Market Efficiency, Fees and Competition: Are Investment Managers Pricing Themselves Out of the Market?

The potential payoff from active management has waned over the decades – but the price of active management is at or near its all-time high. What does this seeming paradox imply for the future of investment management?

Alpha Prospects

Those of us launching our careers in the 1960s would never have believed a Greek letter would become the mantra of investment management. The money management establishment of that era dismissed beta, just emerging from the grove of academe as, well, academic. Yet today, talk of *alpha* – beta's elusive companion, that precious portion of *extra* return – is everywhere. Managers claim to harvest it, separate it from beta, and transport it about. Consultants and advisors tout their ability to pick "alpha-generating" managers of every stripe. Pension fund trustees hear they ought to stretch for alpha to meet hopeful actuarial assumptions. And the trade press and commercial conference sponsors avidly sustain the buzz. Pursuit of alpha, it seems, has become the *Zeitgeist* of our times.

Is alpha potential on the rise? Let's begin with a historical perspective.

The 1950s saw the beginning of a sustained effort to evaluate the efficient market hypothesis (EMH). By 1970, the academic consensus was that the market was quite efficient.[1]

At least one prominent practitioner of that era threw his lot in with the consensus. In 1976, Benjamin Graham said:

> I am no longer an advocate of elaborate techniques of security analysis in order to find superior value opportunities. This was a rewarding activity, say, 40 years ago, when our textbook "Graham and Dodd" was first published; but the situation has changed a good deal since then. In the old days any well-trained security analyst could do a good professional job of selecting undervalued issues through detailed studies; but in the light of the enormous amount of research now being carried on, I doubt whether in most cases such extensive efforts will generate sufficiently superior selections to justify their cost. To that very limited extent I'm on the side of the "efficient market" school of thought now generally accepted by the professors.[2]

Consider now the conditions that give rise to market efficiency. Is there reason to believe, *a priori,* the market has become more or less efficient in the last 30 years?

Information. At the heart of an efficient market is freely available information. The last 30 years have witnessed what may be the greatest period of innovation in information technology in the history of mankind. The personal computer arrived on the scene in the mid-1970s. Before that analysts relied on hand-held calculators, and those of us analyzing balance sheets in the 1960s used a slide rule for compound interest and present value calculations. Leveraging abundant and versatile computing power has been the advent of the Internet – a development of staggering proportions in its own right – and the creation of vast electronic databases. Within our

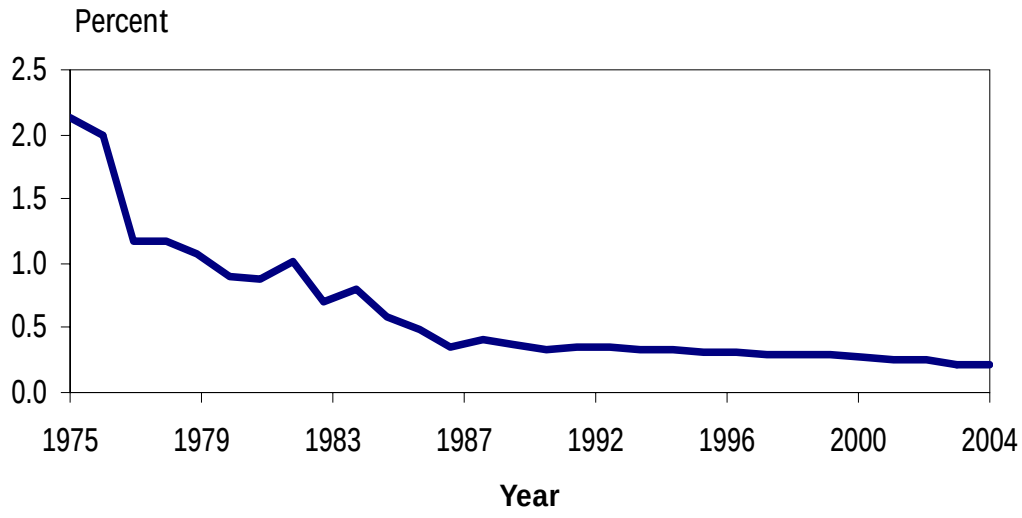
industry, information technology has its own distinctive manifestations, such as the ubiquitous Bloomberg screen.

Communication. Fiber optics and satellite-based systems have revolutionized communication in the last 30 years. In days of old, there was no fax, no cable news, no cell telephone, no e-mail, no Blackberry. International calling was crude and prohibitively expensive. Today, inexpensive, instantaneous, global communication is pervasive.

Frictions. The EMH is predicated on the absence of frictions that might preclude trading that would otherwise eliminate mispricing. The advent and refinement of derivatives during the past 30 years has had a profound effect on reducing market frictions of various types. Contractual innovations such as futures, options, and swaps have reduced transaction costs and enabled risk-sharing in entirely new ways.

Transaction costs for common stock trades have fallen significantly and steadily since the New York Stock Exchange eliminated fixed minimum commission rates in May 1975. Figure 1 presents an estimate of one-way trading costs for U.S. equities from 1975 through 2004.[3] Trading costs are roughly 10% of their level prior to the advent of negotiated rates. The merger of traditional trading venues with electronic ones that is occurring now promises further reductions in transaction costs.

Figure 1
One-Way U.S. Equity Trading Costs as a Percent of Trade Value
1975-2004



Source: Wermers (2000); Greenwich Associates

Institutional Ownership and the Rise of Arbitrage.

It has been shown that the prevalence of security mispricing is inversely related to institutional ownership of shares.[4] Thus, the extent of institutional ownership is itself an index of market efficiency. According to the New York Stock Exchange, 7% of the outstanding shares of common stock were held by institutions in 1950. The figure rose to 28% in 1970, and today it stands at fully 50%.[5]

More than 7000 hedge funds represent a new class of institutional investor. Hedge funds are highly opportunistic traders, often using leverage to exploit mispricing. Many operate in a different dimension from traditional long-only managers, with arbitrage-like (long-short) trading as the focal point. There can be little doubt that the accumulation of close to a trillion dollars by these funds during the last 15 years has contributed to making markets more efficient.

Extraordinary advances in information and communication technology, dramatic reductions in transaction costs and other market frictions, and a sizable increase in institutional ownership, including a new breed of opportunistic trader and arbitrageur, suggest an even greater degree of market efficiency than the efficiency we posited 30 years ago. Let's turn to the record.

Empirical Evidence

Many authors examine whether active management successfully exploits whatever security mispricing there might be. Central to this literature are persistence studies, which seek to identify a correlation of fund performance in one period with that of a prior period. These studies have been conducted by scholars all over the world. (See, for example, Allen, Brailsford, Byrd, and Faff, 2002-2003, for a survey.) The preponderance of this literature finds no evidence that top-performing funds in one period repeat in the next.

Cost-recovery studies examine how management fees and transaction costs affect fund performance. Beginning with Jensen (1968), authors have consistently demonstrated that, on average, investment managers underperform their benchmarks by an amount approximately equal to their fees. More recent studies indicate that management expense actually hurts average fund performance *more* than dollar for dollar. (See Carhart, 1997, and Bogle, 1999.)

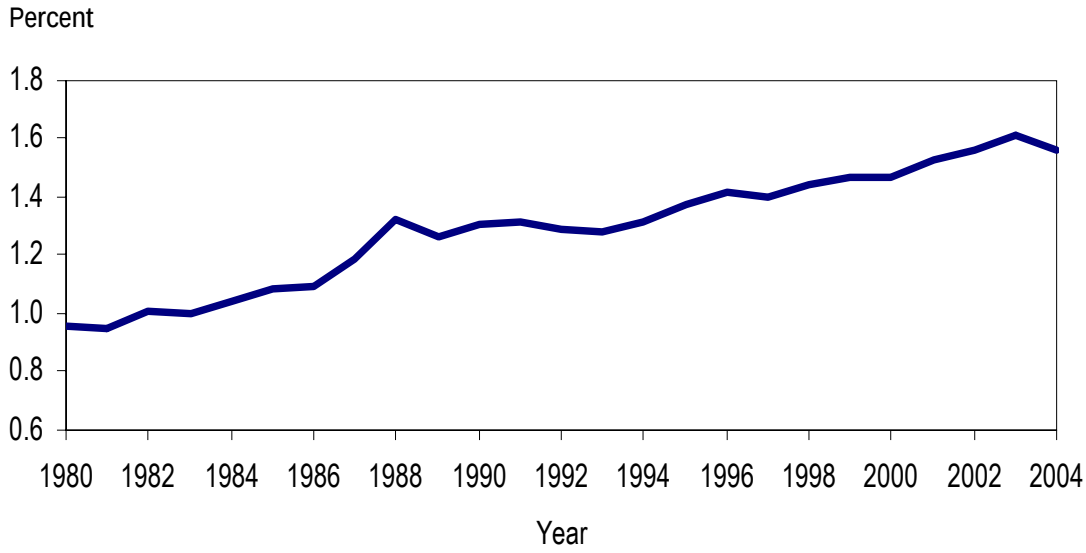
Overall, despite today's alpha mania, there is every indication it has become harder, not easier, to beat the market during the last 30 years.

And Yet the Price of the Product Rises?

The past several decades we have witnessed another pronounced trend, one that at first blush appears to be at odds with vigorously efficient markets and with evidence on manager performance. Namely, the price of active investment products has risen steadily. Figure 2 illustrates the point. Since 1980, the average equity mutual fund expense ratio rose from 0.96% to 1.56%.

Just as striking is the fact that a price increase of this magnitude would occur while revenue soared in an industry characterized by ease-of-entry and minuscule marginal costs. (The dollar-weighted average expense ratio also rose during this period but by a somewhat smaller margin, 0.64% to 0.86 %.)

Figure 2
Average Equity Fund Expense Ratio (Equal Weighted)
1980-2004



Source: Lipper Analytical Services, Inc.

And during the last 15 years, the priciest form of money management – the hedge fund – has flourished. Here management fees are typically 1.5% on top of expense reimbursements, all before the manager takes a sizable share of the profits. Ineichen (2005) estimates that hedge fund industry revenue (including that of funds of funds) has averaged an astounding 5.9% of the value of assets, annually, since 1991.

As a product or service becomes less valuable over time, its price ordinarily declines. But even as efficient capital markets have become arguably more efficient, we have witnessed no downward pressure on the pricing of active management. Why not?

I believe the answer lies in the phenomenal growth in the value of assets to be managed during the last 25 years. In 1980, the aggregate value of investable capital markets worldwide stood at $7.5 trillion. By 2004 the figure was $87.2 trillion.[6] This is an increase of more than 1100%, to represent *real* growth of more than 7% per year over the entire 24-year period.

Accounting in part for this spectacular growth, in the early 1980s interest rates were hitting their all-time high while stocks were extremely cheap; and the extraordinary prosperity of the 1980s and 1990s lay just around the corner. No doubt this will go down in the annals of money management as The Great Era of Asset Gathering.

Today, with interest rates near 4% and stocks yielding less than 2%, few among us expect double-digit investment returns for any extended period in the near future. It is unlikely, in other words, the investment management industry will benefit from the wind of extraordinary asset growth at its back as it did throughout the 1980s and 1990s. And yet we live with a legacy of that era: historically high fee structures brought on by trillions upon trillions of dollars seeking growth during the boom and shelter in its aftermath.

When Are Management Fees Too High?

The economist in me avers that prices freely set are never *too* high (or low); prices merely convey information. With that bow to economic theory, it is also true that the higher the price of investment management, all else the same, the harder it is to deliver a product that will satisfy the investor seeking a *net* gain from active management. Thus, the very *plausibility* of each active investment product varies inversely with the price that attaches to it.

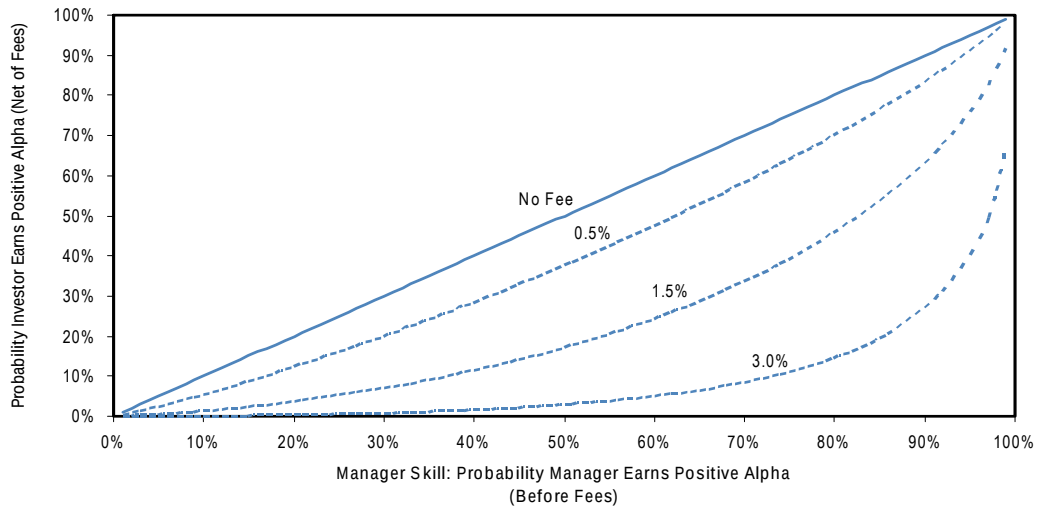
We have devised a simple model to assess the plausibility of investment management fees.[7] Assume active investment risk is normally distributed. Also assume an investor has a horizon of at least ten years, not an unreasonable assumption for most defined-benefit pension funds and certainly reasonable for the vast majority of endowments and foundations, which generally consider themselves perpetual in nature. Indeed, it is a reasonable assumption for most individual investors.

In the model, manager *skill* is represented by the *ex ante* probability that a manager will produce a positive cumulative alpha, after transaction costs but before management fees, over the course of ten years. Investor *success* occurs when the investor, employing a particular manager, realizes a positive alpha *after* fees. In this model, *skill* maps directly into *success,* transformed only by assessment of a constant management expense. As in the real world, cost alone separates manager skill and investor success. (See Appendix 1 for model particulars.)

Figure 3 illustrates how the cost of active management affects the *ex ante* probability of investor success (vertical axis) for a particular degree of manager skill (horizontal axis). In this illustration, active risk is 5%, typical of that of an equity portfolio. The diagonal describes a truly hypothetical case in which the manager charges no fee.

Under the no-fee case, the *ex ante* probability the manager of a portfolio with active risk of 5% produces a positive alpha *before fees* over ten years is identical to the probability that the investor realizes a positive alpha. In other words, the investor realizes whatever alpha the manager earns, in the absence of fees.[8]

Figure 3
As Price Rises, Plausibility Ebbs
(Active Risk of 5%, Time Horizon of 10 Years)



The three curves in Figure 3 describe how imposition of three levels of fees annually (0.5%, 1.5%, and 3.0% of the value of assets) affects the relationship of before- and after-fee probabilities. At higher cost levels, a greater level of skill is required to sustain a given probability of investor success.

Table 1 summarizes these relationships numerically.

Table 1
Likelihood of Success Under Various Fee Rates

Fee	A. Manager Skill Required for Investor to Have at least a 50-50 Chance of Earning a Positive Alpha	B. Investor's Probability of Earning a Positive Alpha when Manager Skill is 0.80
0.5%	0.62	0.70
1.5	0.83	0.46
3.0	0.97	0.15

Column A indicates that for an investor to enjoy an even chance of realizing a positive alpha when paying 0.5%, the manager's required skill level is 0.62. At a fee of 1.5%, the required level of manager skill rises to a very healthy 0.83. At 3.0% per year, the manager's required skill level rises to an inconceivable 0.97.

Column B of Table 1 turns the proposition around, showing the probability that an investor will realize a positive alpha over a decade at various levels of fee by a manager with skill equivalent to a 0.80 probability of producing a positive alpha, before fees. Despite investing with such an extraordinarily skillful manager, the probability that *the investor* can benefit from that skill drops from 0.70 at a fee of 0.5%, to an unappealing 0.46 at 1.5%, and to a mere 0.15 at 3.0%.

Figure 3 and Table 1 illustrate what by now must be obvious: *A good manager can't be "good" irrespective of cost.* And a management fee *is* too high when, despite the manager's ability to earn a positive alpha, the fee level drives the likelihood of investor success unacceptably low.

I do not claim *all* active investment management services are overpriced. There are a number of fine equity mutual funds with expense ratios in the vicinity of 50 basis points. Large institutional investors can establish separate equity portfolios with leading managers for less than 40 basis points. There are even some successful hedge funds with management (base) fees of 50 basis points or less. For every such opportunity, however, there are dozens of others whose pricing, in my judgment, is beyond the pale of plausibility.

The Future

Looking ahead I see four trends.

First, markets will become more efficient yet, as frictions continue to disappear. They will approach the economist's efficient market ideal while never quite reaching it, which is to say imperfections of some type will always be with us. And as long as imperfections persist, the prospect of trading profits will beckon. But actual gains from active management will be as elusive as ever.

Second, facing the dual challenge of market efficiency and high cost, investors will continue to shift assets from active to passive management. Although indexing got its start in the early 1970s, before 1980 passive investment accounted for a negligible percentage of institutional assets. In the last 25 years, passive management of U.S. pension and endowment fund domestic stock assets has steadily risen to 44% of the total. Among public funds, passive investing has gained a 55% market share.[9]

Mutual fund investors have also responded to the challenges of attempting to beat the market by investing passively. According to Bogle (2005, p. 17), index funds "have accounted for more than one-third of cash inflow since 2000 and now represent fully one-seventh of equity fund assets."

Third, some of active management's true believers will shift assets from expensive products to ones that are more reasonably priced. Impetus for this will be the growing realization that high fees sap the performance potential of even skillful managers.

Signs of greater price sensitivity are appearing now. Table 2 summarizes recent years' net cash flow data for large-capitalization, *active* domestic equity mutual funds, sorted into quintiles by expense ratio.

Table 2
Net Cash Flows to Large-Capitalization Active Domestic Equity Mutual Funds
(In $ Billions)

Expense Ratio Quintile	Typical ER Range	1999	2000	2001	2002	2003	2004
1 (highest)	> 2.00%	$21.1	$16.4	($4.4)	($8.3)	($4.4)	($6.2)
2	1.61-2.00	25.0	13.0	(1.3)	(17.9)	(8.0)	(11.7)
3	1.26-1.60	3.2	0.3	(2.5)	(5.9)	4.6	2.1
4	1.00-1.25	0.4	11.2	5.7	(4.9)	0.2	0.2
5 (lowest)	< 1.00	29.8	(1.3)	4.7	(0.3)	32.0	28.4
Total Net Flow		$79.5	$39.6	$2.2	($37.3)	$24.4	$12.8

Source: Strategic Insight, Mutual Fund Research and Consulting, LLC, New York, using Simfund.

In 1999, funds in the top two quintiles of expense ratio took in $46 billion in net cash inflows, compared to $30 billion for the bottom two quintiles. In 2000, the corresponding figures are $29 billion and $10 billion. In 2001, a shift occurred; the top two quintiles had net cash *outflows* of $6 billion, and the two lowest *inflows* of over $10 billion. In 2002, when funds generally experienced significant net cash outflows, the top two quintiles in expense experienced net outflows of $26 billion, while the bottom two had smaller net outflows of $5 billion. Years 2003 and 2004 are similar to one another in that the two most expensive quintiles experienced sizable net cash *out*flows, while the least expensive garnered even larger net *in*flows.

A less pronounced pattern of price-conscious cash flows is evident among small-cap and foreign equity funds. (See Appendix 2.)

A final prediction relates to hedge funds, whose sustained popularity has surprised many. The traditional investment management business and hedge funds have largely stood apart, separated by little more than a cultural divide. Yet both traditional management and hedge funds have the same sole purpose: to make money by exploiting security mispricing. And as hedge funds seek to enlarge their market share while traditional managers defend their own share, it will become increasingly clear that they are competitors.

The competition can be seen as a Hegelian dialectic, advancing from thesis to antithesis to synthesis. The traditional business represents the portfolio management thesis: (1) diversified and stylistic; (2) long only; (3) unleveraged; (4) relatively transparent; with (5) fixed (guaranteed) compensation arrangements; and (6) liquidity for investors. Hedge funds are the antithesis: (1) undiversified and opportunistic; (2) long-short (arbitrage) oriented; (3) leveraged; (4) opaque; with (5) performance-based compensation; and (6) lock-ups for investors. Synthesis will bring about adaptations on both sides.

Some traditional money managers already are focusing on realizing alpha without regard to conventional notions of style; more will follow suit. Some are incorporating long-short techniques or expanded use of derivatives. And lock-ups just might turn up in the traditional discipline in view of the vagaries of arbitrage (the spread on even a good trade can widen before it narrows) and the patience required to invest in less liquid sectors. Significant leverage, however, may not lend itself to money management for institutional clients, most of them fiduciaries acting on behalf of others. Only time will tell.

The synthesis of investment approaches will produce a new generation of institutional investment vehicles. While they will have some key features of hedge funds, these vehicles will have more the *feel* of conventional institutional investment, particularly in two areas: transparency and pricing. Transparency will present both cultural and reporting challenges for some managers. Pricing, whether fixed or contingent, will have to be *plausible,* which to me means base fees a small fraction of those of most hedge fund managers.

Thus, the traditional business faces competition on two sides. On one side, indexing continues to erode traditional manager market share and will exert downward pressure on pricing. On the other, hedge funds have introduced innovations in value-added investing that are difficult to ignore. While hedge funds might begin to provide greater transparency and use leverage more judiciously as they strive to gain broader acceptance, it remains to be seen whether dyed-in-the-wool hedge fund managers will – or even can, at this juncture – reduce charges enough to become plausible choices for the long run.

Interesting times lie ahead.

APPENDIX 1: FEE PLAUSIBILITY MODEL

The Fee Plausibility Model is designed to assess the economic reasonableness of investment management costs. If a manager's fee is consistent with an acceptable probability of success to the investor, conditioned on the investor's estimate of the manager's likelihood of success (*skill*), the fee is said to be plausible.

We assume a normal distribution of manager alpha, and a constant information ratio across levels of active risk. The inputs to the model are specified as follows:

T = investor's time horizon (in years);

σ = active risk of the manager;

F = investment management fee; and

P_B = investor's estimate of the probability that the manager will produce a positive alpha, *before fees*, over the investor's chosen time horizon.

The model's output is the probability the investor will realize a positive alpha, *after fees* (P_A), over the investor's chosen time horizon.

Given the investor's estimate of the probability the manager will produce a positive alpha, *before fees*, and the investor's chosen time horizon, we forecast the implied information ratio, *before fees*, as a numerical approximation of the integral:

$$P_B = \int_{-\infty}^{\text{Implied Information Ratio (Gross of Fees)}} \left(\frac{1}{\sqrt{2\pi}} \times e^{-\frac{z^2}{2}} \right)$$

where z is the value for which we want the distribution.

Essentially, the model takes the probability and solves for the z-value (from a normal distribution with that portion below it) that attains the probability. In Microsoft Excel, using the function NORMSINV(), the syntax for the function is:

$$NORMSINV(P_B) = z\ value$$

We divide the z-value obtained from above by the square root of the investor's time horizon to take into account the square root of time rule.

$$Implied\ Information\ Ratio\ (Gross\ of\ Fees) = \frac{z\ value}{\sqrt{T}}$$

We translate the implied information ratio, *gross of fees*, to implied information ratio, *net of fees*, as follows:

$$\text{Implied Information Ratio (Net of Fees)} = \left(\frac{((\text{Implied Information Ratio (Gross of Fees)} * \sigma) - F)}{\sigma}\right) * \sqrt{T}$$

The probability the investor realizes a positive alpha, *after fees*, over the investor's chosen time horizon is then determined by finding a numerical approximation of the integral (finding the portion of the distribution of information ratio to the left of the implied information ratio, *net of fees*):

$$P_A = \int_{-\infty}^{\text{Implied Information Ratio (Net of Fees)}} \left(\frac{1}{\sqrt{2\pi}} \times e^{-\frac{z^2}{2}} \right)$$

where z is the value for which we want the distribution. The model solves for the probability that attains the z-value in Microsoft Excel, using the function NORMSDIST(). The syntax for the function is:

$$NORMSDIST(z\ value) = P_A$$

The model is available as an electronic spreadsheet from the author (rennis@ennisknupp.com).

APPENDIX 2: Cash Flows to Small-Capitalization and Foreign Mutual Funds

Net Cash Flows to Small-Capitalization Active Domestic Equity Mutual Funds
(In $ Billions)

Expense Ratio Quintile	Typical ER Range	1999	2000	2001	2002	2003	2004
1 (highest)	> 2.17%	$0.0	$1.2	$0.3	$0.5	$0.3	($0.3)
2	1.70-2.17	0.0	0.4	3.5	1.8	1.5	(0.1)
3	1.40-1.69	1.9	9.3	4.9	4.0	4.7	1.8
4	1.15-1.39	0.0	1.8	5.3	5.1	7.7	4.1
5 (lowest)	< 1.15	7.7	2.6	10.2	10.0	13.8	14.0
Total Net Flow		($5.8)	$15.3	$24.2	$21.4	$28.0	$19.5

Source: Strategic Insight

Net Cash Flows to Active Foreign Equity Mutual Funds
(In $ Billions)

Expense Ratio Quintile	Typical ER Range	1999	2000	2001	2002	2003	2004
1 (highest)	> 2.35%	$0.2	$1.1	($0.7)	($0.5)	($0.2)	($0.2)
2	2.35-1.92	0.3	3.3	(1.0)	(0.1)	0.3	1.4
3	1.91-1.51	0.8	3.6	(0.2)	(0.1)	0.7	3.6
4	1.50-1.23	1.0	4.1	1.4	3.7	7.2	10.4
5 (lowest)	< 1.23	3.3	9.4	(2.5)	8.5	10.2	29.0
Total Net Flow		$5.6	$21.5	($3.0)	$11.5	$18.2	$44.2

Source: Strategic Insight

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ENDNOTES

I thank Michael Sebastian for important contributions; Sudhakar Attaluri, Max Kotary, and Kevin Laughlin provided valuable research assistance.

[1] See Roberts (1959), Osborne (1959), Cootner (1964), and Fama (1970).

[2] See Graham (1976).

[3] Data for 1975-1994 are from Wermers (2000), Table V, p. 1683, converting transaction costs as a percent of fund value to one-way costs (with turnover data provided by Wermers). After 1994, the series is extrapolated using per share agency commission rates provided by Greenwich Associates.

[4] See Bartov, et al. (2000), Dennis and Weston (2001), Sias, Starks, and Titman (2002), and Phalippou (2004)

[5] NYSE Fact Book, Holdings of Corporate Equities in the U.S. by Type of Institution (www.nysedata.com).

[6] According to UBS Global Asset Management, Chicago.

[7] Thanks to Michael Sebastian and Sudhakar Attaluri for their assistance in devising the model.

[8] The shapes of the curves shift, of course, if we shorten the time horizon. But chopping the measurement periods into shorter segments does not alter the outcome for an investor who expects to operate for at least ten years, for all the one- or five-year probability distributions must combine to form the same ten-year distribution. Thus what matters is the investor's expected time horizon.

[9] Greenwich Associates, 2004 Greenwich Associates Market Data Trends (www.greenwich.com).