
INSTITUTIONAL MANAGEMENT FEES: ARE THE ANNUAL FEES YOU PAY FOR MONEY MANAGEMENT APPROPRIATE?

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The authors quantify and analyze the current annual fees in the institutional mutual fund industry. They identify the primary determinants of fund expenses and develop a methodology for gauging whether fees on an institutional investment are consistent with other similar alternative investments. This methodology treats fixed income, domestic equity and international equity funds separately and can be applied to the pricing of potential separate account service providers as well as institutional mutual funds.



Controlling expenses is an important aspect of institutional portfolio management. Though investment returns across managers are highly variable from year-to-year, differences in management fees are comparatively stable over time. This static nature of management fees suggests that attention to expense structures and fee arrangements can provide immediate and tangible benefits to plan sponsors. Our goal in this study is to examine the factors that drive the fees currently being paid by institutional mutual fund investors and to present a unique method for analyzing the fee structure of both existing and potential institutional mutual fund holdings. Our results enable plan sponsors to numerically estimate the fees they might expect to pay given the institutional characteristics of the

fund and fund family, the investment objectives of the portfolio, and the implementation style of the manager. Our analysis not only serves as a guide to measuring institutional mutual fund fees but also provides a template for negotiating with money managers on fee arrangements in separate accounts.

Previous academic research on mutual fund management fees has not separately considered institutional funds. However, many researchers have analyzed fees for the universe of retail mutual funds. This research has generally proceeded along two fronts. One group of studies looks at the relationship of fees to performance. Generally, and not surprisingly, an inverse relationship is uncovered. Several studies parlay this result into a prescriptive methodology for selecting mutual funds.¹ The second strain of academic research examines the determinants of retail mutual fund fees by relating fund-specific characteristics to annual expense ratios. These studies find that a

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Table 1 Ten largest institutional fund families by institutional mutual fund assets under management as of December 2002.

Fund family	Institutional mutual fund assets under management (\$B)	Percent of total institutional mutual fund assets
Vanguard	89.0	16.2
PIMCO	34.4	6.3
One Group	24.3	4.4
SEI	23.5	4.3
Evergreen	19.7	3.6
Fidelity	19.1	3.5
Morgan Stanley	18.6	3.4
DFA	16.3	3.0
First American	14.0	2.5
Janus	13.0	2.4
Total: 10 largest families	271.9	52.6

number of characteristics are drivers of expenses: fund size, family size, fund objective, portfolio turnover, and load structure have all been found to influence the levels of fees of retail mutual funds.²

On the practitioner side, authors frequently mention the importance of fees when discussing the tradeoffs between active and passive management or the economics of the money management business.³ While the identification of next year's alpha-delivering manager is fraught with uncertainty, it is well accepted that each additional basis point saved in fees yields a corresponding increase in alpha, holding all else equal. It is, therefore, imperative to understand what drives fees at the institutional level and what fees are reasonable and appropriate given the observable characteristics of money management firms. In the subsequent analysis, we explore these issues.

1 Institutional fund fees

Our dataset comprises all institutional mutual funds from the January, 2003 edition of Morningstar Principia Pro Plus for Mutual Funds. Morningstar

designates as institutional a "fund that meets one of the following qualifications: (a) has the word 'institutional' in its name, (b) has a minimum initial purchase of \$100,000 or more, or (c) states in its prospectus that it is designed for institutional investors or those purchasing on a fiduciary basis."⁴ As of December 31, 2002, Morningstar covers 2554 institutional funds. These funds represent 227 separate fund families and \$550 billion in assets, or 17% of the assets invested in the universe of mutual funds. Table 1 presents the 10 largest institutional mutual fund families in terms of assets under management. These 10 families manage over half of all institutional mutual fund assets.

To capture the general investment objective of the institutional fund, we divide our sample into three categories based on portfolio composition: domestic stock funds, international stock funds, and bond funds. A portfolio with 75% or more invested in US stocks (foreign stocks; bonds) is designated as a domestic stock (international equity; bond) fund. If a fund does not reach the 75% threshold in any of these three broad asset classes, we place it in a fourth category called "balanced."

Table 2 Distributional characteristics of institutional mutual fund fees measured in basis points.

	Investment objective		
	Bond funds	US equity funds	International equity funds
<i>Location measures</i>			
Mean	67	95	129
Std. deviation	28	37	49
Range	213	287	272
Minimum	7	2	11
Maximum	220	289	283
<i>Quantiles</i>			
90%	98	150	191
75%	79	115	162
50% (median)	65	96	126
25%	50	75	100
10%	36	46	69
Number	603	968	270

Note that our balanced funds may not, in fact, have a balanced fund objective. These could be domestic stock funds, for example, that have allocations resulting from recent extreme out-of-allocation bets, i.e. stock funds with an allocation away from stocks of 25% or more. Because this group of funds may be quite heterogeneous, we do not examine it separately in our subsequent analysis.

Table 2 presents some details of the distribution of fees across the three investment objective categories. As expected, bond funds have the lowest average fees (67 basis points) followed by the domestic (95 basis points) and international (129 basis points) stock funds. These average fees are a good starting point for analyzing the appropriateness of annual money management fees. However, as the range of fees indicates, there is a significant amount of variability in fees across funds. For example, while the average institutional equity fund has an annual expense ratio of 95 basis points, those fees range from 2 to 289 basis points. Of course, we would not necessarily expect every US equity fund to exhibit the

same annual fees. In the next section, we explore the characteristics of funds that drive these observed differences in annual fees.

2 Determinants of fund fees

In previous studies of fund expenses, researchers have grouped institutional funds with retail funds and analyzed them together. LaPlante (2001) includes an institutional dummy variable in a regression analysis of fund expenses, and finds that institutional equity (bond) fund fees are approximately 22 (8) basis points less than retail fund fees. Lesseig *et al.* (2002) find that institutional mutual fund fees are approximately 17 basis points lower than retail funds.

Most studies of retail level mutual fund fees document that some economies of scale are passed on at the fund level — i.e. larger funds generally exhibit lower annual management fees.⁵ Some studies also find economies of scale at the fund

Table 3 Variable descriptions.

<i>Fund and family characteristics</i>	
Log fund assets	Log of net assets in the fund measured in millions of dollars
Log family assets	Log of net assets in all institutional funds (retail funds not included) in the same fund family measured in millions of dollars
Log number of funds in family	Log of number of institutional funds in the same fund family
Log of advisory company age	Log of the age of the oldest institutional fund offered by the fund advisor
Log of minimum purchase	Log of minimum initial purchase amount measured in millions of dollars
12b-1 fee	The maximum 12b-1 fee allowed under the fund's current plan. Most funds charge the maximum allowed.
12b-1 dummy	1 if fund has 12b-1 fee, 0 otherwise
Log number of brokers	Log of the number of brokerage firms that sell shares of the fund
Master-feeder	1 if fund is a master-feeder fund, 0 otherwise. This structure consists of several feeder funds that invest their assets in a single master portfolio that is set up as a partnership. The feeder funds are partners of the master fund.
Bank advised	1 if the fund advisor is a bank, 0 otherwise
Qualified access	1 if the fund only allows certain qualified institutions to invest in the fund, 0 otherwise
No-load retail mate	1 if the fund has a retail share class and that retail share class is a no-load fund, 0 otherwise
No retail mate	1 if the fund has no retail share class, 0 otherwise
<i>Portfolio management characteristics</i>	
Index fund	1 if the fund is an index fund, 0 otherwise
Log turnover ratio	Log of the lesser of portfolio purchases or sales over the year divided by average net assets over the year
Log number of holdings	Log of the number of distinct portfolio securities held in the portfolio
Log portfolio concentration	Log of the percentage of the portfolio that is represented by the ten largest positions.
<i>Investment style characteristics</i>	
Relative price/book ratio (All equity funds)	The average price-to-book ratio of all stocks in the portfolio relative to the Russell 3000 index
Log relative median market cap (All equity funds)	Log of the size of the median stock in the fund's portfolio relative to the median stock in the Russell 3000 index
Percent emerging markets (International equity funds)	For international funds, the percentage of the portfolio that is invested in emerging market equity
Percent high yield debt (Bond funds)	For bond funds, the percentage of the portfolio that is rated BBB, BB, B, or below B by S&P.

family level. Other variables that have been found to have an effect on retail fund expense ratios are fund turnover, fund objective, and fund sales channels. However, interpreting these documented effects in the context of institutional funds is suspect since these variables may affect institutional fund fees differently than they affect retail fund fees. In the following analysis, we study the effects of these and various other fund characteristics on the annual expense ratios charged by institutional mutual funds.

Table 3 details the variables that we hypothesize may have an effect on the level of institutional fund fees. We divide these variables into three categories. The first category of variables controls for characteristics specific to the organizational structure of the fund and the fund family, such as the number of funds in the family and the existence of a 12b-1 fee. The second category of variables details the portfolio management characteristics of the fund, such as the turnover ratio and the number of holdings in the portfolio. Variables in these first two categories are used as explanatory variables in the regressions for the sample as a whole and for our three subsamples: domestic equity, international equity, and bond mutual funds.

Variables in the third category represent characteristics that are unique to the investment style of the mutual fund portfolio. Examples include the price-to-book (P/B) ratio for equity funds, and the percent of high yield debt for bond funds. These variables are subsequently employed as explanatory variables only in regressions of the appropriate fund objective categories. For example, the variable that codes the percentage of high yield debt holdings is included only in the bond fund subsample analysis.

3 All institutional funds

We first explore our sample of institutional mutual funds as a whole. We run ordinary least squares

regressions on two different specifications of institutional mutual fund fees. In the first specification, we follow the existing retail fund fee literature and use the total annual expense ratio as the dependent variable. The total annual expense ratio, in addition to management/advisory fees and operating fees, includes a 12b-1 fee that few institutional funds charge. For our sample, only 296 of 2554 institutional funds charge 12b-1 fees, and these funds are generally small. For this reason, we run a second OLS regression on a variable we call “non-12b-1 expenses,” which is simply the total annual expense ratio minus the current 12b-1 fee authorized for the fund. We find it curious that any institutional investor would submit to paying such fees, given that a number of studies have found that 12b-1 fees are deadweight costs to investors (Trzcinka and Zweig, 1990; Ferris and Chance, 1987; Malhotra and McLeod, 1997).

The first two columns in Table 4 detail the coefficients and associated t -statistics for the total expense ratio regression.⁶ The final two columns present the results for non-12b-1 expenses. A quick perusal of the results reveals that the coefficients and corresponding t -statistics are nearly identical across the two specifications. This finding is consistent with studies that show that the 12b-1 fee is a deadweight cost to investors: including it as an explanatory variable in the first regression is virtually the same as subtracting it from the dependent variable in the second specification.

Most of the variables in the models are significant at traditional levels, and approximately half of the variability in the two measures of institutional mutual fund expenses is explained by our models (R -square statistics of 0.54 and 0.49). In the fund and family characteristics category, we find clear evidence that at least some economies of scale are passed on to institutional investors. These economies derive from assets under management at both the fund and fund family level. On the other

Table 4 Determinants of expenses for full sample of institutional mutual funds.

	Dependent variable			
	Expense ratio		Non-12b-1 expenses	
	Coefficient	<i>t</i> -Statistic	Coefficient	<i>t</i> -Statistic
Intercept	130**	18.1	130**	18.1
<i>Fund and family characteristics</i>				
Log fund assets	-3.9**	-11.0	-3.9**	-11.1
Log family assets	-3.3**	-6.05	-3.2**	-5.89
Log number of funds in family	0.1*	2.30	0.1*	2.30
Log of advisory company age	-2.7	-1.59	-2.7	-1.58
Log of minimum purchase	-0.02	-0.59	-0.02	-0.63
12b-1 fee	0.89**	16.5		
12b-1 dummy			-4.9*	-2.46
Log number of brokers	4.8**	7.34	4.7**	7.34
Master-feeder	-8.7**	-2.86	-8.8**	-2.90
Bank advised	6.1**	3.23	5.9**	3.12
Qualified access	-6.1*	-2.19	-6.3*	-2.29
No-load retail mate	-12.4**	-6.42	-12.6**	-6.53
No retail mate	-8.8**	-5.89	-8.7**	-5.86
<i>Portfolio management characteristics</i>				
Index fund	-42.4**	-12.0	-42.4**	-12.0
Log turnover ratio	3.9**	6.18	3.9**	6.21
Log number of holdings	-2.9**	-3.20	-2.9**	-3.19
Log portfolio concentration	-0.4**	-7.91	-0.4**	-7.91
<i>Fund objective dummy variables</i>				
Bond fund	-14.1**	-7.30	-14.1**	-7.31
Domestic stock fund	12.6**	6.60	12.6**	6.59
International stock fund	46.7**	19.5	46.6**	19.5
<i>R</i> -square		0.54		0.49
Number of observations		2069		2069

Note: * (**) indicates significance at the 10% (1%) level.

hand, we find that as the *number* of funds offered by the family increases, the fee rises. This makes intuitive sense — holding family assets constant, the greater the number of individual funds, the higher the administrative costs that are ultimately passed on in higher fees. Bank-advised funds and funds with high turnover also charge higher annual fees.

Expenses are lower for funds with a master-feeder structure⁷ (defined in Table 3), funds that are limited to certain qualified clients, funds that have a no-load retail mate or no retail mate at all, index funds, funds with a larger number of securities in the portfolio, and funds with a higher concentration of fund holdings.

Table 5 Determinants of expenses for institutional domestic equity funds.

	Dependent variable is non-12b-1 expenses	
	Coefficient	<i>t</i> -Statistic
Intercept	133**	10.2
<i>Fund and family characteristics</i>		
Log fund assets	-2.6**	-5.29
Log family assets	-3.4**	-4.57
Log number of funds in family	0.1	1.05
Log of advisory company age	-2.9	-1.28
Log of minimum purchase	-0.01	-0.25
12b-1 dummy	-3.0	-1.12
Log number of brokers	4.8**	5.48
Master-feeder	-7.8*	-1.77
Bank advised	9.2**	3.44
Qualified access	-4.2	-1.20
No-load retail mate	-12.3**	-4.73
No retail mate	-6.8**	-3.31
<i>Portfolio management characteristics</i>		
Index fund	-37.0**	-8.76
Log turnover ratio	1.7*	1.66
Log number of holdings	-5.6**	-3.45
Log portfolio concentration	0.02	0.04
<i>Fund objective characteristics</i>		
Price-to-book ratio	10.0**	3.04
Log of median market cap	-6.5**	-8.64
<i>R</i> -square	0.50	
Number of observations	883	

Note: * (**) indicates significance at the 10% (1%) level.

As we would expect, the objective of the fund is a strong driver of expense ratios. Bond funds exhibit annual fees that are, on average, 14 basis points less than balanced funds. Both domestic (by 13 basis points) and international (by 47 basis points) equity funds are more expensive than balanced funds. Because institutional fund fees are so strongly influenced by the fund objective and because the effects of other explanatory variables are likely to be intertwined with the fund objective, we

turn next to an analysis of each of the fund objectives separately.

4 Domestic equity funds

Table 5 details the results of the OLS regression of the determinants of fund fees with the sample limited to domestic equity funds. Many of the variables that are significant in the regressions for the

full sample are also important drivers of annual fees when the sample is confined to equity funds. Again we see some economies of scale at both the fund level and family level. The magnitude of these economies is similar. However, increases in fund assets will have a greater effect on fees than increases in assets under management at other funds in the family for two reasons. First, increases in a particular fund's assets have an additional effect — they also increase the family assets. Second, since a fund's assets are less than the family's assets, a like increase in the assets of a fund and a family has a greater impact on the log of fund assets than the log of family assets.

Bank-advised funds are, on average, 9 basis points more expensive than non-bank-advised funds. Small cap styles and growth styles are more expensive than other styles. Index equity funds exhibit expenses that are 37 basis points less than actively managed funds. Finally, we find significant evidence that institutional funds from load fund families are more expensive. Funds with no-load retail mates are 12 basis points less expensive than similar funds with a loaded retail mate; no-load funds may be expected to signal their low-cost status via lower fees. Interestingly, funds with no retail mate at all, though still less expensive than their loaded retail mate counterparts, do not discount their funds by as much (their fees are approximately 7 versus 12 basis points lower than funds with a loaded retail mate), suggesting that perhaps the absence of a retail mate prevents the management of institutional funds from spreading out the cost savings due to some scale economies. Finally, we find that the more brokerage firms that sell the fund, the higher the expenses. This finding is consistent with fund advisors paying for distribution efforts out of their revenues and then passing those expenses on to investors in the form of higher advisory fees.

Unfortunately, the regression coefficients do not tell the full story unless we are able to interpret the economic significance of the continuous as well as

the dummy variables. In Table 6 we present a template based on the significant variables in the equity fund regression specification.⁸ This template illustrates a method for analyzing the appropriateness of expenses on an institutional mutual fund or determining what annual expenses might be considered reasonable in a separately managed account given the determinants of fees in the institutional mutual fund market.

Column (1) in Table 6 repeats the regression coefficients detailed in Table 5. The only difference is that Table 6 includes only those variables that were found to be statistically significant in the regression. Columns (2) through (4) calculate the expected expenses of a representative institutional equity fund. Column (2) presents values of each determinant of expenses. We choose the numerical variables that are close to that of the median domestic equity fund. We assign the dummy variables the value of zero since the majority of funds in the sample have zero for these dummy variables. Column (3) simply takes the inverse of all logged variables in the original regression, in order to allow users to form a more intuitive picture of the characteristics of the fund. For example, the actual level of fund assets conveys more information to most people than the log of fund assets. Finally, column (4) illustrates the contribution to annual expenses we would expect given the level of the variables and the derived regression coefficient of each variable. This contribution is simply calculated as the product of columns (1) and (2). The total expected expense, the sum of all entries in column (4), is 95 basis points. This result is close to the mean and median expense of the domestic equity funds in the sample as we detailed earlier in Table 2.

In columns (5) through (7) we undertake the same analysis for a hypothetical fund or manager to illustrate how this template might be used and how the results might differ from the representative equity fund. In this hypothetical example, we are

Table 6 Template for determining reasonable annual management fees for equity funds.

	Regression coefficient		Representative equity fund		Hypothetical equity fund or manager candidate		Difference: hypothetical minus representative (8) (7) - (4)
	(1)	(2)	(3)	(4) (1)*(2)	(5)	(6) (1)*(5)	
Intercept	133.0			133		133	0
<i>Fund and family characteristics</i>							
Log fund assets	-2.6	4.6	100 M	-12	6.2	500 M	-4
Log family assets	-3.4	7.8	2440 M	-27	8.5	5000 M	-2
Log number of brokers	+4.8	1.9	7	+9	1.1	3	-4
Master-feeder	-7.8	0		0	0	0	0
Bank advised	+9.2	0		0	1	+9	+9
No-load retail mate	-12.3	0		0	0	0	0
No retail mate	-6.8	0		0	1	-7	-7
<i>Portfolio management characteristics</i>							
Index fund	-37.0	0		0	0	0	0
Log turnover ratio	+1.7	4.4	81	+7	2.7	40	-2
Log number of holdings	-5.6	4.5	90	-25	4.6	100	-1
<i>Fund objective characteristics</i>							
Relative price-to-book ratio	+10.0	1		+10	0.5	+5	-5
Log of relative median market cap	-6.5	0	1	0	0.7	2	-5
Expected non-12b-1 expenses				95		74	-21

considering investing in a fund that is larger than the average equity fund and comes from a larger family. The fund is bank-advised, is available through three brokerage networks and has no retail mate. The fund is a large-cap value fund; its P/B ratio is lower and its median market cap is higher than the Russell 3000 index. We assume that the fund has an average turnover ratio of 40% and holds an average of 100 stocks in the portfolio.

We detail these inputs in columns (5) and (6) of Table 6. In column (7) we show the contribution of each of these factors to the expected expense ratio for our hypothetical institutional equity fund. The size of the fund and the size of the family translate into a combined reduction in the expense ratio of 6 basis points relative to the representative equity fund (2 basis points lower than the representative fund for fund size, and 4 points lower for family size, shown in column (8)). Relative to the representative fund, our hypothetical fund provides 4 basis points in savings due to reduced brokerage selling support and 7 basis points in savings because it has no loaded retail mate. On the other hand, expected expenses for this fund are 9 basis points higher because the fund is bank-advised. The portfolio management characteristics translate into expense reductions of 2 basis points from lower turnover and 1 basis point from holding slightly more securities in the portfolio. The large-cap value characteristic of the fund further reduces the expenses relative to the representative fund by a total of 10 basis points (a 5 basis point savings from the lower P/B ratio and another 5 basis point savings from the higher median market capitalization). All of these characteristics together give us an expected level of expenses of 74 basis points, for a total savings of 21 basis points over the representative institutional equity fund.

Of course, we do not expect this exercise to exactly match the fees that such a fund might charge or that a separate account manager might offer. The point of the exercise is to arm the plan sponsor with a

tool that provides insight into how the characteristics of a fund tend to influence annual expenses. If an institutional fund deviates significantly from the expected fee level, questions should be asked about the value the fund provides to justify those expenses. If a separate account manager presents fee levels that are greater than the expected expenses, the manager should be asked to defend those higher fees. This methodology is far more powerful than knowing the average fee level for different types of funds. Since so many characteristics influence expenses, a multivariate methodology is more efficient at providing an expense estimate than a univariate approach.

It is also important to realize that expense determinants may change over time. We derive these results with the most up-to-date data available for the institutional mutual fund universe at the time of this writing. However, if expense drivers evolve, our regression technique can easily be repeated for new or different data.

We have not included the 12b-1 fees in our expected expense projections. Recall that both our initial analysis and previous research has shown 12b-1 fees to be deadweight costs. The amount of a 12b-1 fee could simply be added to the number in the template to derive the total expected expense ratio for an institutional fund that has a 12b-1 fee.

5 International equity funds

International equity funds are inherently more expensive than domestic equity funds. Table 2 suggests that the average difference is on the order of 34 basis points for institutional funds.⁹ For the international equity funds in our sample, we run the same model for the determinants of annual fund expenses with the addition of one additional explanatory variable: the percentage of the portfolio that is invested in emerging market securities. Table 7 presents the results from the regression model.

Table 7 Determinants of expenses for institutional international equity funds.

	Dependent variable is non-12b-1 expenses	
	Coefficient	<i>t</i> -Statistic
Intercept	80.0*	2.11
<i>Fund and family characteristics</i>		
Log fund assets	-3.0*	-2.34
Log family assets	-3.1*	-1.79
Log number of funds in family	-0.2	-0.68
Log of advisory company age	11.0*	1.69
Log of minimum purchase	-0.07	-1.03
12b-1 dummy	-2.8	-0.41
Log number of brokers	4.3*	1.66
Master-feeder	-17.0	-1.62
Bank advised	8.8	1.21
Qualified access	-15.0	-1.42
No-load retail mate	-20.1**	-2.78
No retail mate	-14.9**	-2.81
<i>Portfolio management characteristics</i>		
Index fund	-22.9*	-2.01
Log turnover ratio	10.6**	4.07
Log number of holdings	-3.4	-0.74
Log portfolio concentration	0.2	0.56
<i>Fund objective characteristics</i>		
Price-to-book ratio	8.4	0.61
Log of median market cap	-3.8*	-1.65
Percent emerging market	0.35**	4.14
<i>R</i> -square		0.59
Number of observations		211

Note: * (**) indicates significance at the 10% (1%) level.

Similar to domestic equity funds, the size of the fund and the size of the family are inversely related to annual expenses. The most important variables, judging from statistical significance, appear to be portfolio turnover and the degree to which the portfolio is tilted toward emerging market securities. These results are intuitive. More active managers, as measured by portfolio turnover, undertake more research, and research on international equities is

more costly than comparable research on domestic stocks. Further, such research is likely to be even more expensive in emerging markets than in developed foreign markets. The coefficients on the dummy variables indicating index funds, the existence of a no-load retail mate and no existing retail mate are all negative and significant. Finally, in this specification, the coefficient on the age of the advisory firm is positive and significant. This

Table 8 Determinants of expenses for institutional bond funds.

	Dependent variable is non-12b-1 expenses	
	Coefficient	<i>t</i> -Statistic
Intercept	84.0**	7.30
<i>Fund and family characteristics</i>		
Log fund assets	-2.1**	-3.04
Log family assets	-1.5	-1.31
Log number of funds in family	-0.1	-1.21
Log of advisory company age	0.1	0.04
Log of minimum purchase	-0.1	-1.43
12b-1 dummy	-3.7	-0.89
Log number of brokers	-1.9	-1.52
Master-feeder	-5.7	-1.03
Bank advised	3.0	0.98
Qualified access	-4.3	-0.78
No-load retail mate	-23.7**	-6.30
No retail mate	-15.2**	-5.25
<i>Portfolio management characteristics</i>		
Index fund	-27.6*	-2.48
Log turnover ratio	2.1*	1.86
Log number of holdings	-0.2	-0.11
Log portfolio concentration	0.1	0.60
<i>Fund objective characteristics</i>		
Percent high yield	0.12*	2.55
<i>R</i> -square		0.35
Number of observations		382

Note: * (**) indicates significance at the 10% (1%) level.

result suggests that older, more established advisory companies tend to charge higher annual fees for their international offerings. Perhaps institutional investors are willing to pay such advisors a premium to manage international investments since the institutions themselves feel less comfortable about their own international investing savvy.

The interested reader can use this information and the approach detailed in Table 6 to establish templates for a variety of international funds and, in the next section, bond funds.

6 Bond funds

The final category of institutional funds that we explore is bond funds. The annual expense regression is similar to that for the two equity fund categories except that we have a single fund objective characteristic: the percent of the portfolio held in high yield bonds. We categorize as high yield all bonds that are rated BBB or lower. Other characteristics such as the effective maturity of the portfolio, the mix between government and corporate debt, and whether the portfolio is a municipal bond

fund are insignificant in unreported specifications. Table 8 details the results of the regression.

The first interesting finding is that the R -square of the regression is lower than that for either the domestic or international equity funds. This finding is consistent with LaPlante (2001) who finds less explanatory power in expense determinants for bond funds than for equity funds. Consistent with the lower R -square is the result that fewer of the explanatory variables are significant. While the size of the fund is negative and significant, the size of the family does not appear to be an important determinant of the expense levels of bond funds. The trading activity of the fund, whether and what type of retail mate the fund has and the percent held in high yield securities are important drivers of annual expenses. As expected, trading activity and percent of high yield debt increase expenses, while both the absence of a retail mate and the existence of a no-load retail mate both reduce bond fund expenses.

Because there are so many insignificant variables in the model, we are concerned that the point estimates of the variables may be compromised as the estimation procedure attempts the best fit. Therefore, we re-estimate the expense equation with only the variables that are significant at the 10% level or better. This procedure has very little effect on the magnitudes of the coefficients of dependent variables, although the intercept does change from 84 basis points to 70 basis points, which is an economically significant amount.

7 Conclusion

In this study we analyzed the determinants of institutional mutual fund expenses. We documented the effect that fund characteristics have on management fees, and we interpreted the economic significance of the results to allow consumers of institutional money management services to gauge

whether the fees they pay are consistent with the fees on other similar alternatives. We find that a number of different characteristics affect the fees paid for institutional money management. Larger funds and larger fund families offer lower expenses. These economies of scale appear to be somewhat stronger for equity portfolios than for fixed income portfolios. Greater portfolio trading activity increases expenses for all funds, but is most pronounced for international equity funds. Actively managed funds are more expensive than index funds — 23 basis points more in the case of international equity funds and 37 basis points more for domestic equity funds.

We find a definite role for investment style in driving institutional management fees. For bond funds, higher allocations to high yield securities increase expenses. Domestic equity funds exhibit expenses that increase in the allocation to small-cap and growth stocks. International equity fund expenses are highly sensitive to the allocation to emerging market securities and marginally sensitive to market capitalization.

Finally, we developed a methodology for calculating the expected expense levels for bond, domestic equity, and international equity portfolios. These expected expense calculations rely on the observed relationships in our exhaustive sample of institutional mutual funds, but may be applied to separate accounts as well. Armed with these data and this methodology for calculating expected expenses, plan sponsors will be better equipped to cull appropriately priced, publicly available institutional investment vehicles and to negotiate with potential providers of private money management services.

Notes

- ¹ Elton *et al.* (1993), Gruber (1996), Carhart (1997), and Dellva and Olson (1998) among others demonstrate an inverse relationship between fees and performance. Peterson *et al.* (2002) conclude that investors in equity

funds in taxable accounts can maximize their returns by focusing on funds with good past pre-tax performance, low expenses, and high past tax efficiency. Saraoglu and Detzler (2002) find that the expense ratio, fund manager's tenure and the standardized excess return are the key drivers of the optimal selection of individual mutual funds. Christoffersen (2001) finds that fund managers voluntarily waive some fees in order to increase net performance and increase expected fund flows suggesting that even at the retail level, fund investors do condition investment decisions on fund fees.

- ² LaPlante (2001), Malhotra and McLeod (1997), Trzcinka and Zweig (1990), and Ferris and Chance (1987) all examine the determinants of expense ratios. Livingston and O'Neal (1996) relate fund brokerage commissions to expense ratios.
- ³ See Ennis (1997) and Snigaroff (2000) for discussions of how fees are spent in the money management business. Grinblatt and Titman (1987) warn that performance-based fund fee contracts can be gamed to increase fees without increasing fund performance.
- ⁴ From Morningstar Principia Pro Plus (2003).
- ⁵ It is important to note that economies of scale are present in the costs of providing fund management and that the expenses that are charged may or may not reflect the actual economies realized in fund management.
- ⁶ Note that fewer observations than our total sample are employed in this and following regressions. Observations that do not have data for each independent variable are deleted.
- ⁷ There is some concern that the master-feeder structure is more common for bank-advised funds than non-bank-advised funds. This, however, is not the case. Of the 348 bank-advised funds only 6.6% (23) have the master-feeder structure, compared to 4.3% for the overall sample.
- ⁸ In an unreported specification, we re-estimated the fund expense regression using only the variables that were significant at the 10% level or better. The magnitudes of the resulting coefficients were very close to the magnitudes in the original regression. We, therefore, use the coefficients from the original regression in the template for expected expenses.
- ⁹ LaPlante (2001) finds the difference to be 41 basis points for retail funds.

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