Internet Appendix for "Mutual Fund Performance and the Incentive to Generate Alpha"

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In Table IA.I, we replicate the summary statistics reported in Table I except that we add the institutional segment. We classify a fund as being institutional when at least 75% of its assets are sold through share classes focused on that segment. Collectively, institutional funds manage a relatively small 8.4% of the assets invested in nonspecialized domestic equity. Notably, 26.9% of institutional assets are invested in passive index funds, and both actively managed and index institutional funds have the lowest average expense ratio of the three segments.

In Table IA.II, we replicate the panel regressions of monthly fund flow on past performance measures reported in Table II except that we expand the sample to include the institutional segment. To establish the robustness of our findings in Table II, we also include specifications that omit lagged fund flows or fund-level controls. For each specification, the table reports the coefficients on the control variables that were included but unreported in Table II. In columns (8), (9), and (10), we find that fund flows in the institutional segment behave similarly to broker-sold funds in that they are significantly related to lagged raw returns and insignificantly related to risk-adjusted returns. Like broker-sold funds, the coefficient on risk-adjusted returns is significantly different from the coefficient in the direct-sold segment (*p*-values

of 0.029, 0.027, and 0.039 in columns (8), (9), and (10)). None of our earlier inferences on the broker-sold and direct-sold segments change.

In Table IA.III, we report the results of regressions intended to match the specification reported in Table VI of Bergstresser, Chalmers, and Tufano (2009), who test for differences in return chasing behavior across the broker-sold and direct-sold segments. They regress flows in calendar year t on raw returns in calendar year t and calendar year t-1, and find that the sensitivity of flows to raw returns is similar in both segments. Their evidence is not directly comparable to ours because they report results based on annual flows and do not include risk-adjusted performance measures in their regressions. Specifications (2) and (4) are intended to match their specification as closely as possible, where they separately estimate flow sensitivity to positive performance. When we control only for raw returns in specifications (1) and (2), we also find that the sensitivity of flows to raw returns is similar in the direct-sold and broker-sold segments. When we simultaneously control for raw returns and four-factor alphas in specifications (3) and (4), however, we find that sensitivity of flows to four-factor alphas is limited to the direct-sold segment. Note that while the estimated sensitivity of flows to alpha in the direct-sold segment tends to be higher than the estimated sensitivity of flows to raw returns in the broker-sold segment, we cannot reject Bergstresser, Chalmers, and Tufano's finding that the overall tendency to chase past returns is at least as strong in the broker-sold segment. This is because a one-standard deviation increase in four-factor alpha (2.56%) is smaller than a one-standard deviation increase in raw returns (5.61%).

Table IA.IV replicates Table III except that we include institutional funds, and in the regression we include a dummy variable equal to one if the fund is institutional. The omitted dummy is the indicator variable for broker-sold funds. We also report the coefficients on the

control variables that were included but unreported in Table III. None of our inferences on the broker-sold and direct-sold segments change. Regarding the institutional segment, we find that active share is significantly lower than in the broker-sold segment. Both four-factor alpha and active share are significantly higher in the direct-sold segment relative to the institutional segment (p-values of 0.000 in both cases), while return gap and one-factor beta are not significantly different across the two segments.

Table IA.V replicates Table III Panels A and B except that we restrict the sample to funds with a ticker, Morningstar rating (which ensures the fund is at least three years old), and Morningstar investment objective. This filter eliminates 43.2% of our fund-month observations, primarily because it limits our sample period to the years 1996 to 2002. This specification is intended to show that our results are not driven by incubation bias (Evans (2010)). The results are similar to those of Panels A and B of Table III, with only a few exceptions. In Panel B, within the sample of small cap funds, the difference in the four-factor alphas of direct-sold and broker-sold funds increases from 17.4 to 22.5 basis points per month (p-value of 0.020), and the difference in return gaps increases from 12.0 to 27.5 basis points per month (p-value of 0.000). On the other hand, we do not find that the one-factor betas of direct-sold funds are significantly different from those of broker-sold funds. This suggests that the tilt toward higher betas in the full sample might be driven by the incubation of broker-sold funds.

Table IA.VI replicates Table VI except that we report in column (4) the results of a regression in which we restrict the sample to institutional funds. We also report the coefficients on the control variables that are included but not reported in Table VI. The dependent variable is fund i's four-factor alpha in month t, which we estimate using fund i's after-fee returns over the prior 24 months. The independent variable of interest is a dummy variable indicating whether

fund i is an index fund. In column (4), we find that the estimated difference in performance for institutional index funds is slightly smaller than in the full sample (5.5 basis points per month) but also statistically indistinguishable from zero (p-value of 0.263). We note that the estimated difference in risk-adjusted after-fee returns is almost exactly equal to the 5.3 basis point difference in fees. In columns (4) and (5), we pool all of the observations but distinguish between actively and passively managed funds available in the three different market segments.

Excluding fund-level control variables, the estimated coefficients on the five dummy variables measure average risk-adjusted, after-fee performance relative to the average broker-sold actively managed fund (which is the omitted category). In column (5), we see that the results on direct-sold actively managed funds relative to broker-sold funds are similar to those in Table VI. In column (5), the performance of direct-sold actively managed funds is statistically indistinguishable from the performance of the index funds available in all three segments. In addition, while we estimate that broker-sold actively managed funds underperform institutional actively managed funds by 2.3 basis points per month, this difference is not significant (p-value of 0.362). In column (6), we include control variables and find that inferences do not change from Table VI.

Table IA.VII repeats the analysis of Table VI but using the methodology of Fama and MacBeth (1973) while Table IA.VIII restricts the sample to funds with a ticker, Morningstar rating, and Morningstar investment objective. In both tables, we find similar results to those in Table VI. In Table IA.VII, the estimated underperformance of actively managed funds relative to index funds is 0.3 basis points per month in the direct-sold segment (p-value of 0.931) versus 10.1 basis points per month in the broker-sold segment (p-value of 0.011). In Table IA.VIII, the estimated underperformance of actively managed funds is 0.6 basis points per month in the

direct-sold segment (*p*-value of 0.914) versus 11.0 basis points per month in the broker-sold segment (*p*-value of 0.064). The one exception is in column (1) of Table IA.VIII, when we estimate a pooled regression on the smaller sample of funds with a ticker and Morningstar data. The estimated underperformance of actively managed funds relative to index funds matches the estimate of 6.6 basis points per month in Table IA.VII, but is not statistically significant (*p*-value of 0.155).

REFERENCES

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Table IA.I
Summary Statistics

The table replicates the summary statistics in Table I Panel A, and adds statistics for the institutional market segment. Panel A uses distribution channel data at the share class level from Financial Research Corporation (FRC) and data on TNA from the *CRSP Survivor-Bias-Free U.S. Mutual Fund Database* in 1992 and 2004. The first three columns report aggregate total net assets (TNA) in domestic equity mutual fund share classes from three major fund market segments: direct-sold, broker-sold, and institutional, with each segment divided into actively managed funds and index funds. We exclude funds in CRSP that cannot be classified as direct-sold, broker-sold, or institutional, which collectively represent 7.8% of assets invested in domestic equity funds. We define domestic equity funds as those with a Standard and Poor's investment objective of aggressive growth (AGG), mid-cap growth (GMC), growth and income (GRI), growth (GRO), income and growth (ING), or small-cap growth (SCG). Market share within segment is the percentage of aggregate TNA within the segment (direct-sold, broker-sold, or institutional) that is actively managed versus passively managed, and should be read across the row. For each fund family, we define a family's primary segment as the segment with the largest percentage of family assets distributed through that segment. Number of families is the number of families in the CRSP database that have at least one domestic equity mutual fund that are in that row's primary segment. For example, in 1992, 97 families have the direct-sold segment as their primary segment because it is the segment through which they distribute the most TNA. Average % TNA in primary segment is the average across families of the % of family TNA that is distributed through the family's primary distribution segment. Panel B replicates the summary statistics in Panel B of Table I, and adds statistics for the institutional market segment. It provides the mean and standard deviation of fund-level variables from CRSP. The unit of observation is domestic equity mutual fund i in month t. The sample begins in January 1992 and ends in December 2004, and is restricted to those funds that distribute at least 75% of their assets through either the direct-sold, broker-sold, or institutional market segment.

Panel A. Distribution of Domestic Equity Mutual Fund Assets across Three Market Segments (1992 and 2004)								
	Aggregate TNA in Domestic Equity Mutual Funds			Market Share within Segment			Number of Families	Average % TNA in Primary Segment
	Active	Passive	Total	Active	Passive	Total		
1992								
Direct-sold	$154.1	$8.4	$162.4	94.8%	5.2%	100%	97	98.1%
Broker-sold	$148.4	$0.4	$148.8	99.7%	0.3%	100%	133	99.7%
Institutional	$10.6	$3.9	$14.5	73.1%	26.9%	100%	26	98.9%
Total	$313.0	$12.7	$325.7	96.1%	3.9%	100%	256	
2004								
Direct-sold	$984.6	$189.6	$1,174.2	83.9%	16.1%	100%	192	96.5%
Broker-sold	$779.0	$14.6	$793.7	98.2%	1.8%	100%	153	92.2%
Institutional	$156.2	$75.0	$231.2	67.6%	32.4%	100%	78	82.8%
Total	$1,919.8	$279.2	$2,199.0	87.3%	12.7%	100%	423	

Panel B. Fund-level Summary Statistics for Domestic Equity Mutual Funds in Three Market Segments (1992 to 2004)										
	Num funds Per Year	Fund size ($Millions)		Expense ratio (%)		12b-1 fee (%)		Turnover (%)		After-fee Monthly Return (%)	
	Mean	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Actively Managed Funds											
Direct-sold	440.2	1404.1	4923.9	1.29	0.74	0.09	0.17	139.3%	517.6%	0.92	5.92
Broker-sold	615.7	839.5	3279.3	1.57	1.29	0.40	0.27	89.1%	80.2%	0.80	5.46
Institutional	253.8	334.2	518.3	0.99	0.44	0.09	0.16	83.5%	67.2%	0.88	5.45
Index Funds											
Direct-sold	26.3	3637.8	12211.6	0.44	0.36	0.02	0.07	25.0%	57.6%	0.78	5.02
Broker-sold	16.5	353.0	514.7	0.86	0.45	0.31	0.29	24.4%	31.3%	0.64	4.82
Institutional	26.2	1543.0	4628.8	0.37	0.17	0.07	0.15	24.7%	36.8%	0.80	4.61

Table IA.II
Monthly Flow-Performance Sensitivity Across Three Market Segments, Actively Managed Funds (1993 to 2004)

These panels replicate panel regressions reported in Table II. Columns (1), (2), and (5) below replicate columns (1), (2), and (3) in Table II except that here we report the coefficients on the fund-level control variables. Columns (3) and (6) below are the same specification, except that we omit lagged net flow as an independent variable. Columns (4) and (7) below omit all control variables. Columns (8) through (10) contain the analogous results for the institutional market segment. In each column, the dependent variable is monthly net percentage fund flow, using the standard definition of flow, growth in TNA less capital appreciation. The unit of observation is actively managed domestic equity fund i in month t. The regression in column (1) contains investment objective-month fixed effects. The regressions in columns (2) through (10) include distribution market segment-investment objective-month fixed effects. Panel B adds dummy variables that indicate whether fund i's net return in month t-1 was in either the top or bottom 20% of funds within the same Standard and Poor's investment objective (but across segments), but otherwise is the same specification as Panel A. Observations where the absolute value of net flow is greater than 100% are deleted (less than 1% of the sample fit this definition). Standard errors are clustered on both mutual fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Panel A. Base specification									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent Variable:	Net Flow (t)	Net Flow (t)								
Sample:	All Segments	Direct-Sold			Broker-Sold			Institutional		
Net flow (t-1)	0.197***	0.189***		0.191***	0.229***		0.266***	0.156***		0.172***
	(0.026)	(0.048)		(0.048)	(0.027)		(0.026)	(0.018)		(0.018)
Net return (t-1)	0.079**	0.040	0.081	0.032	0.135***	0.167***	0.140***	0.068**	0.080**	0.073*
	(0.032)	(0.045)	(0.060)	(0.047)	(0.023)	(0.029)	(0.022)	(0.034)	(0.038)	(0.038)
Four-factor Alpha (t-1)	0.101***	0.176***	0.174***	0.185***	0.021	0.022	0.032	0.053	0.045	0.060
	(0.030)	(0.049)	(0.052)	(0.050)	(0.020)	(0.024)	(0.021)	(0.037)	(0.044)	(0.043)
No-load fund?	0.056	0.101	-0.033		-0.202*	-0.242*		0.106	0.157	
	(0.095)	(0.240)	(0.332)		(0.119)	(0.149)		(0.156)	(0.180)	
Lagged expense ratio	0.034	-0.116	-0.031		0.029	0.117*		0.073	0.130	
	(0.037)	(0.114)	(0.132)		(0.041)	(0.063)		(0.134)	(0.162)	
Lagged 12b-1 fee	0.251	0.065	-0.355		0.245	0.237		1.330*	1.489	
	(0.190)	(0.488)	(0.719)		(0.232)	(0.293)		(0.808)	(0.908)	
Lagged Ln Fund TNA	-0.029	-0.041	-0.010		-0.080**	-0.052		0.018	0.061	
	(0.034)	(0.051)	(0.072)		(0.040)	(0.050)		(0.094)	(0.106)	
Lagged Ln Family TNA	0.067***	0.066*	0.071		0.108***	0.126***		-0.026	-0.042	
	(0.026)	(0.038)	(0.049)		(0.034)	(0.044)		(0.062)	(0.062)	
Fund Age in Years	-0.022***	-0.037***	-0.045***		-0.016***	-0.022***		-0.065***	-0.080***	
	(0.002)	(0.005)	(0.005)		(0.002)	(0.003)		(0.016)	(0.019)	

Monthly Flow-Performance Sensitivity Across Three Market Segments, Actively Managed Funds (1993 to 2004)

Panel A. Base specification (continued)										
H_0: Coefficient on lagged net flows is equal to direct					0.460		0.158	0.527		0.706
H_0: Coefficient on lagged net return is equal to direct					0.033**	0.124	0.015**	0.583	0.983	0.463
H_0: Coefficient on 4-factor alpha is equal to direct					0.001***	0.002***	0.001***	0.029***	0.027**	0.037***
Include investment-objective-month fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Include investment-objective-month-segment fixed effects?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	149,607	149,607	150,039	169,254	149,607	150,039	149,607	149,607	150,039	169,254
R^2	0.0683	0.0853	0.0483	0.0835	0.0853	0.0483	0.0853	0.0853	0.0483	0.0835

Monthly Flow-Performance Sensitivity Across Three Market Segments, Actively Managed Funds (1993 to 2004)

	Panel B. Specification that Allows for Nonlinearities in Sensitivity to Raw Returns									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent Variable:	Net Flow (*t*)				Net Flow (*t*)					
	All	Direct-	Direct-	Direct-	Broker-	Broker-	Broker-	Institutio	Institutio	Institutio
Sample:	Segments	Sold	Sold	Sold	Sold	Sold	Sold	nal	nal	nal
Net flow (*t*-1)	0.197***	0.188***		0.190***	0.229***		0.266***	0.156***		0.172***
	(0.026)	(0.049)		(0.048)	(0.026)		(0.026)	(0.018)		(0.018)
Net return (*t*-1)	0.028	-0.037	-0.005	-0.044	0.101***	0.134***	0.109***	0.046	0.052	0.052
	(0.039)	(0.052)	(0.069)	(0.052)	(0.030)	(0.037)	(0.028)	(0.039)	(0.043)	(0.043)
Net return (*t*-1) in top 20%	0.509***	0.910***	1.013***	0.896***	0.266***	0.276***	0.271***	0.160	0.204	0.218
	(0.115)	(0.208)	(0.224)	(0.182)	(0.096)	(0.107)	(0.095)	(0.139)	(0.140)	(0.140)
Net return (*t*-1) in bottom 20%	-0.292***	-0.522***	-0.574***	-0.510***	-0.177**	-0.164*	-0.134*	-0.134	-0.162	-0.047
	(0.086)	(0.142)	(0.182)	(0.133)	(0.085)	(0.096)	(0.082)	(0.128)	(0.138)	(0.128)
Four-factor alpha (*t*-1)	0.087***	0.153***	0.150***	0.161***	0.014	0.016	0.026	0.047	0.038	0.055
	(0.027)	(0.043)	(0.045)	(0.044)	(0.020)	(0.024)	(0.021)	(0.036)	(0.044)	(0.043)
No-load fund?	0.049	0.089	-0.046		-0.201*	-0.241		0.104	0.155	
	(0.095)	(0.239)	(0.331)		(0.119)	(0.149)		(0.156)	(0.180)	
Lagged expense ratio	0.030	-0.121	-0.037		0.026	0.115*		0.073	0.129	
	(0.037)	(0.114)	(0.132)		(0.041)	(0.063)		(0.136)	(0.164)	
Lagged 12b-1 fee	0.256	0.086	-0.331		0.245	0.237		1.328*	1.488	
	(0.190)	(0.484)	(0.715)		(0.232)	(0.292)		(0.806)	(0.906)	
Lagged Ln (Fund TNA)	-0.029	-0.042	-0.011		-0.079**	-0.051		0.018	0.062	
	(0.034)	(0.050)	(0.072)		(0.040)	(0.050)		(0.094)	(0.106)	
Lagged Ln (Family TNA)	0.068***	0.068*	0.073		0.109***	0.126***		-0.026	-0.042	
	(0.026)	(0.038)	(0.049)		(0.034)	(0.044)		(0.062)	(0.062)	
Fund age in years	-0.022***	-0.036***	-0.045***		-0.016***	-0.022***		-0.065***	-0.080***	
	(0.002)	(0.005)	(0.005)		(0.002)	(0.003)		(0.016)	(0.019)	

Monthly Flow-Performance Sensitivity Across Three Market Segments, Actively Managed Funds (1993 to 2004)

Panel B. Specification that Allows for Nonlinearities in Sensitivity to Raw Returns (continued)										
H_0: Coefficient on lagged net flows is equal to direct					0.448			0.154	0.543	0.726
H_0: Coefficient on lagged net return is equal to direct					0.008***	0.031**	0.002***	0.150	0.428	0.116
H_0: Coefficient on top 20% dummy is equal to direct					0.004***	0.002***	0.001***	0.001***	0.001***	0.002***
H_0: Coefficient on bottom 20% dummy is equal to direct					0.026**	0.030**	0.008***	0.039**	0.068*	0.015**
H_0: Coefficient on four-factor alpha is equal to direct					0.001***	0.001***	0.001***	0.035**	0.033**	0.056*
Include investment-objective-month fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Include investment-objective-month-segment fixed effects?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	149,607	149,607	150,039	169,254	149,607	150,039	149,607	149,607	150,039	169,254
R^2	0.0691	0.0863	0.0495	0.0844	0.0863	0.0495	0.0853	0.0863	0.0495	0.0844

Table IA.III

Monthly Flow-Performance Sensitivity using Specification in Bergstresser, Chalmers, and Tufano (2009)

This table reports panel regressions in which the dependent variable is monthly net percentage fund flow, using the standard definition of flow, growth in TNA less capital appreciation. The unit of observation is actively managed fund i in month t. All regressions include the following fund-level control variables interacted with market segment fixed effects, the coefficients of which are not reported: lagged expense ratio, lagged no-load fund dummy, lagged 12b-1 fee, lagged log of fund TNA, lagged log of family TNA, and current fund age measured in years. All regressions also include market segment-investment objective-month fixed effects. The specification is intended to match Table 6 of Bergstresser, Chalmers, and Tufano (2009), except that we use monthly flow instead of annual flow, and we exclude index funds. Standard errors are clustered on both mutual fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)		(4)	
Dependent Variable:	Net Flow (t)		Net Flow (t)		Net Flow (t)		Net Flow (t)	
Sample:	Direct-Sold	Broker-Sold	Direct-Sold	Broker-Sold	Direct-Sold	Broker-Sold	Direct-Sold	Broker-Sold
Net flow (t-1)	0.188***	0.228***	0.187***	0.227***	0.188***	0.228***	0.187***	0.227***
	(0.048)	(0.026)	(0.048)	(0.026)	(0.048)	(0.026)	(0.048)	(0.026)
Net return (t-1)	0.114***	0.146***	0.025	0.132***	0.042	0.135***	0.027	0.120***
	(0.037)	(0.018)	(0.037)	(0.023)	(0.045)	(0.023)	(0.035)	(0.025)
Net return (t-1) * Net return (t-1) > 0?			0.134***	0.038			0.123**	-0.027
			(0.053)	(0.053)			(0.054)	(0.061)
Four-factor alpha (t-1)					0.174***	0.021	0.169***	0.028
					(0.048)	(0.020)	(0.056)	(0.025)
Four-factor alpha (t-1) * four-factor alpha (t-1) > 0?							0.005	-0.014
							(0.058)	(0.038)
H_0: Coefficients on lagged net return equal across segments?	0.370		0.069*		0.034**		0.013**	
H_0: Coefficients on positive lagged net return equal across segments?			0.690				0.251	
H_0: Coefficients on four-factor alpha equal across segments?					0.001***		0.014**	
H_0: Coefficients on positive four-factor alpha equal across segments?							0.004***	
Sample size	126,537		126,537		126,537		126,537	
R^2	0.0870		0.0874		0.0885		0.0888	

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Table IA.IV

Monthly Fund Performance of Actively Managed Funds Across Three Market Segments (1993 to 2004)

The table below replicates the panel regressions in Table III Panel A except that the sample below also includes funds in the institutional market segment, and the regressions include a dummy variable indicating an institutional fund. We also report coefficients on the control variables that were not reported in Table III. The sample is restricted to nonspecialty actively managed domestic equity funds operating between January 1993 and December 2004 for which we obtain fund-level distribution channel data from the FRC. The performance measure in column (1) is fund *i*'s four-factor alpha estimated from net returns over the prior 24 months, while in column (2) it is fund *i*'s return gap measure (i.e., the difference between fund *i*'s gross returns and the gross returns predicted based on its lagged holdings, as calculated in Kacperczyk, Sialm, and Zheng (2008)). The dependent variable in column (3) identifies those funds with above-median values of active share and tracking error as calculated in Cremers and Petajisto (2009), where we allow the median value to vary across investment objective-year pairs. The fact that data on active share and tracking error are only available in those months that mutual funds disclose their holdings explains the smaller number of observations in column (3). In column (4), we measure a fund's one-factor beta as the beta on the market portfolio in the one-factor model. All regressions include investment objective-month fixed effects. The distribution segment dummy variables are equal to one if 75% or more of fund *i*'s TNA is distributed through that segment. Standard errors are clustered on both mutual fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	(1) Four-Factor Alpha	(2) Return Gap	(3) Above-Median Values of Active Share & Tracking Error?	(4) One-Factor Beta
Direct-sold fund dummy (*t*)	0.076***	0.068***	0.079***	-0.038*
	(0.028)	(0.025)	(0.030)	(0.022)
Institutional fund dummy (*t*)	-0.031	0.036	-0.051*	-0.009
	(0.021)	(0.022)	(0.030)	(0.017)
No-load fund?	-0.009	-0.005	0.037	0.023
	(0.027)	(0.018)	(0.029)	(0.016)
Lagged expense ratio	-0.101**	-0.021	0.240***	0.042***
	(0.040)	(0.032)	(0.030)	(0.009)
Lagged 12b-1 fee	0.040	0.097**	-0.141**	0.037
	(0.073)	(0.048)	(0.070)	(0.027)
Lagged Ln (Fund TNA)	-0.025***	-0.030***	-0.010	0.008**
	(0.010)	(0.006)	(0.008)	(0.005)
Lagged Ln (Family TNA)	0.009	0.029***	-0.030***	0.008**
	(0.007)	(0.005)	(0.007)	(0.004)

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Table IA.IV
Monthly Fund Performance of Actively Managed Funds Across Three Market Segments (continued)

Lagged portfolio turnover	0.000[*]	0.000	9.190	5.830
	(0.000)	(0.000)	(0.000)	(0.000)
Fund age in years	-0.001	0.000	0.001	0.000
	(0.001)	(0.000)	(0.001)	(0.000)
Lagged net flow	0.001[**]	0.000	0.000	0.000
	(0.001)	(0.000)	(0.000)	(0.000)
Lagged standard deviation of net flow	-0.004	-0.001	0.012[*]	-0.010[*]
	(0.009)	(0.007)	(0.006)	(0.005)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes
Fund-level control variables?	Yes	Yes	Yes	Yes
Sample size	144,896	115,675	26,648	144,896
R^2	0.1246	0.0240	0.1387	0.1431
H_0: Direct-sold = institutional?	0.000[***]	0.153	0.000[***]	0.166

Table IA.V

Monthly Fund Performance Across Market Segments (using Subsample of Funds with Ticker, Morningstar Rating, and Morningstar Investment Objectives) (1996 to 2002)

Panel A replicates the panel regressions in Table III Panel A except that in the sample below we require funds to have a ticker, Morningstar rating, and Morningstar investment objective. Panel B further restricts the sample to actively managed small-cap growth funds, but is otherwise identical to Panel A. Data availability for the Morningstar rating and investment objectives restricts the sample in both panels to the 1996 to 2002 period. The table below reports coefficients from panel regressions of fund i's monthly performance on fund and family characteristics. The performance measure in column (1) is fund i's four-factor alpha estimated from net returns over the prior 24 months, while in column (2) it is fund i's return gap measure (i.e., the difference between fund i's gross returns and the gross returns predicted based on its lagged holdings, as calculated in Kacperczyk, Sialm, and Zheng (2008)). The dependent variable in column (3) identifies those funds with above-median values of active share and tracking error as calculated in Cremers and Petajisto (2009), where we allow the median value to vary across investment objective-year pairs. The fact that data on active share and tracking error are only available in those months that mutual funds disclose their holdings explains the smaller number of observations in column (3). In column (4), we measure a fund's one-factor beta as the beta on the market portfolio in the one-factor model. All regressions include investment objective-month fixed effects. The direct-sold segment dummy variable is equal to one if 75% or more of fund i's TNA is distributed through the direct-sold segment. Standard errors are clustered on both fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Panel A. All Actively Managed Domestic Equity Funds			
	(1)	(2)	(3)	(4)
			Above-Median Values of	
	Four-Factor		Active Share &	One-Factor
Dependent Variable:	Alpha	Return Gap	Tracking Error?	Beta
Direct-sold fund dummy (t)	0.079*	0.074**	0.070**	0.000
	(0.043)	(0.031)	(0.035)	(0.019)
No-load fund?	-0.011	-0.002	0.022	0.004
	(0.047)	(0.028)	(0.047)	(0.018)
Lagged expense ratio	-0.086***	-0.051	0.150***	0.031***
	(0.025)	(0.040)	(0.046)	(0.009)
Lagged 12b-1 fee	0.043	0.160***	-0.070	0.036
	(0.094)	(0.060)	(0.098)	(0.027)
Lagged Ln (Fund TNA)	-0.025*	-0.043***	-0.007	0.006
	(0.014)	(0.009)	(0.010)	(0.005)
Lagged Ln (Family TNA)	0.013	0.038***	-0.034***	0.000
	(0.009)	(0.009)	(0.009)	(0.004)

Panel A. All Actively Managed Domestic Equity Funds (continued)				
Lagged portfolio turnover	0.000*	0.000	-2.350	-5.310
	(0.000)	(0.000)	(0.000)	(0.000)
Fund age in years	-0.002	0.000	0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.000)
Lagged net flow	0.002***	0.000	0.000	0.000
	(0.001)	(0.000)	(0.000)	(0.000)
Lagged standard deviation of net flow	-0.023	0.000	0.010	-0.006
	(0.009)	(0.010)	(0.007)	(0.007)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes
Fund-level control variables?	Yes	Yes	Yes	Yes
Sample size	67,375	60,261	12,248	67,375
R^2	0.2021	0.0458	0.1940	0.4505

Panel B. Sample Restricted to Actively Managed Small-Cap Growth Funds				
	(1)	(2)	(3)	(4)
Dependent Variable:	Four-Factor Alpha	Return Gap	Above-Median Values of Active Share & Tracking Error?	One-Factor Beta
Direct-sold fund dummy (t)	0.225***	0.275***	0.100*	-0.043
	(0.086)	(0.075)	(0.055)	(0.030)
No-load fund?	-0.071	-0.075	-0.084*	0.009
	(0.095)	(0.078)	(0.046)	(0.029)
Lagged expense ratio	-0.104***	-0.081*	0.172**	0.026***
	(0.007)	(0.045)	(0.078)	(0.009)
Lagged 12b-1 fee	0.118	0.229**	-0.268**	0.081
	(0.193)	(0.116)	(0.131)	(0.051)

Panel B. Sample Restricted to Actively Managed Small-Cap Growth Funds (continued)				
Lagged Ln (Fund TNA)	-0.072**	-0.041	-0.011	0.001
	(0.035)	(0.027)	(0.019)	(0.010)
Lagged Ln (Family TNA)	0.046**	0.049***	-0.061***	-0.005
	(0.020)	(0.019)	(0.014)	(0.007)
Lagged portfolio turnover	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Fund age in years	-0.004	-0.008**	0.000	-0.002
	(0.005)	(0.003)	(0.003)	(0.002)
Lagged net flow	0.002	0.000	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Lagged standard deviation of net flow	-0.039	0.012	0.028**	0.002
	(0.030)	(0.027)	(0.013)	(0.007)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes
Fund-level control variables?	Yes	Yes	Yes	Yes
Sample size	14,800	13,490	2,792	14,800
R^2	0.1921	0.0477	0.2376	0.553

Table IA.VI

Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Three Market Segments (1993 to 2004)

The table below replicates the regressions in Table VI except that columns (4) through (6) reports results from a sample that also includes funds in the institutional market segment. We also report coefficients on the control variables that were not reported in Table VI. The table below reports coefficients from panel regressions of fund i's monthly four-factor alpha on fund and family characteristics in a sample of domestic equity funds operating between January 1993 and December 2004 for which we obtain distribution channel data from the FRC. Fund i's four-factor alpha is estimated from net returns over the prior 24 months. The index fund dummy variable equals one if fund i is passively managed, and the active dummy variables equal one if fund i is actively managed. The direct-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the direct-sold channel. The broker-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the broker-sold channel. The institutional dummy variable equals one if 75% or more of fund i's TNA is distributed through institutional channel. Column (1) contains all funds, while columns (2), (3), and (4) are restricted to funds in the direct-sold, broker-sold, and institutional segments respectively. Columns (5) and (6) include funds from all segments. All regressions include CRSP Standard and Poor's investment category-month fixed effects. Standard errors are clustered on both mutual fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Four-Factor Alpha (t)					
	All Segments	Direct-Sold	Broker-Sold	Institutional	All	All
Index fund dummy (t)	0.073** (0.037)					
Active fund dummy (t)	Omitted category					
Direct-sold dummy (t) * Index fund (t)		0.018 (0.035)			0.108*** (0.039)	-0.005 (0.044)
Direct-sold dummy (t) * Active fund (t)		Omitted category			0.085*** (0.023)	0.076*** (0.027)
Broker-sold dummy (t) * Index fund (t)			0.093** (0.039)		0.089** (0.036)	-0.006 (0.043)
Broker-sold dummy (t) * Active fund (t)			Omitted category		Omitted category	Omitted category
Institutional dummy (t) * Index fund (t)				0.055 (0.049)	0.108** (0.050)	0.000 (0.053)
Institutional dummy (t) * Active fund (t)				Omitted category	0.023 (0.025)	-0.030 (0.021)

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Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Three Market Segments (continued)

Lagged expense ratio						-0.101**
						(0.039)
No-load fund?						-0.006
						(0.025)
Lagged 12b-1 fee						0.043
						(0.072)
Lagged Ln (Fund TNA)						-0.024***
						(0.009)
Lagged Ln (Family TNA)						0.009
						(0.007)
Lagged portfolio turnover						0.000*
						(0.000)
Fund age in years						-0.001*
						(0.001)
Lagged net flow						0.001**
						(0.000)
Lagged standard deviation of net flow						-0.004
						(0.009)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	151,674	51,469	71,364	28,841	151,674	151,674
R^2	0.1241	0.0973	0.1458	0.2304	0.1244	0.1257

Table IA.VII

Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Market Segments (1993 to 2004):

Fama-MacBeth Regressions

The table reports the results of monthly Fama-MacBeth (1973) regressions instead of the panel regressions of Table VI. The reported coefficients and R^2 are the average coefficients and R^2 across 143 months. Fund i's four-factor alpha is estimated from net returns over the prior 24 months. The index fund dummy variable equals one if fund i is passively managed, and the active dummy variables equal one if fund i is actively managed. The direct-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the direct-sold channel. The broker-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the broker-sold channel. Column (1) contains all retail funds, while columns (2) and (3) are restricted to funds in the direct-sold or broker-sold segments. Columns (4) and (5) include funds from both segments. All regressions include CRSP Standard and Poor's investment category-month fixed effects. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Four-Factor Alpha (t)				
Sample:	Both Segments	Direct-Sold	Broker-Sold	Both Segments	
Index fund dummy (t)	0.066* (0.034)				
Active fund dummy (t)	Omitted category				
Direct-sold dummy (t) * Index fund (t)		0.003 (0.037)		0.105*** (0.038)	0.005 (0.047)
Direct-sold dummy (t) * Active fund (t)		Omitted category		0.080*** (0.018)	0.103*** (0.027)
Broker-sold dummy (t) * Index fund (t)			0.101** (0.039)	0.095** (0.039)	-0.022 (0.044)
Broker-sold dummy (t) * Active fund (t)			Omitted category	Omitted category	Omitted category
Lagged expense ratio					-0.146*** (0.042)
No-load fund?					-0.039 (0.024)
Lagged 12b-1 fee					0.103 (0.065)

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Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Market Segments (1993 to 2004):
Fama-MacBeth Regressions (continued)

Lagged Ln (Fund TNA)					-0.025***
					(0.008)
Lagged Ln (Family TNA)					0.009
					(0.006)
Lagged portfolio turnover					0.000
					(0.000)
Fund age in years					-0.002**
					(0.001)
Lagged net flow					0.001***
					(0.000)
Lagged standard deviation of net flow					-0.011
					(0.011)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes	Yes
Sample size	122,833	51,469	71,364	122,833	122,833
R^2	0.0001	0.0003	0.0001	0.0005	0.0021

Table IA.VIII

Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Market Segments (using Subsample of Funds with Ticker, Morningstar Rating, and Morningstar Investment Objectives) (1996 to 2002)

The table below replicates the panel regressions of Table VI, except that in the sample below we require funds to have a ticker, Morningstar rating, and Morningstar investment objective. Data availability for the Morningstar rating and investment objectives restricts the sample to the 1996 to 2002 period. Fund i's four-factor alpha is estimated from net returns over the prior 24 months. The index fund dummy variable equals one if fund i is passively managed, and the active dummy variables equal one if fund i is actively managed. The direct-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the direct-sold channel. The broker-sold dummy variable equals one if 75% or more of fund i's TNA is distributed through the broker-sold channel. Column (1) contains all retail funds, while columns (2) and (3) are restricted to funds in the direct-sold or broker-sold segments. Columns (4) and (5) include funds from both segments. All regressions include CRSP Standard and Poor's investment category-month fixed effects. Standard errors are clustered on both mutual fund family and month, and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:			Four-Factor Alpha (t)		
Sample:	Both Segments	Direct-Sold	Broker-Sold	Both Segments	
Index fund dummy (t)	0.066				
	(0.046)				
Active fund dummy (t)	Omitted category				
Direct-sold dummy (t) * Index fund (t)		0.006 (0.054)		0.099** (0.048)	-0.016 (0.057)
Direct-sold dummy (t) * Active fund (t)		Omitted category		0.077*** (0.027)	0.077* (0.042)
Broker-sold dummy (t) * Index fund (t)			0.110* (0.059)	0.103* (0.059)	0.014 (0.044)
Broker-sold dummy (t) * Active fund (t)			Omitted category	Omitted category	Omitted category
Lagged expense ratio					-0.086*** (0.025)
No-load fund?					-0.007 (0.043)

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Monthly Fund Four-Factor Alphas of Actively Managed and Index Funds Across Market Segments (using Subsample of Funds with Ticker, Morningstar Rating, and Morningstar Investment Objectives) (continued)

Lagged 12b-1 fee					0.046
					(0.091)
Lagged Ln (Fund TNA)					-0.025*
					(0.013)
Lagged Ln (Family TNA)					0.013
					(0.009)
Lagged portfolio turnover					0.000*
					(0.000)
Fund age in years					-0.002
					(0.001)
Lagged net flow					0.002***
					(0.001)
Lagged standard deviation of net flow					-0.024
					(0.014)
Investment objective-month fixed effects?	Yes	Yes	Yes	Yes	Yes
Sample size	69,573	31,169	38,404	69,573	69,573
R^2	0.2005	0.1925	0.2307	0.2006	0.2020