Institute of Mathematical Sciences

THE FRONTIERS IN THEORY II: MODELING DERIVATIVE SECURITIES
Chair: Raghu Sundaram, NYU Stern School of Business

"Likelihood Estimation for Continuous Time Models in Finance," Yacine Ait-Sahalia, Princeton University

“Mortgages and Mortgage-Backed Securities,” Francis Longstaff, UCLA

“Modeling Interest Rate Risk, Equity Risk, and Default Simultaneously,” Sanjiv Das, University of Santa Clara

Luncheon Keynote Address: Robert Litzenberger
(Emeritus Professor, Wharton, and retired Partner, Goldman Sachs)
"Issues Related to Incompleteness, Transaction Costs, Counterparty Credit, and Moral Hazard"

THE FRONTIERS OF DERIVATIVES AND RISK MANAGEMENT PRACTICE
Chair: Michel Crouhy, CIBC

Presentations by practitioners on
Regulation—Richard Lindsey, Bear Stearns
Credit Risk—Jeffrey R. Bohn, Moody’s KMV
Derivatives Markets—David Krell, International Securities Exchange

PANEL DISCUSSION: CONNECTING THE ACADEMIC FRONTIERS TO THE REAL WORLD
Chair: Mark Kritzman, Windham Capital Management

Sanford Grossman, Quantitative Financial Strategies, Inc.
Robert Litzenberger, Wharton (Emeritus) and retired Partner, Goldman Sachs
Stephen Ross, M.I.T. Sloan School
Myron Scholes, Oak Hill Capital Management
Robert Shiller, Yale University
The NYU Salomon Center was founded in 1972 as a vehicle for focusing high quality research attention on the global financial services industry and its principal institutions. Among its activities, the Center develops new research sources for financial analysis; conducts high profile conferences for academics, practitioners and regulators; and distributes newsletters to the relevant community highlighting important research developments in specific areas covered by the Center.  The Center benefits from an outstanding external academic board, including Myron Scholes (1997 Nobel Laureate in Economics and past AFA president), Sanford Grossman (1987 John Bates Clark Medal in Economics and past AFA president), and Robert Litzenberger (past AFA president).

Currently, the center, under the direction of Matthew Richardson, is involved in seven research initiatives, each run by a Stern School of Business professor:

- **Asset Management** directed by Martin J. Gruber (Chairman of CREF Board and past AFA President) -- focuses on examining and explaining the existence, management and performance of pools of capital, concentrating on institutions such as pension funds, mutual funds, and hedge funds.
- **Financial Econometrics** directed by Robert F. Engle (2003 Nobel Laureate in Economics) – focuses on the application of econometrics to the field of finance with special attention to the development of techniques for risk management, derivatives pricing, and market performance.
- **Macro Finance** directed by Thomas Sargent (Senior Fellow at Hoover Institution) – focuses on the interaction between the macroeconomy and financial markets.
- **Credit and Debt Markets** directed by Edward I. Altman (past FMA President) – focuses on the efficient functioning and dynamic nature of the world’s credit and debt markets.
- **Derivatives Research Project** directed by Stephen Figlewski (Founding Editor, Journal of Derivatives) – focuses on theoretical and applied research on derivative instruments and markets, risk management and financial engineering.
- **Corporate Governance** directed by David Yermack – focuses on interactions between managers, shareholders, debtholders, and other groups such as auditors, bankers, and government regulators.
- **Financial Institutions** directed by Alexander Ljungqvist – focuses not only on ‘traditional’ banking questions, such as the regulation of commercial banks and the monetary transmission channels between the banking sector and the real economy, but also on the role and efficiency of investment banks and private equity funds in helping companies raise capital.

The Center funds its activities through the support of Corporate Associates. (See front cover for a current list.) For a nominal annual fee that is tax deductible, corporate associates receive several benefits beyond philanthropy towards one of the preeminent research centers in finance. Specifically, they are provided (i) free attendance at high profile conferences held by the Center (examples of which are provided on pages 28 to 31), (ii) unique access to Stern faculty via periodic internal conferences in which faculty and associates discuss and present research developed for each initiative, (iii) timely delivery of newsletters and other reports of the Center, (iv) advertisement as a sponsor in newsletters and links via the Center’s website, and (v) free access to certain data outputs from the Center. For example, the Credit and Debt Markets program maintains a monthly time-series of indices on defaulted bond and bank loan prices since the 1980s that is available free of charge to associates. With the recent development of a database facility, this type of offering is an expanding part of the Salomon Center.

If you would like more information, please contact us at Corporate Associates Program, Salomon Center, NYU Stern School of Business, Suite 9-160, 44 West 4th Street, NY, NY 10012; telephone number (212) 998 – 0700; fax: (212) 995-4220; email address salomon@stern.nyu.edu