Internet Appendix to "The Relation between Price and Performance in the Mutual Fund Industry"*

IA.I Data: Sample Selection and Descriptive Statistics

A. *Investment Objectives*

The CRSP database offers different classifications of funds by investment objective. However, no classification covers the whole 1962 to 2005 period. To construct our sample, we combine the information provided by the different classifications. We consider a fund to be a domestic diversified equity mutual fund if it satisfies any of the following conditions:

- For the years 1962 through 1989, a fund is included in the sample if the type of securities mainly held by the fund is *common stock* and the fund belongs to any of the following Wiesenberger Objective codes: *Growth, Growth-Income,* or *Maximum Capital Gains.*
- For the years 1990 through 1991, there is no information on the type of security mainly held by the fund and the Wiesenberger classification changes. For these years, a fund is included in the sample if it belongs to any of the following Wiesenberger Objective codes: *Growth and Current Income; Long-Term Growth, Maximum Capital Gains,* or *Small Capitalization Growth.*
- For the years 1992 through 2005, a fund is included in the sample if it belongs to any of the following *Standard & Poor's Detailed Objective Codes* (formerly known as *Strategic Insight Fund Objective Codes*): *Aggressive Growth, Growth Mid Cap, Growth and Income, Growth,* or *Small Company Growth.*

B. *Index Funds*

We code as index funds those funds whose name contains any of the following strings: "Index," "Idx," "Ix," "Indx," "NASDAQ," "Nasdaq," "Dow," "Mkt," "DJ," "S&P, 500," "BARRA." For the 2003 to 2005 period, the CRSP database contains precise specialty codes that allow us to check the accuracy of our index dummy. For these years, the correlation between our index variable and a dummy that equals one if a fund lies in any of the index specialty codes is 0.78. Only 2.92% of the observations classified as index according to our method belong to a non-index specialty code and only 2.77% of the observations that we classify as actively managed are classified as index by CRSP. Finally, our dummy captures 66.22% of the observations coded as index by CRSP.

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C. *Institutional Funds*

We code as institutional funds (or share classes) those funds whose name contains the strings "Inst" or "inst" and those that belong to share classes "Y" or "I." For years 2003 through 2005, the CRSP database includes a variable (*inst_fund*) that identifies institutional funds. For these years, we compare our institutional variable with the one provided by CRSP: Only 13.23% of the observations that we code as institutional are coded as non-institutional by CRSP, but our measure identifies only 28.28% of the observations coded as institutional by CRSP. CRSP's definition, however, seems more inclusive than others. We also obtain for the year 2004 an institutional identifier provided by Morningstar (obtained from the MSN Money webpage on July 14, 2004). For 2004, CRSP identifies as institutional 59.72% of the observations of our sample, while Morningstar classifies as such only 18.31% of the observations. Of the observations that we identify as institutional, 62.55% are also classified as such by Morningstar. At the same time, our measure captures 68.42% of the observations coded as institutional by Morningstar.

D. *Share Classes and Fund Complexes*

In the CRSP data set, different classes of the same fund appear as different funds and there is no common fund identifier until year 2003. Since funds with different classes are named "*Fund's name/Class*," we perform a name search to identify share classes belonging to the same fund. The data set, however, does include an identifier of the company that manages the fund. We employ this identifier to compute all variables related to fund complexes.

E. *Descriptive Statistics*

Table IA.I reports descriptive statistics for our sample of diversified domestic retail active equity mutual funds corresponding to the 1962 to 2005 period.

Table IA.I
Summary Statistics: Diversified Domestic Retail Active Equity Mutual Funds, 1962-2005

The table shows summary statistics for the sample of diversified domestic retail actively managed equity mutual funds corresponding to the period 1962 to 2005. *Obs.* denotes the number of fund-months for which the value of that variable is available. Reported returns are monthly (after-expense) returns in percentage points. *Expenses* denotes funds' expense ratio, and *loads* the maximum of the front-end and back-end load. Both variables are measured in percentage points. *TNA* is total net assets in millions of USD. *Age* is defined as number of years since fund inception.

	Obs.	Mean	Median	S. D.	1st Pctile.	25th Pctile.	75th Pctile.	99th Pctile.
Returns	446,970	0.75	0.99	5.81	-15.93	-2.46	4.31	14.42
Expenses	446,970	1.46	1.38	0.60	0.27	1.01	1.92	3.00
Loads	446,970	3.08	3.50	2.93	0.00	0.00	5.00	8.75
TNA	437,610	452.69	51.30	2,341.49	0.10	11.70	213.20	6,905.20
Age	445,781	9.66	5.00	12.39	0.00	2.00	11.00	60.00

IA.II Univariate Regressions: Additional Results

In this section, we report additional results from monthly univariate regressions of funds' before-fee risk-adjusted performance on fees. Table IA.II reports the results from several Generalized Least Squares regressions intended to account for heteroscedasticity in the error term. Table IA.III shows the results from univariate regressions by investment category when the dependent variable is total ownership cost.

Table IA.II
Generalized Least Squares

The table shows estimated slope coefficients for the Generalized Least Squares regression of funds' monthly before-fee risk-adjusted performance on monthly fees in the period from January 1962 to December 2005. Betas are estimated using Carhart's four-factor model with a five-year estimation period. Risk-adjusted performance in month t is the difference between the fund's monthly before-expense return and the product of betas and the factor realizations in t. Fund i's monthly fee in t, f_{it}, is defined as the fund's annual expense ratio divided by 12. All regressions include dummies for months. Estimation is performed by weighted least squares with weights being inversely proportional to the variance of the error of each observation. The variance of the error is assumed to be proportional to the monthly fee (top row); the square root of the monthly fee (second row); and the squared monthly fee (third row). Standard errors are reported in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Superscripts a, b, and c denote that the null hypothesis of a unit coefficient is rejected at the 10%, 5%, and 1% significance levels, respectively. The number of observations is 232,386.

Variance proportional to	Coefficient
f_{it}	-0.7996^{***,c}
	(0.0922)
$\sqrt{f_{it}}$	-0.7015^{***,c}
	(0.0970)
f_{it}^2	-1.0399^{***,c}
	(0.0763)

Table IA.III
Regressions by Investment Objective: Total Ownership Cost

The table shows estimated slope coefficients for the OLS regression of funds' monthly before-fee risk-adjusted performance on monthly total ownership cost in the period from January 1992 to December 2005. Betas are estimated using Carhart's four-factor model with a five-year estimation period. Risk-adjusted performance in month t is the difference between the fund's monthly before-expense return and the product of betas and the factor realizations in t. Monthly total ownership cost is computed as the fund's annual expense ratio divided by 12 plus the sum of front-end and back-end loads divided by the assumed holding period in months, which equals two years in Panel A and seven years in Panel B. All regressions include dummies for months. Robust standard errors (in parentheses) are clustered by time. Adjusted R^2 statistics are reported in %. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Superscripts a, b, and c denote that the null hypothesis of a unit coefficient is rejected at the 10%, 5%, and 1% significance levels, respectively.

Subsample	Coefficient	Adj. R^2	Obs.
Panel A. 2-year holding period			
Aggressive Growth Funds	0.0144^{c}	17.43	13,326
	(0.2005)		
Growth MidCap Funds	-0.0497^{c}	28.01	15,309
	(0.1479)		
Growth and Income Funds	$-0.2001^{***,c}$	12.81	38,956
	(0.0654)		
Growth Funds	$-0.2990^{***,c}$	8.50	70,008
	(0.0790)		
Small Company Growth Funds	$-0.2966^{**,c}$	21.92	34,834
	(0.1406)		
Panel B. 7-year holding period			
Aggressive Growth Funds	-0.2135^{b}	17.43	13,326
	(0.5362)		
Growth MidCap Funds	-0.0810^{c}	28.01	15,309
	(0.4046)		
Growth and Income Funds	$-0.5038^{***,c}$	12.82	38,956
	(0.1315)		
Growth Funds	$-0.6594^{***,c}$	8.50	70,008
	(0.1980)		
Small Company Growth Funds	$-0.6511^{**,c}$	21.92	34,834
	(0.3118)		

IA.III Conditional Models

As mentioned in the article, we also employ conditional performance evaluation models to estimate funds' before-fee risk-adjusted performance (α). We use the resulting alphas to estimate equation (2) (as numbered in the article):

$$\hat{\alpha}_{it} = \delta_{0t} + \delta_1 f_{it} + \xi_{it}, \quad i = 1, \ldots, \ N, \quad t = 1, \ldots, \mathrm{T} \ . \tag{2}$$

In conditional performance evaluation models, funds' risk exposures are allowed to vary with the state of the economy as proxied by a small number of pre-determined public information variables (Ferson and Schadt (1996)). As in previous recent studies (see, for example, Kosowski et al. (2006)), we use a conditional version of Carhart's four-factor model. In its most general form, the model we employ also allows for time-varying alphas as in Christopherson, Ferson, and Glassman (1998):

$$\begin{aligned} r_{it} \ = \ & \alpha_{0i} + A'_{0i} z_{t-1} + (\beta_{0,rm,i} + B'_{rm,i} z_{t-1}) rm_t + (\beta_{0,smb,i} + B'_{smb,i} z_{t-1}) smb_t \\ & + (\beta_{0,hml,i} + B'_{hml,i} z_{t-1}) hml_t + (\beta_{0,pr1y,i} + B'_{pr1y,i} z_{t-1}) pr1y_t + \varepsilon_{it}, \end{aligned} \tag{IA.1}$$

where r_{it} is fund i's before-expense return in month t in excess of the 30-day risk-free interest rate—proxied by Ibbotson's one-month Treasury bill rate; rm_t is the market portfolio return in excess of the risk-free rate; and smb_t and hml_t denote the return on portfolios that proxy for common risk factors associated with size and book-to-market, respectively. The term $pr1y_t$ is the return difference between stocks with high and low returns in the previous year, and is included to account for passive momentum strategies by mutual funds.[1] The term z_{t-1} is a vector of lagged conditioning variables centered around their time-series mean.

In light of the results reported by Kosowski et al. (2006), our benchmark is a conditional model in which only the market beta is time-varying and in which the dividend yield on the market portfolio (computed as the sum of dividends on the NYSE/Amex index in the last 12 months divided by the index level at the end of the year) is our only conditioning variable. However, we also report results for models in which all betas are time-varying and models that include other predictors commonly used in the literature: the term spread, as proxied by the difference between the 10-year U.S. Government constant maturity rate and the three-month T-bill rate; the default spread, measured as the difference between the average rates of Moody's Baa- and Aaa-rated corporate debt; and the one-month T-bill rate in excess of its average over the previous 12 months.[2] Due to the increased number of parameters, in addition to five-year rolling regressions, we estimate betas using a 10-year estimation period. For specifications in which alpha is modeled as a time-varying function of the instruments, we run regression (2) with *predicted alpha* (defined as $\hat{\alpha}_{0i} + \hat{A}'_{0i} z_{t-1}$) as our measure of risk-adjusted expected returns.

[1] Data are downloaded from Kenneth French's website, http://mba.tuck.dartmouth.edu/pages /faculty/ken.french/.

[2] Data for the dividend yield and the one-month rate are obtained from CRSP, and the term and default spreads are computed using Federal Reserve data.

Table IA.IV reports slope coefficients for regressions of risk-adjusted before-expense returns, estimated using different specifications of the conditional model (IA.1), on expense ratios. For all specifications except one, the estimated coefficient is negative and statistically significant at conventional significance levels.[3] With estimated coefficients ranging from -1.01 to -0.26, results from conditional models are generally consistent with those from the unconditional model reported in the article.

Table IA.IV
Before-Fee Risk-Adjusted Performance and Expense Ratios: Conditional Models

The table shows estimated slope coefficients for the OLS regression of funds' monthly before-fee risk-adjusted performance on monthly expense ratios in the January 1962 to December 2005 period. All regressions include dummies for months. Standard errors are reported in parentheses and adjusted R^2 statistics in %. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Betas are estimated using a conditional version of Carhart's four-factor model with a five- or 10-year estimation period. In the conditional model with constant alpha, before-fee risk-adjusted performance in month t is estimated as the difference between the fund's before-expense monthly return in month t and the product of the estimated month-t betas and the factor realizations for that month. In the conditional model with time-varying alpha, before-fee risk-adjusted performance in month t is computed as the forecast of next period's alpha using parameter estimates and the realization of the instruments in month $t-1$. Robust standard errors are clustered by time in the constant alpha models and by both time and fund in the time-varying alpha models. The number of observations for the five-year and 10-year estimation periods are 232,386 and 102,466, respectively.

Estimation Period	Time-varying Betas	Instruments	Constant alpha		Time-varying alpha	
			Coeff.	Adj. R^2	Coeff.	Adj. R^2
Five years	Market beta	Dividend Yield	-0.4376*	10.03	-0.6034***	9.46
			(0.2611)		(0.1431)	
Ten years	Market beta	Dividend Yield	-0.6541**	9.86	-0.9988***	9.81
			(0.2728)		(0.2503)	
Five years	All	Dividend Yield	-0.4334*	8.78	-0.84101***	8.67
			(0.2288)		(0.13971)	
Ten years	All	Dividend Yield	-0.6740**	8.10	-1.0107***	9.93
			(0.2686)		(0.2314)	
Five years	Market beta	All	-0.2651	10.18	-0.5588***	8.67
			(0.2996)		(0.2091)	
Ten years	Market beta	All	-0.4915*	9.61	-0.9076***	7.09
			(0.2833)		(0.2689)	

[3]When time-varying alpha is the dependent variable, standard errors are not only clustered by time but also by fund in order to account for time-series dependence in the residuals due to the use of overlapping observations.

IA.IV Fund Flow Regressions

Table IA.V reports the results of estimating the model of fund flow determination presented in the article's Appendix (the equation is numbered as in the article).

$$\begin{aligned} Flow_{it} =& a_{0t} + b_0 Perf_{it-1} + b_1 Perf_{it-1} rel\_age_{it-1} + b_2 Perf_{it-1} rel\_Q/MAX_{it-1} \\ &+ a_M I_{M,it-1} + b_M Perf_{it-1} I_{M,it-1} + a_M^{PC} I_{M,it-1} PC_{it-1} + b_M^{PC} Perf_{it-1} I_{M,it-1} PC_{it-1} \\ &+ a_H I_{H,it-1} + b_H Perf_{it-1} I_{H,it-1} + a_H^{PC} I_{H,it-1} PC_{it-1} + b_H^{PC} Perf_{it-1} I_{H,it-1} PC_{it-1} \\ &+ \mathbf{c}' \mathbf{w}_{it-1} + \varphi_{it}. \end{aligned} \tag{A2}$$

The dependent variable is annual net flow to fund i in year t, $Flow_{it}$, defined as the relative growth of the fund's total net assets (TNA) adjusted for returns net of expenses, R_{it}^n (the equation is numbered as in the article):

$$Flow_{it} = \frac{TNA_{it} - TNA_{it-1}(1 + R_{it}^n)}{TNA_{it-1}}. \tag{A1}$$

All other variables are defined in Table IA.V. Please refer to the article's Appendix for a discussion of the specification and a more detailed explanation of the variables.

Table IA.V
Fund Flows and Flow-to-Performance Sensitivity

The table shows estimated coefficients for the OLS regression of funds' annual relative growth in assets due to new money on selected fund characteristics in the January 1993 to December 2005 period. $Size_t$ and Age_t denote the log of the fund's total net assets and the log of the number of years since the fund's organization in year t, respectively. $FLoad_t$, $BLoad_t$, $12b\text{-}1_t$, and $N\text{-}Mark_t$ denote front-end loads, back-end loads, 12b-1 fees, and nonmarketing expenses, defined as the expense ratio minus 12b-1 fees. $ClassA_t$, $ClassB_t$, and $ClassC_t$ are dummy variables for share classes. σ_t is the standard deviation of the fund's monthly returns in year t. $Co.\ Size_t$ is the log of the total net asset value of all funds under the same management company. $Flow_t$ and $Objflow_t$ are flows of new money into the fund and total flows of money to all funds with the same investment objective, respectively. The proxy for past performance, $Perf_{t-1}$, is the fund's four-factor alpha in year $t-1$, net of expenses, and in excess of the mean net alpha of all funds with the same investment objective in that year. $I_{M,t}$ and $I_{H,t}$ are dummy variables that equal one if $Perf_t$ is in the second and top third of all funds with the same investment objective in year t, respectively. The variables rel_age_t and rel_Q/MAX_t are, respectively, the log of the fund's age in years and the fund's Q/MAX_t in excess of the corresponding average over all observations in year t with the same investment objective. Q/MAX_t is defined as the fund's total net asset value at the beginning of the period divided by its sample maximum total net asset value up to time t. PC_t is a proxy for participation costs. In the first column, this variable equals total assets managed by the company (in excess of the category's average). In the second column, it corresponds to a dummy variable for the presence of a "star" in the complex, defined as a fund with performance in the top 5% of its investment category. Regressions also include year dummies. The table reports robust standard errors (in parentheses) clustered by fund. All fees are expressed in annual per-unit terms. The total number of fund-year observations is 12,603. Adjusted R^2 statistics are in %. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Proxy for participation costs	
	Total Size of Funds in Complex	Presence of a Star in Complex
Size_{t-1}	-0.0387***	-0.0385***
	(0.0040)	(0.0040)
Age_{t-1}	-0.0184***	-0.0179***
	(0.0062)	(0.0062)
FLoad_{t-1}	-0.3389	-0.3181
	(0.3422)	(0.3411)
BLoad_{t-1}	-0.2032	-0.1337
	(0.7106)	(0.7148)
N-Mark_{t-1}	-3.0493**	-3.1118**
	(1.2997)	(1.3134)
$12\text{b-}1_{t-1}$	-6.5375**	-6.5622**
	(2.6800)	(2.6881)
classA_{t-1}	0.0421**	0.0413**
	(0.0191)	(0.0190)
classB_{t-1}	-0.0639**	-0.0663**
	(0.0281)	(0.0280)
classC_{t-1}	0.0119	0.0128
	(0.0285)	(0.0286)

Table IA.V – *Continued*

	Proxy for Participation Costs	
	Total Size of Funds in Complex	Presence of a Star in Complex
σ_{t-1}	-0.2533***	-0.2504***
	(0.0685)	(0.0669)
Co. Size_{t-1}	0.0150***	0.0167***
	(0.0028)	(0.0032)
Flow_{t-1}	0.1806***	0.1799***
	(0.0295)	(0.0296)
Objflow_{t-1}	0.3400***	0.3235***
	(0.0858)	(0.0852)
Q/Max_{t-1}	0.2273***	0.2272***
	(0.0279)	(0.0280)
Perf_{t-1}	0.6475***	0.6160***
	(0.1605)	(0.1545)
$\text{Perf}_{t-1}\cdot\text{rel\_age}_{t-1}$	-0.3775***	-0.3967***
	(0.1019)	(0.1026)
$\text{Perf}_{t-1}\cdot\text{rel\_Q/MAX}_{t-1}$	0.6760**	0.5946**
	(0.2978)	(0.2744)
$\text{I}_{M,t-1}$	0.0576***	0.0633***
	(0.0105)	(0.0112)
$\text{I}_{H,t-1}$	0.1002***	0.0737***
	(0.0180)	(0.0255)
$\text{Perf}_{t-1}\cdot\text{I}_{M,t-1}$	0.7167*	0.8694*
	(0.4161)	(0.4804)
$\text{Perf}_{t-1}\cdot\text{I}_{H,t-1}$	0.8375***	1.4730***
	(0.2374)	(0.3882)
$\text{PC}_{t-1}\cdot\text{I}_{M,t-1}$	0.0067**	-0.0053
	(0.0031)	(0.0134)
$\text{PC}_{t-1}\cdot\text{I}_{H,t-1}$	0.0177**	0.0473
	(0.0076)	(0.0330)
$\text{Perf}_{t-1}\cdot\text{PC}_{t-1}\cdot\text{I}_{M,t-1}$	-0.0444	-0.6196
	(0.1689)	(0.7263)
$\text{Perf}_{t-1}\cdot\text{PC}_{t-1}\cdot\text{I}_{H,t-1}$	-0.2687**	-0.9885**
	(0.1117)	(0.4651)
Adjusted R^2	15.73	15.63

IA.V The Determinants of Fund Fees: Additional Results

In tables IA.VI to IA.VIII we report additional results regarding the determinants of mutual fund fees that we refer to in the article.

Table IA.VI
Management Company Fixed Effects: Two-stage Estimation

The table reports estimated coefficients for the period 1993 to 2005. Coefficients are estimated employing a two-stage method à la Fama-MacBeth (Fama and MacBeth, 1973). In the first stage, we estimate for each year in the sample a model with management company fixed effects. The coefficient estimates reported in the table are the averages of the yearly coefficients estimated in the first stage. The standard error of a coefficient estimate $\widehat{\gamma}$ is computed as $(\text{s.d.}(\widehat{\gamma})/\sqrt{T})$, where $\text{s.d}(\widehat{\gamma})$ is the standard deviation of the yearly coefficients estimated in the first stage and T is the number of years. The dependent variable in the first stage regressions is total annual ownership cost, computed as total loads divided by a holding period of seven years plus annual expense ratios. For classes B and C, back-end loads are assumed to be zero. The variable σ_t is the standard deviation of the fund's monthly returns in year t; the variable S_t is the slope of the estimated flow-to-performance relation; and $\widehat{\alpha}_t$ is the year t's four-factor alpha. Regressions also include dummy variables for the different investment objectives and share classes. Standard errors are reported in parentheses. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Fama-MacBeth. M.co. Fixed-effects
Size_{t-1}	-7.24***
	(0.39)
Age_{t-1}	-10.80***
	(0.94)
Turnover_{t-1}	-2.45**
	(0.84)
σ_{t-1}	15.70
	(15.27)
α_t	-17.08**
	(6.93)
S_t	-5.44***
	(1.37)

Table IA.VII
Determinants of Marketing Fees: Tobit Regression

The table reports estimated coefficients for a Tobit regression of funds' marketing fees on selected fund characteristics in the 1993 to 2005 period. Marketing fees are defined as total loads divided by seven plus 12b-1 fees. Back-end loads are assumed to be zero for share classes B and C. The size of the management company and the number of funds in the management company are denoted by *Co. Size* and *# funds*, respectively. σ_t is the standard deviation of the fund's monthly returns in year t. S_t denotes the slope of the estimated flow-to-performance relation. $\widehat{\alpha}_t$ is the year t four-factor alpha. The regression includes year dummies and dummy variables for the different investment objectives and share classes. Fees are expressed in bp. The table also reports robust standard errors (in parentheses) clustered by fund. The total number of observations and McFadden's pseudo R^2 of the regression (in %) are reported at the bottom of the table. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Marketing fees
Size_{t-1}	-8.27***
	(0.78)
Age_{t-1}	-4.41***
	(1.60)
Co. Size_{t-1}	9.67***
	(0.87)
# funds_{t-1}	-0.92***
	(0.13)
Turnover_{t-1}	-0.70
	(1.01)
σ_{t-1}	26.46**
	(11.85)
$\widehat{\alpha}_t$	-15.41**
	(6.00)
S_t	-1.79*
	(0.99)
Observations	10,284
Pseudo R^2	9.87

Table IA. VIII
Determinants of Fee Changes

The table reports estimated coefficients for fee change equations for the period 1993 to 2005. The dependent variable in column (1) is the change in total annual ownership cost ($TOC_t - TOC_{t-1}$). In columns (2), (4), and (6) the dependent variable is $I_{\Delta f_t>0}$, a dummy variable that takes the value 1 if there is a positive change in total ownership cost (column (2)), nonmarketing fees (column (4)), or marketing fees (column (6)), respectively, and zero otherwise. The dependent variable in columns (3), (5), and (7), $I_{\Delta f_t<0}$, is defined analogously for negative changes in fees. Column (1) is estimated by pooled OLS, while all other columns report estimates of logit regressions. The size of the management company and the number of funds in the management company are denoted by $Co.\ Size$ and $\#funds$, respectively. The variable σ_t is the standard deviation of the fund's monthly returns in year t; the variable S_t is the slope of the estimated flow-to-performance relation; and $\widehat{\alpha}_t$ is the year t's four-factor alpha. All regressions include year dummies and dummy variables for the different investment objectives and share classes. The table also reports robust standard errors (in parentheses) clustered by fund. The total number of fund-year observations and the adjusted R^2 or McFadden's pseudo R^2 of the regression are reported at the bottom of the table. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	TOC			Nonmarketing fees		Marketing fees	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Δf_t	$I_{\Delta f_t>0}$	$I_{\Delta f_t<0}$	$I_{\Delta f_t>0}$	$I_{\Delta f_t<0}$	$I_{\Delta f_t>0}$	$I_{\Delta f_t<0}$
Δ Size$_{t-1}$	-5.87***	-1.34***	1.31***	-1.45***	1.34***	-0.10	0.07
	(0.58)	(0.12)	(0.11)	(0.13)	(0.11)	(0.14)	(0.21)
Size$_{t-2}$		-0.02	0.04*	-0.01	0.04*	-0.06**	-0.09*
		(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)
Δ Co. Size$_{t-1}$	-1.58***	-0.08	0.26***	-0.11	0.22***	0.11	0.29**
	(0.59)	(0.08)	(0.08)	(0.08)	(0.08)	(0.11)	(0.14)
Co. Size$_{t-2}$		-0.03	0.04*	-0.05**	0.06***	0.06*	0.04
		(0.02)	(0.02)	(0.02)	(0.02)	(0.04)	(0.05)
Δ# funds$_{t-1}$	0.17***	0.01	-0.01	0.01	-0.01	-0.03**	-0.04***
	(0.05)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
# funds$_{t-2}$		0.01*	0.00	0.01***	-0.00	-0.02***	0.00
		(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Δ Turnover $_{t-1}$	0.60*	0.10**	-0.15**	0.09*	-0.13**	0.13	0.03
	(0.32)	(0.05)	(0.06)	(0.05)	(0.06)	(0.09)	(0.14)
$\Delta\sigma_{t-1}$	-8.93**	0.25	-0.24	0.64	-0.43	-1.60**	-0.40
	(3.97)	(0.47)	(0.53)	(0.48)	(0.53)	(0.79)	(1.11)
Age$_{t-1}$	0.05	0.02	0.14**	0.00	0.18***	0.17**	0.10
	(0.23)	(0.05)	(0.06)	(0.05)	(0.05)	(0.08)	(0.13)
$\Delta\widehat{\alpha}_t$	-1.84	-0.91***	0.42	-1.02***	0.75**	0.22	0.63
	(1.96)	(0.29)	(0.30)	(0.30)	(0.29)	(0.47)	(0.83)
$\Delta\widehat{\alpha}_{t-1}$		-0.39	0.34	-0.47	0.56*	0.62	-0.86
		(0.30)	(0.33)	(0.29)	(0.32)	(0.52)	(0.66)
ΔS_t	0.19	-0.04	0.03	-0.10	0.09	0.05	0.12
	(0.35)	(0.06)	(0.07)	(0.07)	(0.06)	(0.09)	(0.15)
S_{t-1}		-0.18**	0.11	-0.27***	0.23***	0.06	-0.14
		(0.08)	(0.08)	(0.08)	(0.08)	(0.10)	(0.18)
Obs.	8,054	8,101	8,101	8,101	8,101	8,101	8,101
Pseudo R^2		11.91	11.82	12.17	11.31	15.64	15.99
Adj. R^2	8.18						

IA.VI Fund Governance and Fees: Additional results

Table IA.IX reports the results of estimating a fee regression with marketing or nonmarketing fees as the dependent variable and with board quality and fund characteristics other than performance or performance sensitivity as explanatory variables.

Table IA.IX
Marketing and Nonmarketing Fees and Fund Governance

The table reports estimated coefficients for the pooled OLS regression of funds' fees on selected fund characteristics in the 1993 to 2005 period. In column (1) the dependent variable is marketing fees, defined as total loads divided by seven plus 12b-1 fees. Back-end loads are assumed to be zero for share classes B and C. In column (2) the dependent variable is nonmarketing fees, computed as the expense ratio minus 12b-1 fees. The variable σ_t is the standard deviation of the fund's monthly returns in year t. *Fair*, *Good*, and *Excell.* are dummy variables that take a value of one if the observation has Fair, Good, or Excellent board quality grade, respectively, and zero otherwise. All regressions include year dummies and dummy variables for the different investment objectives and share classes. All fees are expressed in bp. The table also reports robust standard errors (in parentheses) clustered by fund. The total number of observations and the adjusted R^2 of the regression (in %) are reported at the bottom of each column. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Marketing fees	(2) Nonmarketing fees
Size_{t-1}	-5.05***	-1.84***
	(0.54)	(0.36)
Age_{t-1}	0.55	-3.53***
	(0.88)	(0.71)
Co. Size_{t-1}	7.01***	-8.15***
	(0.64)	(0.46)
# funds_{t-1}	-0.69***	0.53***
	(0.09)	(0.05)
Turnover_{t-1}	-4.05***	3.46***
	(0.97)	(0.86)
σ_{t-1}	-8.69	3.11
	(10.31)	(8.36)
Fair	8.99**	-4.05
	(3.87)	(2.67)
Good	-3.03	-6.57***
	(3.86)	(2.48)
Excell.	-1.93	-5.95*
	(4.36)	(3.10)
Observations	7,766	7,816
Adj. R^2	59.76	41.10

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