Out of Sight, Out of Mind
The Effects of Expenses on Mutual Fund Flows

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Abstract

We argue that mutual fund investors are more sensitive to salient in-your-face fees, like loads and commissions, than operating expenses. Our empirical analysis of mutual fund flows over the last 30 years yields strong support for our contention. We find consistently negative relations between fund flows and load fees. We also document a negative relation between fund flows and commissions charged by brokerage firms. In contrast, we find no relation (or a perverse positive relation) between operating expenses and fund flows. Auxiliary analyses suggest mutual fund advertising, the costs of which are often embedded in a fund's operating expenses, account for this surprising finding.

Introduction

In June 2000, The General Accounting Office issued the following recommendation:

> Although most industry officials that the GAO interviewed considered mutual fund disclosures to be extensive, others, including some private money managers and academic researchers, indicated that the information currently provided does not sufficiently make investors aware of the level of fees they pay. These critics have called for mutual funds to disclose to each investor the actual *dollar amount* of fees paid on their fund shares. Providing such information could reinforce to investors the fact that they pay fees on their mutual funds and provide them information with which to evaluate the services their funds provide. In addition, having mutual funds regularly disclose the dollar amounts of fees that investors pay may encourage additional fee-based competition that could result in further reductions in fund expense ratios. GAO is recommending that this information be provided to investors.

In December 2000, the Securities and Exchange Commission issued a report recommending "…that information about the *dollar amount* of [mutual fund] fees and expenses be presented in a fund's shareholder reports."

The implicit assumption in the GAO and SEC recommendation is that mutual fund investors are sensitive to the form in which fund expenses are disclosed to investors. Though we cannot test this assumption directly, we can determine whether investors treat various expenses incurred when purchasing a mutual fund differently. In this paper, we focus on whether investors respond differently to load fees, commissions, and operating expenses.

Several academic studies have documented a negative relation between a fund's operating expense ratio and performance (e.g., Gruber (1996) and Carhart (1997)). Thus, it is sensible for investors to eschew the purchase of funds with high operating expenses. Generally, investors pay fees to mutual funds through operating expense ratios applied to assets under management or through load fees charged when investors purchase (or less commonly sell) a mutual fund. When purchasing funds through a broker, investors pay a commission to the broker for some mutual funds, but not for others, which are designated as non-transaction fee (NTF) funds.

In general, how prices are presented to consumers affects their purchase decisions. For example, consumers are more responsive to nominal discounts on large purchases (e.g., $200 off a $2,000 purchase) than to equivalent percentage discounts (e.g., 10% off a $2,000 purchase); for low-priced products, they are less responsive to nominal discounts relative to percentage discounts (Chen, Monroe, and Lou (1998)). Front-end load fees and commissions are both paid when a fund is purchased and generally revealed or obvious in nominal terms on the first statement following the transaction. For example, if an investor buys $100,000 of a fund with a combined front-end load and commission of 3 per cent, the first statement balance of $97,000 will make it obvious that he has paid $3,000 in fees. The nominal costs of operating expenses—which are typically levied as a percentage—are less clear. Suppose our investor's fund charges 1.8 percent annual operating expenses. The monthly charge on a balance of $100,000 will be $150 (15 basis points). However, from one month to the next the volatility of the fund is likely to be ten times this much or more. Comparing the current month's balance to the previous month's will not reveal the nominal cost of operating expenses. Furthermore, the volatility of fund returns masks the effect of operating expenses' steady drain on performance. Thus, while front-end loads and commissions are transparent and thus salient in-your-face expenses for investors, operating expenses are less so. We believe that investors are more sensitive to salient expenses (commissions and load fees) and less sensitive to fees that are paid while they hold the fund (operating expenses).

Tversky and Kahneman (1986) demonstrate that peoples' preferences for states of the world are highly dependent on the frames by which those states are described. Thaler (1985) shows that people prefer the experience of a loss and a larger gain when the loss and gain are integrated rather than separated. Similarly, they prefer to experience one integrated loss rather than two losses of the same combined value reported separately. Front-end loads and commissions constitute losses to investors that are experienced separately from any gains or losses the fund may earn. Fund expenses, on the other hand,

are losses to investors that are first integrated with fund gains and losses before being reported. Therefore, investors are likely to feel these losses less acutely.

Survey and experimental evidence support our contention that mutual fund investors are generally unable to assess the tradeoff between different fees charged by mutual funds. Wilcox (1998) presents 50 consumers who currently invest in mutual funds with profiles of stock mutual funds with different expense ratio and load combinations. He documents that 46 of the 50 study participants overemphasize loads relative to expense ratios. Alexander, Jones, and Nigro (1998) summarize the results of a survey of 2,000 mutual fund investors. They document that less than 20 percent of surveyed investors could give an estimate of the expenses incurred for their largest mutual fund holding. Furthermore, despite empirical evidence to the contrary, 84 percent of respondents believed that mutual funds with higher expenses earned average or above average returns.

There is surprisingly little empirical research on how investors consider expenses when investing in mutual funds. The only empirical work that we are aware of is Sirri and Tufano (1998), who document a negative relation between fund flows and total fund expenses (amortized load fees and operating expenses).

We fill this void in the empirical literature by analyzing new money flowing into mutual funds from 1970 through 1999. We find strong evidence that investors treat the load fees and expense ratios differently. In both univariate and multivariate analyses, we document a significant negative relation between fund flows and load fees. However, there is at best no relation, and at worst a perverse *positive* relation, between fund flows and operating expenses. We present additional analyses that indicate this surprising finding is likely driven by mutual fund advertising. When we disaggregate operating expenses into 12B-1 fees and other operating expenses for the limited sample period for which we have 12B-1 fee data (1993 to 1999), we find the significant positive relation between flows and expenses is confined to 12B-1 fees. In short, consistent with the

findings of Jain and Wu (2000), mutual fund advertising works. We begin our detailed analysis with a description of the data employed, followed by results and conclusions.

I. Data

We obtain data on mutual funds from the Center for Research in Security Prices (CRSP) mutual fund database. Consistent with many prior mutual fund studies, we restrict our analysis to diversified U.S. equity mutual funds. [1] Thus, we exclude from our analyses bond funds, international equity funds, and specialized sector funds. The number of funds meeting these data requirements grows over time. In 1970 465 funds meet these requirements, while in 1998 3533 funds meet these requirements.

We analyze the period 1970 through 1999, since the CRSP database reports total net assets (*TNA*) on a quarterly basis beginning in 1970. Consistent with prior research, we calculate new money as a percentage of beginning-of-period *TNA* as:

$$\frac{TNA_{it} - TNA_{i,t-1}(1+R_{it})}{TNA_{i,t-1}},$$

where R_{it} is the return of fund i in period t. Essentially, this is a percentage growth in new money during period t. Here we assume that new money flows in and out of each fund at the end of each period since we do not know the exact timing of cash flows. For some analyses we use quarterly growth, while for others we use annual growth. The median mutual fund experiences annual growth of 5.3 percent and quarterly growth of 1.2 percent. There is considerable cross-sectional variation in growth. The interquartile range is –21 to 51 percent for annual growth and –3 to 11 percent for quarterly growth.

[1] We select funds that meet any of the following four criteria. First, we select funds with the following ICDI objectives: aggressive growth, growth and income, long-term growth, or total return (only if they have the following Strategic Insight's fund objectives: flexible, growth, or income growth). If ICDI objectives are missing, we select funds with the following Strategic Insight's fund objectives: aggressive growth, growth & income, growth, income growth, or small company growth. If both ICDI and Strategic Insight's objectives are missing, we select funds with the following Weisenberger fund types: AAL, AGG, G, G-I, G-I-S, G-S, G-S-I, GCI, GRI, GRO, I-G, I-G-S, I-S, I-S-G, MCG, SCG, or TR. If all three of the above criteria are missing, we select funds described as common stock funds according to the policy and objective codes.

High growth in new money relative to other funds will generally lead to greater market share.[2]

II. Results

A. Univariate Sorts

Our primary focus is the relation between different forms of expenses and the growth of new money. We begin by presenting basic descriptive statistics for two partitions of our data. In the first partition, we construct deciles on the basis of expense ratios; in the second, we contrast load with no-load funds. For each partition, we calculate mean expense ratios, load fees, and TNA for the sorting year, while we calculate the annual growth of new money and fund returns during the following year.

We calculate the mean monthly return for funds in each partition and two performance measures – the capital asset pricing model (CAPM) alpha and a three-factor alpha. These performance measures are based on the time-series of mean monthly returns for mutual funds within a partition (R_{pt}), where funds are reassigned to partitions annually. The CAPM alpha is the intercept from the following time-series regression:

$$\left(R_{pt} - R_{ft}\right) = \alpha + \beta\left(R_{mt} - R_{ft}\right) + \varepsilon_t \ ,$$

where:

R_{ft} = the monthly return on T-Bills,[3]

R_{mt} = the monthly return on a value-weighted market index,

α = the CAPM intercept (Jensen's alpha),

β = the market beta, and

ε_i = the regression error term.

[2] There are obviously exceptions to this general relationship. For example, a fund with strong performance and negative growth in new money might lose market share – clearly an unusual occurrence since it is well documented that the highest growth in new money occurs for funds with strong performance.

[3] The return on T-bills is from Stocks, Bonds, Bills, and Inflation, 1997 Yearbook, Ibbotson Associates, Chicago, IL.

The Fama-French alpha is the intercept from the three-factor model developed by Fama and French (1993):

$$\left(R_{pt} - R_{ft}\right) = \alpha + \beta\left(R_{mt} - R_{ft}\right) + sSMB_t + hHML_t + \varepsilon_t \ ,$$

where SMB_t is the return on a value-weighted portfolio of small stocks minus the return on a value-weighted portfolio of big stocks and HML_t is the return on a value-weighted portfolio of high book-to-market stocks minus the return on a value-weighted portfolio of low book-to-market stocks.[4] The regression yields parameter estimates of $\alpha, \beta, s,$ and h . The error term in the regression is denoted by ε_t .

The results of this analysis are presented in table 1. In panel A, we present results for mutual funds sorted into deciles on the basis of expense ratios, while panel B contrasts load and no-load funds. Load fees and operating expenses are not perfect substitutes. Though low expense funds have higher load fees than high expense funds, the relation between expenses and loads is far from monotonic. In addition, load funds have higher average expense ratios than no-load funds. Clearly, investors could choose funds with no-loads and low expenses. For example, in May 2001 the Vanguard Index 500 fund charges no load and sports an expense ratio of 18 basis points.

Funds with low expense ratios are dramatically larger than funds with high expense ratios. For example, the funds in the lowest expense decile represent 36 percent of assets in mutual funds, while funds in the highest expense decile represent only one percent. This is consistent with the evidence in Khorana and Servaes (2000), who document fund families with low expenses have higher market share than fund families with higher expenses. Low expenses may attract investors or new money may lead to economies of scale that allow funds to lower expenses. Thus, it is unclear whether low expenses lead to greater market share or greater market share leads to lower expenses.

[4] The construction of these portfolios is discussed in detail in Fama and French (1993). We thank Kenneth French for providing us with these data.

If low expenses lead to greater market share, we would expect growth rates to be higher for funds with low expenses. This is not the case during our sample period. In fact, our crude univariate sorts indicate a nearly monotonic *positive* relationship between expenses and growth rates. Funds with high expenses have the highest growth rates. In contrast, no-load funds, which tend to be smaller than load funds, enjoy higher growth rates than load funds.

In the last three columns of table 1, we present the mean monthly returns for each partition, the CAPM alpha, and the Fama-French alpha. Though there is no discernible relationship between performance and expenses for the majority of funds, investors clearly pay a large price for investing in funds with the highest expenses. These funds underperform by an economically large margin (26 to 37 basis points *per month*).[5] Furthermore, the returns on load funds are not significantly different from the returns on no-load funds. Thus, these results confirm the conventional wisdom that investors should spurn funds with loads or high expenses.

B. Multivariate Analyses

The results based on univariate sorts are insufficient evidence to draw strong conclusions about the relationship between new money and operating expenses or load fees. It is possible that the univariate relationships are driven solely by mean reversion in market share over time – small funds, which have high expense ratios, gain market share, while large funds, which have low expense ratios, lose market share.

To address this possibility, we estimate a series of cross-sectional regressions. The dependent variable in these regressions is the quarterly net flow scaled by beginning of quarter TNA for each diversified U.S. equity mutual fund from the first quarter of 1970 to third quarter of 1999.[6] For each quarter, we regress this dependent variable on a

[5] During our sample period, the CAPM alpha for the average diversified U.S. equity mutual fund is –0.10 percent per month, while the Fama-French alpha is –0.02 percent per month. Neither figure is reliably different from zero.

[6] To reduce the effect of outliers on the coefficient estimates, we winsorize the dependent variables at the 99th percentile. Our results are qualitatively similar when we include these outliers.

series of independent variables, which we describe below. Test-statistics are based on the time-series of coefficient estimates across the 119 quarters.

To control for the effect of performance on fund flows, we include the annual market-adjusted returns on the fund during each of the two years preceding quarter *t* as independent variables in the regressions. The annual market-adjusted return is the annual fund return less the annual return on the CRSP NYSE/ASE/Nasdaq value-weighted index. We include squared market adjusted returns for each of the previous two years to capture the well-documented nonlinear relation between performance and fund flows (Sirri and Tufano (1998), Chevalier and Ellison (1997)). We also include a fund's monthly return standard deviation (measured over the two years leading up to quarter *t*) and the log of total net asset value as independent variables in the regression. Monthly return standard deviation measures the short-term volatility of a fund, while the log of total net asset value provides a measure of fund size. All independent variables in this regression are from the CRSP mutual fund database.[7]

Our primary focus is the relation between fund flows and expenses. First, we replicate the results of Sirri and Tufano (1998) by calculating total expenses for each fund. Total expenses are defined to be the operating expense ratio plus one-seventh of the percentage load fee, if any. This calculation assumes that an investor in a load fund would hold the fund for seven years, thus amortizing the load fee over that holding period. This regression specification obviously assumes that investors respond similarly to load fees and expense ratios. To test our conjecture that they do not, we then estimate regressions that include operating expenses and load fees as separate independent variables. We also include a dummy variable that takes on a value of one if a fund is in the highest expense decile, since it is among these funds where high expenses extract the largest performance penalty. Since we are concerned that our results might be driven by

[7] The CRSP mutual fund database reports zero operating expenses and turnover for a large number of funds. Based on our discussions with CRSP, zero operating expenses likely indicate missing information. Thus, we exclude funds with either zero operating expenses from these analyses. From 1990 to 1995, CRSP reports nonzero operating expense ratios for 87 percent of funds.

small funds, we also estimate these regressions in each quarter for the 50 mutual funds with the largest beginning-of-quarter *TNA*.

The results of this analysis are presented in table 2. Consider first the results for the control variables. The coefficient estimates on the return variables are consistent with the well-documented asymmetry in the relationship between fund flows and performance. The cross-sectional standard deviation of market-adjusted returns for mutual funds is roughly 10 percent. Thus, our regression estimates indicate that fund that beats the market by 10 percent (roughly a one standard deviation event) experiences growth of five percent, while a fund that lags the market by 10 percent shrinks by three percent. A fund that beats the market by 20 percent experiences growth of 12 percent, while a fund that lags the market by 20 percent shrinks by only four percent. Consistent with the evidence in Ellison and Chevalier (1997), these patterns are less pronounced for large funds. There is a negative relationship between monthly volatility and flows. Small funds experience higher growth rates, though this relation disappears when we focus solely on the largest funds.

There is a significant negative relation between total expenses and fund flows, consistent with the results reported by Sirri and Tufano (1998). This relation holds for all funds and analyses that focus on only the largest funds, though the economic significance of the relation is modest. A 100 basis point decrease in total expenses is associated with 0.4 percent growth in new money.

However, when we include operating expenses and load fees as separate independent variables in the regression, the negative relation between total expenses and flows is clearly driven by a significant negative relation between load fees and flows. For all funds, there is no relation between operating expenses and flows, while for large funds there is a *positive* relation. The latter result indicates that the results from the univariate sorts presented previously are not driven solely by small funds. Thus, consistent with our hypothesis that investors respond differently to different expenses, we document a significant negative relation between flows and loads. In contrast, there is, at best, no

relation between operating expenses and flows and, at worst, a perverse *positive* relation between expenses and flows for large funds.[8]

C. The Role of Advertising

The lack of relation between expense ratios and fund flows suggests that mutual funds can raise operating expense ratios with impunity. This is not the case. Mutual fund managers have a choice between pocketing expenses or spending on advertisement. In this section, we present evidence that expenditures on advertising can largely explain the lack of relation between expense ratios and fund flows.

Mutual funds can take out up to 1.25 percent of average daily fund assets each year to cover the costs of selling and marketing shares, an arrangement allowed by the SEC's Rule 12B-1, which was passed in 1980. CRSP provides data on these so-called 12B-1 fees beginning in 1993. For the period 1993 to 1999, we are able to separately identify fees devoted to the selling and market of shares (12B-1 fees) and other fees (non 12B-1 fees). We augment our regression analysis by including these two variables separately as independent variables in the regression.

The results of this analysis are presented in table 3. To provide a baseline for comparison, we also include results for this period using the prior regression specifications. Because of the reduced sample period, the power of the empirical tests is diminished. Nonetheless the coefficient estimates on expense ratios are, as before, reliably positive for the 50 largest funds, while insignificantly different from zero for all funds. The coefficient estimate on load fees is no longer reliably different from zero for all funds, but remains reliably negative for large funds.

The primary variable of interest in this analysis is 12B-1 fees. For all funds and for the 50 largest funds, fund flows are positively related to 12B-1 fees ($p<.01$). In

[8] Though there is a significant negative coefficient estimate on the high-expense dummy in our analysis of large funds, the coefficient estimate is dwarfed by the positive relation between expenses and loads. The highest expense decile has an average expense ratio of 3 percent. This expense ratio, when combined with the coefficient estimate of –0.007 on the high expense dummy, yields a growth rate of 4.8 percent.

contrast, flows are negatively related to other operating expenses (non 12B-1 fees) for all funds, though not reliably so for large funds alone.

Advertising works. Funds with higher expenditures on 12B-1 fees garner more new money. This result is consistent with the findings of Jain and Wu (2000), who document that 294 mutual funds that advertised in Barron's or Money Magazine grew faster than a control group of funds with similar performance prior to the advertising period.

D. Mutual Fund Commissions

With the exception of load fees, mutual fund investors can generally purchase mutual funds directly from the fund complex at zero transaction costs. However, many mutual funds are traded through mutual fund marketplaces at major brokerage firms. When purchasing mutual funds through a broker, a commission is charged for the purchase or sale of some funds, but not others. Generally fund complexes will pay a fee to the broker to gain status as a non-transaction fee (NTF) fund. Laplante (2001) documents that funds traded with NTF status on marketplaces have expense ratios that are 17 to 19 basis points higher than funds not available in the marketplaces. We hypothesize that commissions, like load fees, are salient expenses for many investors and thus expect that funds with NTF status will garner more new money, despite higher average operating expenses.

To test this hypothesis, we analyze the mutual fund purchase and sale decisions of households with accounts at one nationwide discount broker. The data span the period 1991 through 1996 (see Barber and Odean (2000) for a more complete description of these data). Of the 78,000 sampled households, 32,199 (41 percent) had positions in mutual funds during at least one month; the remaining households either held cash or investments in securities other than mutual funds. Seventeen percent of all market value in the accounts was held in mutual funds and 64 percent in individual common stocks. There were over 3 million trades in all securities. Mutual funds accounted for 18 percent

of all trades; individual common stocks accounted for 64 percent. In our sample, 76 percent of fund purchases and 49 percent of sales are NTF funds.

Of the 32,199 households with positions in mutual funds, the average held 3.6 mutual funds worth $36,988. Both of these numbers are positively skewed. The median household held 2 mutual funds worth $12,844 dollars. For these households, the positions in mutual funds and individual common stocks were roughly equal. Forty-two percent of the market value in these accounts was held in mutual funds and 39 percent in individual common stocks. In aggregate, these households held 1,073 mutual funds worth $1.4 billion in December 1996.

For each fund (i) in each month (t), we estimate new money as the value of buys (B) less the value of sells (S) scaled by beginning of month total net assets (TNA): $\frac{B_{it} - S_{it}}{TNA_{i,t-1}}$. Unlike that in the aggregate case, here we know the exact amount and timing of new money. As before, we estimate cross-sectional regressions for each month and then average coefficient estimates across months. We also include a dummy variable that takes on a value of one if a fund can be traded without a commission (a non-transaction fee (NTF) fund).[9]

The results of this analysis are presented in table 4. Consistent with our prior results, we find either no relation or a positive relation between funds' operating expenses and new money for these households. Also consistent with our prior evidence, we find a significant negative relation between load fees and new money.

The primary variable of interest – the NTF dummy – is consistently positive and significant across all regressions. NTF funds garner significantly more new money than funds for which investors pay a commission to buy or sell. This effect is large for our regressions that include all funds – indicating NTF status is particularly important for the

[9] We define a fund as a non-transaction fee fund if more than 90 percent of the trades in the fund were executed without a commission during our sample period.

growth of small funds. Commissions are salient, one-time expenses to which investors attend.

E. Changes in Expenses

We find evidence that mutual fund investors pay attention to salient in-your-face fees like loads and commissions, while they tend to ignore operating expense ratios. Yet low expense mutual funds have greater average market share than high expense mutual funds. Our results indicate that the high market share enjoyed by low expense funds is not a result of new money flowing into low expense funds. Low expense funds may have greater average market share because fund growth *leads* to lower expenses. In this section, we present empirical evidence consistent with this conjecture.

To test whether funds lower expenses as they grow, we calculate the change in operating expenses for all funds and the 50 largest funds. Assets under management can grow by attracting new money or posting strong returns. Since mutual funds enjoy economies of scale (Baumol, Goldfeld, Gordon, and Koehn (1990)), increased assets under management would allow funds to lower expenses. In each year, we regress the change in operating expenses on new money received in the prior two years and the fund's raw return in the prior two years. We include the raw return squared, since it is unlikely that economies of scale are linearly related to fund size. We include changes in load fees as an independent variable, since some funds may increase expenses when they lower or eliminate a load fee. Fund size and the monthly standard deviation of fund returns are also included as control variables.

The results of this analysis are presented in table 5. There is strong evidence that growth *leads* to lower expenses for mutual funds. New money and strong returns lead to lower expenses. For example, the coefficient estimate of –0.00589 on a fund's prior year return indicates that a 10 percent return is associated with an average decrease in the expense ratio of 6 basis points in the following year. When we restrict our analysis to the fifty largest funds, we find no evidence that new money or fund performance predicts

expense changes. This is not surprising, since large funds already enjoy economies of scale.

III. Conclusions

We argue that mutual fund investors are more sensitive to salient in-your-face fees like loads and commissions than operating expenses. Our empirical analysis documents consistently negative relations between fund flows and load fees or commissions, but no relation (or a perverse positive relation) between fund flows and operating expenses. Auxiliary analyses suggest that (successful) mutual fund advertising, the costs of which are often embedded in a fund's operating expense ratio, may contribute to investors' apparent insensitivity to operating expenses.

From 1962 to 1999, the average operating expense charged by mutual funds has steadily increased (see Figure 1), while the proportion of funds charging load fees and the level of those load fees has declined (see Figure 2). While there are no doubt many plausible explanations for this observed pattern, one possibility is that mutual fund managers have figured out that investors are sensitive to load fees, but less so to operating expenses.

Investors would benefit from a greater understanding and awareness of mutual fund expenses. While educating investors is a complex and multifaceted task, our results support the GAO's recommendation that one step in that process could be for mutual funds to disclose to investors the actual dollar amount of fees paid. Expenses that remain out of sight are likely to remain out of mind.

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Table 1: Descriptive Statistics for Mutual Funds sorted by Expense Ratio Deciles (Panel A) and Load vs. No-Load Funds (Panel B)

In Panel A, funds are sorted into deciles on the basis of operating expense ratios in year t-1 from 1969-1998. In Panel B, funds are sorted into deciles on the basis of front-end load fees in year t-1 from 1969-1998. The table presents the number of funds, mean expense ratio, front-end load fee and mean TNA in sorting year (*t-l*). New money as a percentage of TNA and the equally-weighted mean monthly return for each performance decile are for the subsequent year (*t*). CAPM alpha is the intercept from a monthly time-series regression of the mean monthly excess return for each sample partition on the market excess return. Fama-French alpha is the intercept from a monthly time-series regression of the mean monthly excess return for each sample partition on the market excess return, a zero-investment portfolio formed on the basis of firm size, and a zero-investment portfolio formed on the basis of book-to-market ratios.

Decile	Mean Expense Ratio (%)	Mean Load Fee (%)	Mean TNA ($mil.)	Mean New Money (% of TNA)	Mean Monthly Return (%)	CAPM alpha (%)	Fama-French alpha (%)
Panel A: Operating Expense Partition							
1 (Low)	0.47	3.77	844.821	-1.33	1.056	-0.059	-0.004
2	0.72	4.19	456.255	-0.89	1.038	-0.068	-0.006
3	0.85	3.84	301.311	1.57	1.066	-0.057	0.006
4	0.96	4.36	232.351	2.76	1.010	-0.102	-0.035
5	1.07	4.23	151.334	6.76	1.079	-0.037	0.055
6	1.18	4.19	112.470	9.79	1.010	-0.149	-0.052
7	1.34	3.90	93.703	9.37	1.027	-0.119	-0.040
8	1.53	3.10	77.198	17.37	1.055	-0.057	0.026
9	1.76	2.68	46.936	20.82	1.096	-0.029	0.030
10 (Hi)	3.18	1.67	25.037	20.77	0.816	-0.366**	-0.256*
Panel B: Load vs. No-Load Funds							
No-Load	1.07	0	158.479	6.61	1.079	-0.059	0.012
Load	1.13	6.77	296.890	0.04	1.026	-0.098	-0.017

**, * - significant at the 5 or 10 percent level, two –tailed test.

Table 2: Cross-Sectional Regressions of Quarterly New Money on Fund Characteristics: 1970 to 1999

This table reports the mean coefficient estimates and associated t-statistics (in parentheses) from cross-sectional regressions of fund flows on selected fund characteristics from the first quarter of 1970 to the third quarter of 1999. The dependent variable is the quarterly net fund flows scaled by the beginning of quarter TNA. The independent variables include total expenses (TX, operating expenses plus one-seventh of a fund's load fee), operating expenses (X), front load (L), a dummy variable which takes a value of 1 if the fund appeared in the highest expense decile in year t-1(Hi-Expense Dummy), the annual market-adjusted fund return for the previous 12 months (MAR) and the annual market adjusted fund return for the 12 months in year t-2, the annual adjusted fund returns squared for years t and t-1, the monthly standard deviation of the fund's return over the previous 24 months, and log of beginning-of-quarter TNA. The dependent variable is winsorized at the 99th percentile. Test statistics (in parentheses) are based on the time-series of coefficient estimates across 119 quarters.

	All Funds		Largest 50 Funds	
Total Expenses	-0.377**		-0.451***	
(TX_{t-1})	(-2.08)		(-3.19)	
Operating		0.409		1.832***
Expense (X_{t-1})		(0.93)		(4.22)
Load Fee (L_{t-1})		-0.097***		-0.132***
		(-3.43)		(-6.08)
Hi-Expense	0.009	-0.003	-0.002	-0.007*
Dummy	(1.45)	(-0.42)	(-0.68)	(-1.75)
MAR_{t-1}	0.397***	0.401***	0.263***	0.267***
	(11.42)	(11.54)	(10.09)	(9.91)
MAR^2_{t-1}	0.985***	0.961***	0.552***	0.382**
	(8.79)	(8.64)	(3.26)	(2.48)
MAR_{t-2}	0.177***	0.174***	0.168***	0.170***
	(10.31)	(10.28)	(8.39)	(8.96)
MAR^2_{t-2}	0.107	0.060	0.052	-0.083
	(1.15)	(0.65)	(0.30)	(-0.45)
$\sigma(R)$	-0.541***	-0.547***	-0.317*	-0.328**
	(-4.24)	(-4.33)	(-1.81)	(-2.01)
$\ln(TNA_{t-1})$	-0.012***	-0.011***	-0.001	0.002
	(-11.90)	(-9.15)	(-0.79)	(1.65)
Adj. R-Squared	0.129	0.137	0.270	0.290

***, **, * - significant at the 1, 5, or 10 percent level, two –tailed test.

Table 3: Cross-Sectional Regressions of Quarterly New Money on Fund Characteristics: 1993-1999

This table reports the mean coefficient estimates and associated t-statistics (in parentheses) from cross-sectional regressions of fund flows on selected fund characteristics from the first quarter of 1993 to the third quarter of 1999. The dependent variable is the quarterly net fund flows scaled by the beginning of quarter TNA. The independent variables include total expenses (TX, operating expenses plus one-seventh of a fund's load fee), operating expenses (X), front load (L), a dummy variable which takes a value of 1 if the fund appeared in the highest expense decile in year t-1(Hi-Expense Dummy), non-12B expenses, 12B expenses, the annual market-adjusted fund return for the previous 12 months (MAR) and the annual market adjusted fund return for the 12 months in year t-2, the annual adjusted fund returns squared for years t and t-1, the monthly standard deviation of the fund's return over the previous 24 months, and log of beginning-of-quarter TNA. The dependent variable is winsorized at the 99th percentile. Test statistics (in parentheses) are based on the time-series of coefficient estimates across 27 quarters.

	All Funds			Largest 50 Funds		
Total Expenses	-0.655**			-0.192		
(TX_{t-1})	(-2.05)			(-0.67)		
Operating		-0.667			1.389**	
Expense (X_{t-1})		(-1.53)			(2.64)	
Load Fee (L_{t-1})		-0.069	-0.017		-0.169***	-0.188***
		(-1.34)	(-0.31)		(-3.40)	(-3.44)
Hi-Expense	0.008	0.009	0.007	-0.002	-0.003	-0.003
Dummy	(0.85)	(0.79)	(0.73)	(-1.00)	(-1.00)	(-1.00)
$Non12B_{t-1}$			-1.790***			-0.514
			(-3.30)			(-0.62)
$12B_{t-1}$			2.036***			2.838***
			(4.05)			(6.00)
MAR_{t-1}	0.790***	0.793***	0.784***	0.509***	0.537***	0.534***
	(11.50)	(11.37)	(11.54)	(10.02)	(9.46)	(9.76)
MAR^2_{t-1}	1.621***	1.608***	1.670***	-0.043	-0.243	-0.134
	(6.77)	(6.78)	(7.24)	(-0.11)	(-0.63)	(-0.35)
MAR_{t-2}	0.265***	0.265***	0.262***	0.231***	0.251***	0.246***
	(7.80)	(7.86)	(8.40)	(5.42)	(5.72)	(5.35)
MAR^2_{t-2}	-0.035	-0.039	0.078	-0.954**	-1.226**	-1.168**
	(-0.24)	(-0.28)	(0.55)	(-2.01)	(-2.40)	(-2.40)
σ(R)	-1.064***	-1.069***	-1.006***	-0.373	-0.417	-0.159
	(-3.94)	(-3.99)	(-3.91)	(-0.92)	(-1.04)	(-0.39)
$\ln(TNA_{t-1})$	-0.023***	-0.023***	-0.021***	-0.002	-0.001	-0.002
	(-9.87)	(-9.90)	(-11.13)	(-1.10)	(-0.63)	(-0.96)
Adj. R-Squared	0.097	0.097	0.109	0.357	0.380	0.387

***, **, * - significant at the 1, 5, or 10 percent level, two –tailed test.

Table 4: Cross-Sectional Regressions of Monthly New Money from Discount Brokerage Accounts: 1991-1996

This table reports the mean coefficient estimates and associated t-statistics (in parentheses) from cross-sectional regressions of fund flows based on the account transaction data from a U.S. discount brokerage firm on selected fund characteristics from January 1991 to November 1996. The dependent variable, $\frac{B_{it} - S_{it}}{TNA_{i,t-1}}$, is the total value of buys less the total value of sells for fund i scaled by the beginning-of-month TNA. The independent variables include total expenses (TX, operating expenses plus one-seventh of a fund's load fee), operating expenses (X), front load (L), a dummy variable which takes a value of 1 if the fund appeared in the highest expense decile in year t-1(Hi-Expense Dummy), the annual market-adjusted fund return for the previous 12 months (MAR) and the annual market adjusted fund return for the 12 months in year t-2, the annual adjusted fund returns squared for years t and t-1, the monthly standard deviation of the fund's return over the previous 24 months, and log of beginning-of-quarter TNA. The dependent variable is winsorized at the 99th percentile and is multiplied by 1,000,000. Test statistics (in parentheses) are based on the time-series of coefficient estimates across 72 months.

	All Funds		Largest 50 Funds	
Total Expenses	830.45		-1087.71***	
(TX_{t-1})	(0.56)		(-3.33)	
Operating		5865.10**		-675.04
Expense (X_{t-1})		(2.35)		(-0.74)
Load Fee (L_{t-1})		-983.84***		-170.37*
		(-4.21)		(-1.87)
Hi-Expense	78.55*	6.08	6.99	5.73
Dummy	(1.95)	(0.14)	(1.46)	(1.08)
NTF	35.95***	57.98***	6.48*	7.18**
Dummy	(3.16)	(4.95)	(1.87)	(2.27)
MAR_{t-1}	1066.47***	1076.18***	171.59***	202.61***
	(7.40)	(7.54)	(2.95)	(3.31)
MAR^2_{t-1}	2856.97***	2640.54***	758.59	671.87
	(3.35)	(3.16)	(1.23)	(1.09)
MAR_{t-2}	46.34	39.92	173.55***	143.47**
	(0.41)	(0.34)	(2.95)	(2.43)
MAR^2_{t-2}	-728.91	-1074.15	-326.18	-307.41
	(-1.02)	(-1.52)	(-0.69)	(-0.63)
σ(R)	-4800.88***	-4798.46***	-955.96**	-957.91**
	(-3.24)	(-3.25)	(-2.08)	(-2.01)
$\ln(TNA_{t-1})$	11.103	20.11**	0.16	0.34
	(1.46)	(2.22)	(0.08)	(0.22)
Adj. R-Squared	0.082	0.087	0.182	0.198

***, **, * - significant at the 1, 5, or 10 percent level, two–tailed test.

Table 5: Cross-Sectional Regressions of Annual Expense Changes on Fund Characteristics: 1970-1999

This table reports the mean coefficient estimates and associated t-statistics (in parentheses) from cross-sectional regressions of annual expense changes on selected fund characteristics from 1970 to 1999. The dependent variable, $X_t - X_{t-1}$, is the change in expense ratios. The independent variables include change in front-end load fees (L), quarterly fund new money scaled by the beginning of quarter TNA (NM), the annual market-adjusted fund return for the previous 12 months (MAR) and the annual market adjusted fund return for the 12 months in year t-2, the annual adjusted fund returns squared for years t and t-1, the monthly standard deviation of the previous 24 months fund returns, and log of TNA at the beginning of each quarter. The new money variables are winsorized at the 99th percentile.

	All Funds	Largest 50
Change in Loads	0.00142	-0.00707
$(L_t - L_{t-1})$	(0.61)	(-1.36)
New Money (*t-1*)	-0.00051**	-0.00055
NM_{t-1}	(-2.59)	(-1.42)
New Money (*t-2*)	-0.00001	0.00001
NM_{t-2}	(-0.10)	(0.02)
R_{t-1}	-0.00589**	0.00375
	(-2.22)	(0.84)
R^2_{t-1}	0.00976	-0.00481
	(1.30)	(-0.45)
R_{t-2}	-0.00781***	-0.00641
	(-2.83)	(-1.43)
R^2_{t-2}	0.00938	0.00697
	(1.81)*	(0.75)
$\sigma(R)$	-0.00668	0.00552
	(-0.99)	(0.98)
$\ln(TNA_{t-1})$	-0.00001	0.00001
	(-0.35)	(0.30)
Adj. R-Squared	0.0648	0.0810

***, **, * - significant at the 1, 5, or 10 percent level, two –tailed test.

Figure 1: Mean Operating Expense Ratio for U.S. Diversified Equity Mutual Funds: 1962 to 1999

The mean operating expense ratio is calculated based on expense ratios reported in the CRSP mutual fund database for U.S. diversified equity mutual funds and is weighted by fund size. Funds with zero expense ratios are excluded from the calculation of the mean. On average, 97 percent of assets are held in funds with nonzero expense ratios, ranging from 92 percent in 1987 to 100 percent in 1999.

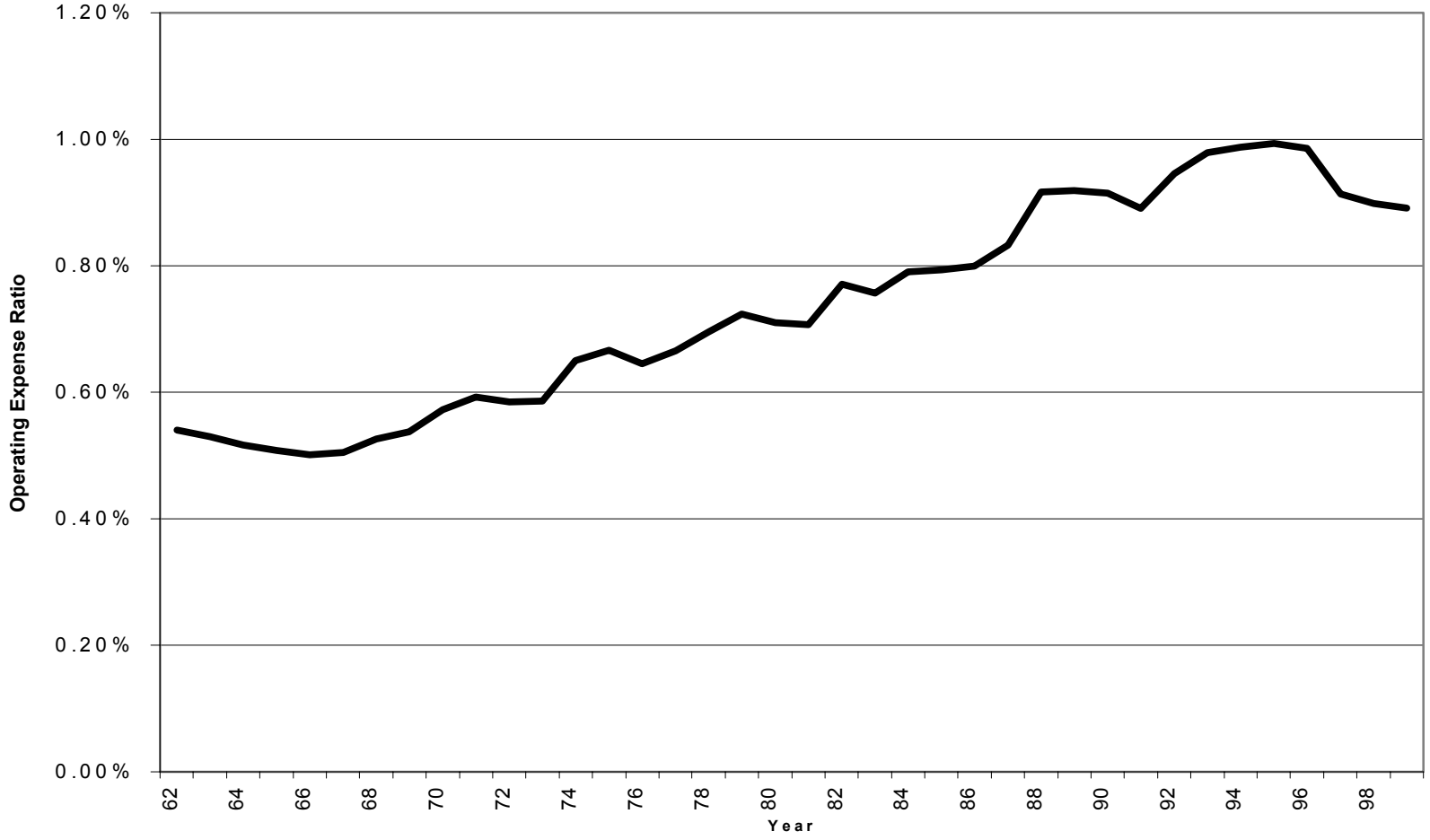

Figure 2: Mean Front-End Load Fee and Percentage of Assets Invested in funds with Front-End Loads for U.S. Diversified Equity Mutual Funds

Front-end load fees are from the CRSP mutual fund database. The mean load fee is based only on funds charging a front-end load and is weighted by fund size.