

Alternative marketing for alternative investments

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Abstract

Hedge funds are currently banned from advertising. New legislation contemplates lifting this ban, thus raising the question of whether the ban is good policy. We address this question by analyzing a form of indirect hedge fund advertising that already exists: advertising by institutions running both hedge funds and mutual funds, where the ads promote either the overall institution or specific mutual fund products. We find that institutions increase such advertising after hedge fund flows sag, and that such advertising predicts subsequent increased inflows for hedge funds. Thus, hedge funds' flows appear to influence the decision to advertise, and the advertisements are effective in enticing new inflows to the hedge funds. Lifting the ban would level the playing field by allowing all hedge funds to advertise, rather than just those with mutual fund affiliates. However, in addition to increased net inflows, the ads are also followed by sub-par hedge fund returns after the advertising period, which is some evidence in support of the ban.

I. Introduction

One way the SEC protects consumers is by regulating advertisements. Funds organized to comply with the Investment Company Act of 1940 (the “40 Act”), commonly known as mutual funds, can be advertised only just so, with performance reported in standardized units, and for standardized sample periods, and with its predictive power disclaimed in standardized language. Funds organized to avoid the 40 Act, in particular the funds commonly known as hedge funds, cannot advertise at all. This ban is notwithstanding the restriction of such funds to investors with significant wealth or income. Presumably, the SEC has been concerned that even prosperous investors are at risk of harm from hedge fund advertisements.

This risk is now being reconsidered. The “Jumpstart Our Business Startups” (i.e. JOBS) Act would grant a limited dispensation for advertising, or as it is called, “general solicitation.”¹ It has not happened yet, though, as investor protection groups and others have resisted, and then-commissioner Mary Schapiro delayed this part of the Act in 2012.² So the question of the effect of hedge fund advertising is both open and timely. The goal of this paper is to address this question by analyzing the effect of existing advertisements that potentially amount to back-door hedge fund advertisements.

We analyze advertisements by the institutions managing both hedge funds and mutual funds, the so-called “side-by-side” funds (Cici, Gibson and Moussawi, 2010, Nohel, Zheng and Wang, 2010).³ Because these companies can advertise themselves or their mutual funds, they can to some extent attract indirect attention to their hedge funds through advertising. Thus, a

¹ See SEC Release No. 33-9354; File No. S7-07-12, for the Proposed Rules on “eliminating the prohibition against general solicitation and general advertising in rule 506 and rule 144a offerings.”

² See “SEC Chief Delayed Rule Over Legacy Concerns,” *The Wall Street Journal*, December 2, 2012

³ Through this study we refer to hedge funds and mutual funds operated by the same management fund as being affiliated funds, or “side-by-side” funds. We use these terms interchangeably.

database on their advertising is a window onto the effect of hedge fund advertising. This paper makes use of such a database, the Ad\$ponder database, often employed in the marketing literature (e.g. Bronnenberg, Dube and Mela, 2010), which covers millions of brands and the whole range of media. By relating monthly ad buys of mutual funds management companies/brands to the performance and flows of both the hedge funds and the mutual funds, both before the buy and after, we can start to understand the hedge funds' role in the decision to advertise, and the advertisements' effects on the hedge funds.

Our first main result is that, controlling for hedge fund performance, low hedge fund flows predict ad buys – both the decision to advertise at all, and the decision to advertise more. The relation is incremental to the effect of the mutual funds' flows, performance and other circumstances, which enter as expected from other studies. The relation is also particularly strong when the ads promote the parent institutions in general, rather than the sibling mutual funds in particular. This result indicates that hedge funds play a role in parent institutions' advertising decisions, in particular that the ads aim to attract new attention to the funds when the enthusiasm of current investors trails off.

Our second main result is that the ads work, in that they attract investment to the hedge funds: net flows after ads are higher than those to similar hedge funds whose affiliates did not advertise. In contrast with the first result, where where *lagging* flows predict ads for the parent institution, rather than ads for sibling mutual funds, the relation of *subsequent* flows as a result of advertising is more pronounced for ads for sibling mutual funds, rather than the parent company. The latter result suggests that the wealthier investors responding to the mutual-fund ads are cross-sold the hedge funds.

A third result is that performance after ads is weak.

These findings inform the current regulatory debate by highlighting the current uneven playing field, where hedge funds with mutual fund affiliates can benefit from ads, whereas stand-alone hedge fund companies cannot. Additionally, these findings also serve as a “sneak-peak” for the effects of allowing hedge fund general solicitation by demonstrating the effectiveness of advertising, even by affiliated entities, in raising funds. In this regard, the findings also serve as a caution, demonstrating the poor performance outcomes for investors attracted to hedge funds by such advertisement.

Our study builds on a number of strands in current academic literature. In particular, our estimation of hedge fund advertising through affiliates relies on using data from “side by side” management of hedge funds and mutual funds, which have been studied by Cici, Gibson and Moussawi, 2010, and Nohel, Zheng and Wang, 2010.

Additionally, our study also builds on the literature examining advertising by mutual funds. Sirri and Tufano, 1998, examines mutual fund flows as a result of marketing efforts (proxied by fees) and media mentions, concluding that well-performing funds market more, and media attention and fund complex size attract flows by reducing investor search costs. Jain and Wu, 2000, examine the determinants and effects of advertising for mutual funds, and document that good past performance drives advertising, which in turn leads to higher inflows. Reuter and Zitzewitz, 2005, examine the link between editorial content in newspapers and personal finance publications and advertising expenditure. In Nanda, Wang and Zheng, 2004, a star performance by one fund in a family is seen to draw inflows to funds throughout the family, and similarly, Verbeek and Huij ,2007, document a spillover effect from marketing among mutual funds within a given fund family. They show that funds with low expense ratios in a given fund family benefit from funds with higher expense ratios in the same family and

conclude that this is the result of subsidization across funds within the family. Gallaher, Kaniel and Starks, 2010, conduct a detailed study on the effects of mutual fund advertising, documenting differing flow-advertising relationships at the industry, fund family, and individual fund level.⁴

Our contribution to these literatures is the novel exploration of the intersection of the two broad strands (side-by-side management and mutual fund advertising) to address a timely policy question: Should hedge funds be allowed to advertise?

The paper proceeds in five sections. Section II states the hypotheses, Section III describes the data, Section IV presents results of our empirical tests, and Section V summarizes and concludes.

II. Hypotheses

Building on findings from the mutual fund literature, we propose two sets of testable hypotheses, one concerning the effect of hedge funds on the decision to advertise, and the other concerning the effect of the advertising on the hedge funds.

II.A The Effect of Hedge Funds on Advertising Decisions

As documented in Jain and Wu, 2000, strong past performance for mutual funds correlates with ad buys, presumably to inform investors of the performance. If hedge funds figure in the decision to advertise affiliate mutual funds, the goal could similarly be to raise awareness of good performance. This is our first hypothesis:

H1a. The advertising of a hedge fund's parent institution or its affiliated mutual funds is positive in the hedge fund's recent performance.

⁴ The marketing literature has also examined mutual fund advertising (e.g. Jones and Smythe (2003)), but does not focus on the determinants and effects of advertising, but rather on the exact contents of the advertising.

The next hypothesis concerns the hedge funds' recent flows. Most hedge-fund managers are presumably interested in attracting new investment and retaining existing investment. But looking across managers, those with relatively low net flows are likely to be relatively more interested, for two reasons. First, as explored theoretically by Aragon and Qian (2010), hedge funds' specialization in less-liquid asset classes makes outflows costly. Second, hedge funds' adaptation of their operations to their size and revenue stream also makes outflows costly. Thus, the hypothesis is that low net flows drive advertising:

H1b. The advertising of a hedge fund's parent institution or its affiliated mutual funds is negative in the hedge fund's recent net flows.

While it is possible that either type of advertising, that of parent institutions or of affiliated mutual funds, is effective for a hedge fund, parent advertising reflects more directly on the hedge fund, and is thus intuitively the more effective. We can test this hypothesis because the data identify what is being advertised. So the hypothesis is:

H1c. Family-level advertising is more positive in a hedge fund's recent performance, and more negative in a hedge fund's recent flows, than is affiliated-mutual-fund advertising.

II.B The Effect of Advertising on Hedge Funds

In Gallaher, Kaniel and Starks (2010), mutual funds' advertising is seen to increase their net flows. If the advertising of affiliated mutual funds serves to advertise hedge funds, then it should analogously increase the hedge funds' net flows:

H2a. The net flows into a hedge fund are positive in the recent advertising of its parent institution or its affiliated mutual funds.

This could be because either 1) investors get a good impression of the management company, and this impression passes through to its products including its hedge funds, or 2) investors get a good impression of the mutual funds, and are pitched the hedge funds when they respond. Intuitively, the former associates more with parent advertising and the latter with affiliated-mutual-fund advertising. And as above, the effectiveness of parent-level advertising is likely stronger than that of affiliated mutual funds, so as a companion to H1c we have:

H2b. The net flows into a hedge fund are more positive in family-level than in affiliated-mutual-fund-level advertising.

III. Data and results

We employ three databases to test these hypotheses. The primary source of hedge-fund data is the Lipper TASS database. The performance and details of mutual funds are from the Center for Research in Security Prices (CRSP) survivor-bias free mutual funds database. Mutual fund advertising spending data is from the AdSpender database, provided by Kantar Media Intelligence. AdSpender monitors advertising expenditures and occurrence information for more than 3 million brands across 18 media including magazines, newspapers, TV, Radio and US internet.⁵ We extract the dollars spent each month on behalf of all companies in the mutual fund sector each month from January 2006 through December 2012 and merge this data with mutual fund and hedge fund data at the management firm level.

III.A Matching procedures and data description

In order to link hedge funds to mutual funds and their advertising, we first construct a sample of affiliated mutual funds and hedge funds. Cici, Gibson and Moussawi ,2010, and Nohel, Zheng and Wang, 2010, construct similar samples, where the former defines affiliated firms at the management company level and the latter merges funds at the manager level. Given our advertising data is at the management company and product level, and assuming that advertising decisions are more likely taken at the company level than the manager level, we determine affiliation of hedge funds and mutual funds at the management company level.

We merge the TASS and CRSP datasets at the management company level by name, and we define hedge funds and mutual funds to be “side-by-side,” or affiliated, if they are sponsored by the same management company. Periods where the sponsorship is concurrent are defined as “side-by-side periods”. This merged dataset is then merged with the Ad\$pende dataset at the management company level. The resulting dataset is used for our analysis.

The datasets and merges are presented graphically in Figure I. The left of the figure shows mutual funds, divided into those that are matched to hedge funds (B+D) and those that are not (A+C). For each of these types, we also separate those for which we have advertising data from Ad\$pende (C,D) and those for which we do not (A,B). On the right of the figure we have hedge funds, separated into those matched to the mutual fund data (F+G) and those that are not matched (E). The dark shaded “G” rectangle is the primary sample for the paper, because this is where we have hedge funds matched to mutual funds for which we have advertising data.

The appendix addresses other components of this merged database: the determinants and effects of “side-by-side” management (replicating the analysis of Cici, Gibson and Moussawi, 2010, and Nohel, Zheng and Wang, 2010) and the determinants and effects of

marketing for mutual funds (replicating the analysis of Jain and Wu, 2000, and Gallaher, Kaniel and Starks, 2010).

III.B Measures of advertising

The analysis uses indicator variables to quantify monthly ad spending along a number of dimensions. The first dimension is the decision to advertise at all: Ad_Dummy is one if the Ad\$pende database shows positive expenditure by the company in a given month and zero otherwise.

The second dimension is the decision to spend more than usual: More_dummy is one in months when the company spends above its average level across the sample period, and zero otherwise.

The third dimension is the decision to spend relatively more than the industry: Trend_dummy is one if the company's expenditure in a month, divided by the company's average expenditure, is higher than the industry's expenditure that month, divided by the industry's average expenditure.

The fourth dimension is the decision to commence a potentially multi-month ad campaign: First_dummy indicates the first month of ad spending after at least one month of no spending. Rather than being an indicator variable, it takes the value of the number of months of consecutive advertising. The value of this variable in the subsequent consecutive months of advertising is set to missing. For example, if a fund advertises in months 2,3, and 5, the ad_dummy is 01101 and the first_dummy is 02·01.

The fifth dimension, Ad_ratio, is this month's share of all money spent advertising a fund, looking forward and back. For example, if an affiliated mutual fund were to exhibit the

following ad spend: 0 in the first month, \$1,000 in the second month, \$3,000 in the third month and 0 in the fourth month, with no other observations, Ad_ratio would be computed as 0, .5, 1.5, 0.

IV. Results

IV.A Summary Statistics and Univariate Analysis

Table I provides a first look at the merged data with summary statistics and univariate analyses. Panel A sorts hedge funds into quartiles by their advertising frequency, i.e. the number of months with positive advertising divided by the total number of months the fund is in the sample. Average hedge fund and affiliate mutual fund characteristics are presented for each quartile. The panel also reports corresponding statistics for “side-by-side” hedge funds that have affiliated mutual funds without advertising data (Rectangle F in Figure 1) and hedge funds which are not side-by-side (Rectangle E in Figure 1). By and large, the hedge funds in F and G appear quite similar to those in our primary sample, indicating that the conditioning of our sample does not bias it along these dimensions.

For a first look at the conditions preceding the decision to advertise in a given month, Panel B reports the net flows and performance preceding advertising ($Ad_Dummy=1$) and non-advertising months ($Ad_Dummy=0$) for both the hedge funds and the affiliated mutual funds. Flows are lower before the advertising months, both among mutual funds, and among hedge funds, consistent with Hypothesis H1b. Performance, on the other hand, is higher before advertising months among mutual funds (as in Jain and Wu, 2000), but contrary to H1a, lower among hedge funds. In the following section we formally test the hypotheses, and then follow up on what the results imply for the role of advertising in hedge fund marketing.

IV.B Determinants of affiliated mutual funds' advertising

We test hypotheses about the determinants of advertising propensity across different management companies managing mutual funds and hedge funds. Results of the analysis are presented in Table II, Panel A. The dependent variable is the fraction of periods in which a management firm has any advertising spend and ranges from 0 to 1. The independent variables are the average hedge fund and mutual fund characteristics. Advertising propensity is negatively linked to incentive fees and hedge fund inception size, and positively linked into hedge fund lockup period, turnover ratio, and mutual fund size.

We test the hypotheses about the time series determinants of advertising with logit models in Table II, Panel B. The dependent variable is one of the indicators of advertising, defined above, and the independent variables include the flows and performance of the hedge funds and the affiliated mutual funds. We test H1a and H1b simultaneously by including both the hedge-fund's performance (with separate variables capturing a fund's style performance and its style-adjusted performance) and its recent net flows in the same model.

The first column of Panel B reports the determinants of Ad_Dummy, the variable indicating ad spending. We see that advertising is negative in hedge funds' flows, and we also see that advertising does not relate significantly to their style-adjusted returns. So as suggested by Panel A, H1b is borne out by the data, but H1a is not. The model also has another interesting result, besides the tests it was designed for: it shows that advertising is strongly negative in style returns. This implies that fund shrinkage due to the style, rather than performance, predicts advertising. This result is a cousin of H1b, in that both sources of shrinkage (low flows and low style returns) boost the marginal value of an additional dollar of flows.

The other columns of Panel B run the same model on the other indicators of advertising. The results are similar: hedge funds' flows always enter negatively, and their style-adjusted returns never enter positively. And as before, style returns are always strongly negative. The mutual-fund variables generally enter as one would expect from the literature on mutual-fund advertising.

Among the other hedge-fund variables, it is interesting to note the effect of fees: advertising increases in base fees, and decreases in incentive fees. This is consistent with a stronger role for current fee revenue, relative to potential future profit sharing, in the drive to advertise.

In Table III we break out the results of Table II by whether the advertising was on ads for the parent fund company (Panel A), or instead for the sibling affiliated mutual funds (Panel B). This decomposition shows that only company-level advertising bears out H1b with a significantly negative relation to hedge funds' recent flows. Also, only company-level advertising relates significantly to base and incentive fees. On the other hand, only mutual-fund-level advertising relates significantly to low returns of hedge funds' styles. Table III also has a side result for mutual funds, which while not surprising, is novel and worth noting: when mutual funds perform well, the specific mutual funds are advertised, but when they perform badly, the company as a whole is advertised.

IV.C Effects of affiliated mutual funds' marketing

We identify the effect of the ads on hedge funds' flows with a matched-sample approach. To each hedge fund whose parent company or sibling funds advertises in a given period, we match another hedge fund in our sample whose parent or siblings do not advertise.

We refer to the former as the advertising funds, and the latter as the non-advertising funds.⁶ We compare flows and performance after the advertising period for the advertising and matched non-advertising funds to determine the effects of advertising.⁷

Figure IV contrasts the advertising and non-advertising funds in event time: date 0 is a month with advertising for the advertising funds and not the non-advertising funds, and IV(A) shows fund returns, IV(B) shows style-adjusted returns, and IV(C) shows the funds' percentage flows, for the two surrounding years. After the advertising month, advertising funds show relatively higher net inflows and worse performance.

Using this same matched sample, we formally test for the effect of advertising on style-adjusted performance and flows with multiple regressions, where the regressors include the various measures of advertising. The results of this analysis are presented in Table IV. In Panels A (returns), B (style-adjusted performance), and C (flows).

The robust results in Table IV are a positive effect of advertising on flows, as predicted by hypothesis H2a, and a negative effect of advertising on style-adjusted performance. At the point estimates, net flows are about 0.5%/month higher, and performance 0.1%/month lower, after advertising. The former may contribute to the latter, to the extent that hedge funds experience decreasing returns to scale, as indicated by the findings of Fung et al (2008) and Naik et al (2007). The Panel B results also find significant persistence, as indicated by the strong positive relation of future to past performance.

⁶ In presented specifications, we match advertising funds to one other non-advertising fund in the same calendar month and broad category. We pick the non-advertising fund to minimize equally weighted differences in hedge fund performance, hedge fund flows, affiliated mutual fund performance and affiliated mutual fund flows. In unreported tests, we repeat the matching on just hedge fund performance, hedge fund flows, and on propensity scores estimated using the regression from Section 3.4. Our results are robust to these specifications.

⁷ This analysis is similar in spirit to the analysis performed by Jain and Wu, 2000, to estimate the effects of mutual fund advertising on subsequent mutual fund flows and performance.

The implications of these results are that mutual-fund advertising boosts flows to affiliated hedge funds, and that this boost in flows corresponds to a dip in performance. The flow results are consistent with the mutual fund advertising literature (e.g. Gallaher, Kaniel and Starks, 2010), which documents the effectiveness of mutual funds' advertising for their own flows. The dip in performance may to some extent justify the regulators' concern about the welfare costs of hedge-fund advertising, though as Bergstresser et al (2009) observe when comparing load to no-load mutual funds, the benchmark for a welfare analysis is unclear. The alternative for an investor drawn into an advertised fund could be no fund, rather than an unadvertised fund.

Table V is analogous to Table III, in that it breaks out the result by whether the advertising was for the parent company or for the affiliated mutual funds. This decomposition uncovers two notable relations. First, the positive relation of flows is not to company-level, but rather to mutual-fund-level, advertising. Second, the negative relation of performance is to company-level advertising. This casts some doubt on the idea that advertising-driven flows reduce performance, and it indicates that fund companies promote their hedge funds better by promoting specific successes than by promoting themselves. This begs the question why they don't always use mutual-fund advertising, but as Table III indicates, they don't always have a successful fund to promote. Additionally, hedge funds often have direct communication with parents companies but only indirect communication with affiliated mutual funds. Thus, advertising "needs" may be more easily communicated to parents companies than affiliated mutual funds.

IV.D Discussion of results

The main results are that low hedge-fund flows predict more advertising, which in turn predicts higher hedge-fund flows. In terms of the formal hypotheses, we find support for H1b, H1c and H2a:

Hypotheses	Description	Support?	Evidence
H1a	Hedge funds' superior performance leads to affiliate advertising	No	-
H1b	Hedge funds' flagging flows lead to affiliate advertising	Yes (weak)	Table II
H1c	Hedge funds are more likely to influence parent company affiliate advertising than product specific affiliate mutual fund advertising	Yes	Table IV
H2a	Affiliate advertising leads to increased hedge fund flows	Yes	Table III
H2b	Affiliate advertising at the parent company level leads to higher increased hedge fund flows than advertising at the product level	No	Table V

The twist is that, whereas the significant relation of past flows is to management-company ads, the significant relation of future flows is to affiliated-mutual-fund ads. The efficacy of ads for affiliated mutual funds is consistent with a strategy of upselling, whereby investors calling about the advertised funds are counseled into the hedge funds instead.

V. Conclusions

Advertising hedge funds is forbidden, but advertising related funds or the parent management company is not. Thus, the parent of both hedge and mutual funds can try to do indirectly what it can't do directly. In this paper we ask whether ads serve this purpose. We find that hedge funds serve as both cause and effect: abnormally low flows predict ads, and ads predict abnormally high flows. Thus, we conclude that hedge funds – in particular, hedge funds affiliated with mutual funds – play a role in their parent companies' marketing decisions.

In spirit, this is not dissimilar to outcomes that are seen in other cases where advertising is banned. In India, where liquor advertisements are banned, the industry relies on ‘surrogate’ advertising instead (Benegal, 2005).⁸ Similarly, in the United States, since advertising cigarettes has been banned in broadcast media since 1970, sports sponsorships and product placements have filled some of the void (see Pollay et al, 1996, for a survey of this literature). In the hedge-fund case, the advertising is less insidious, as it straightforwardly markets a relevant product.

Our results show that hedge funds without affiliated mutual funds are at a disadvantage, and thus would be particularly interested in leveling the playing field by ending the ban. Hedge funds with affiliated funds would lose this advantage but may still gain on net, as the benefit of their ads for their hedge funds would depend less on the success of their mutual funds. Regarding the benefit of hedge-fund ads for investors, we find that ads predict somewhat worse performance; whether this is a net loss to investors is an interesting question for future research.

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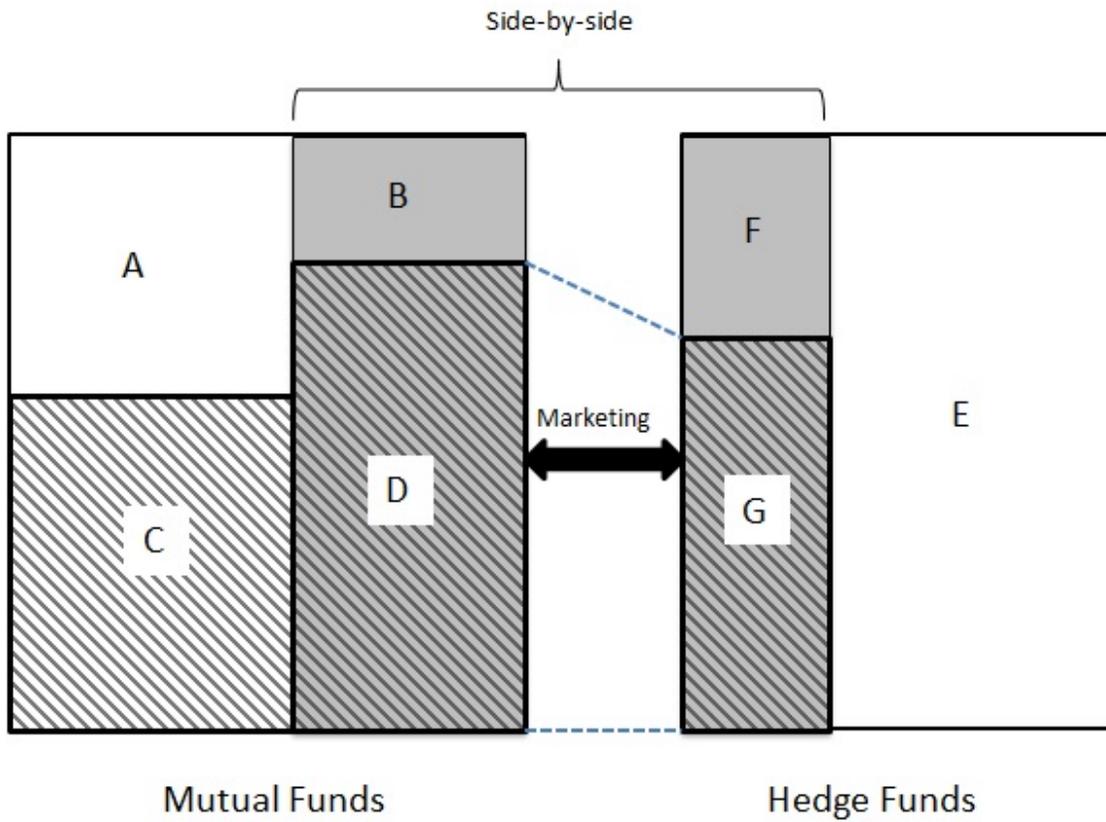
⁸ Surrogate advertising is the practice of ostensibly advertising a similarly branded product not subject to the advertising ban with the true intention of advertising the banned product. For example, surrogate products for alcohol used in Indian advertisements include club soda (seltzer) and music CDs.

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Figure I: Mutal funds and hedge funds classification

This figure details the construction of the sample used in our study. Side-by-side mutual funds and hedge funds and matched at the company level. Side-by-side hedge funds affiliated with mutual funds with advertising data are the G and D shaded rectangles.



Classification	Part	Number of funds
Mutual funds	A+B+C+D	37381
Side-by-side mutual funds	B+D	11365
Side-by-side mutual funds w/ ads	D	9895
Unaffiliated mutual funds w/ ads	C	14957
Hedge funds	E+F+G	17359
Side-by-side hedge funds	F+G	1505
Side-by-side hedge funds w/ ads	G	943

Figure II: Definition of Side-by-side period and side-by-side funds

This figure shows side-by-side periods graphically. As long as an investment company manages at least one hedge fund and one fund of funds, all entities managed by the company are side-by-side.

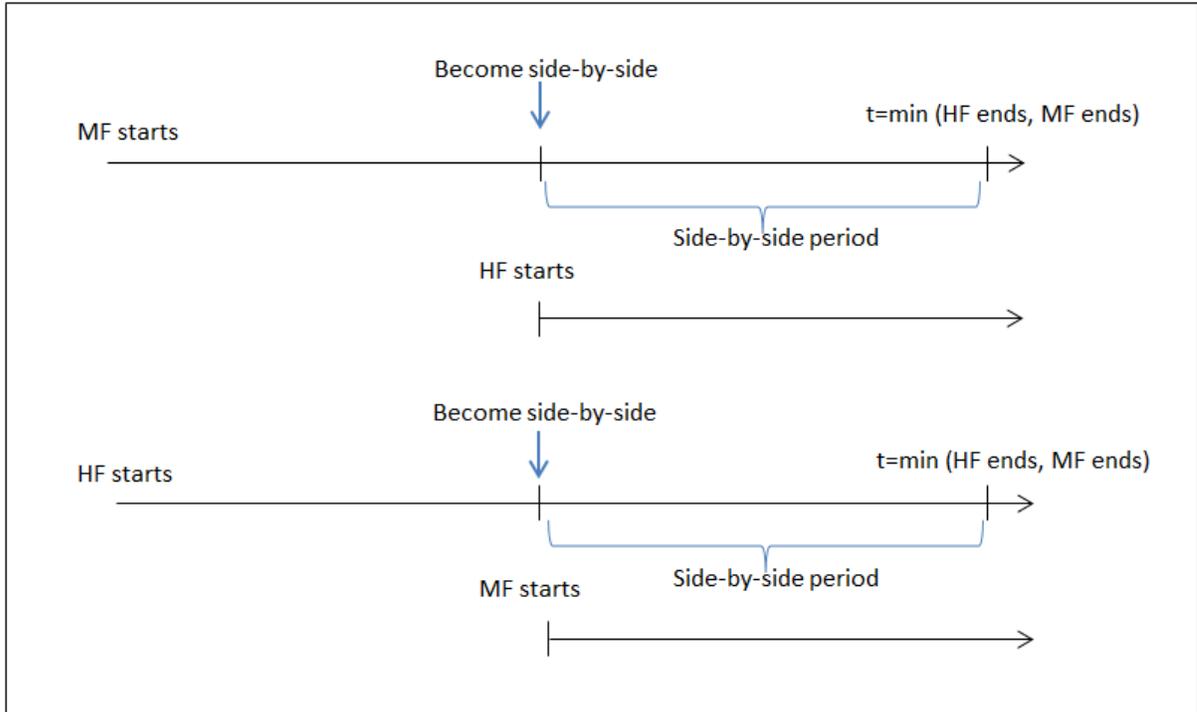


Figure III: Number of mutual fund firms advertising over time

This figure shows the number of investment firms in our sample advertising over time, plotted monthly.

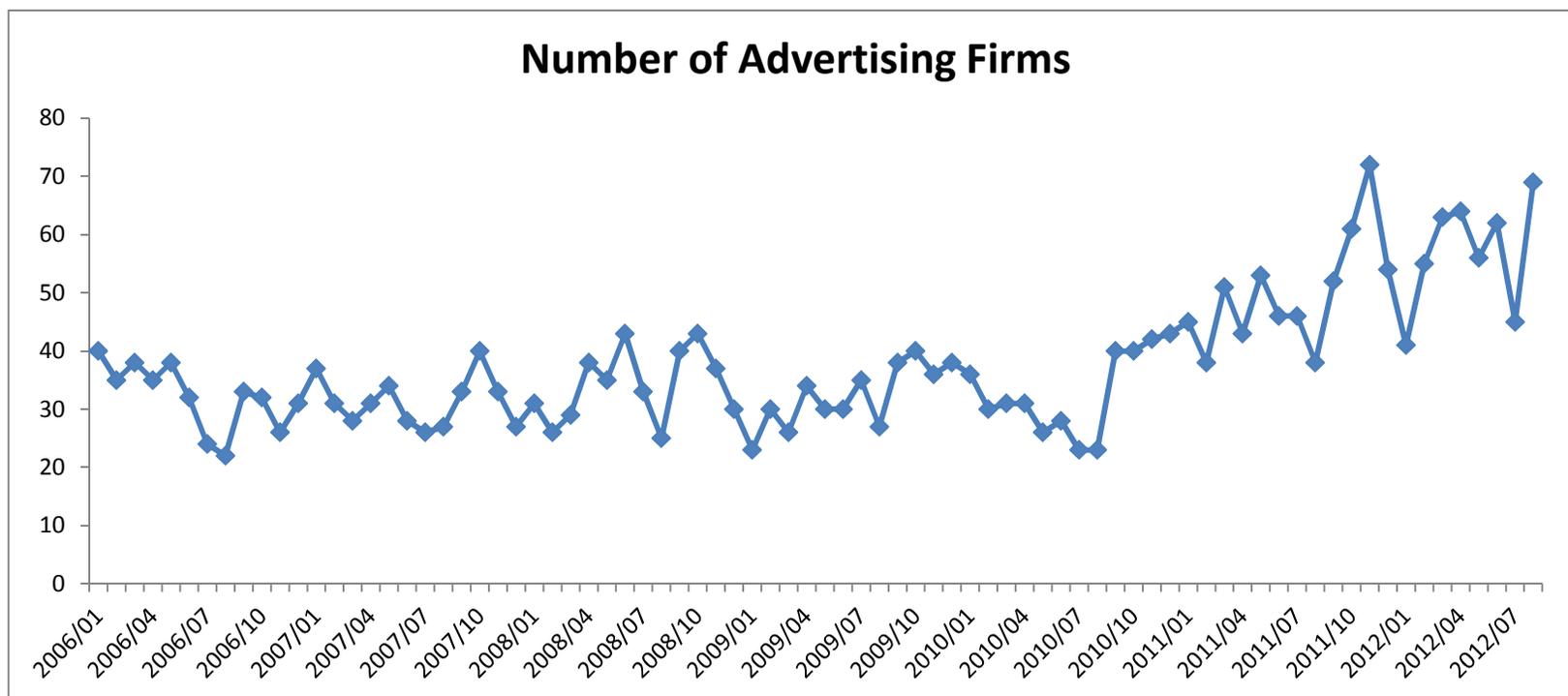


Figure IV: Univariate graphs

These graphs present the average returns, style adjusted returns and net inflows for advertising and matched non-advertising hedge funds for 12 months before and after a given advertising period.

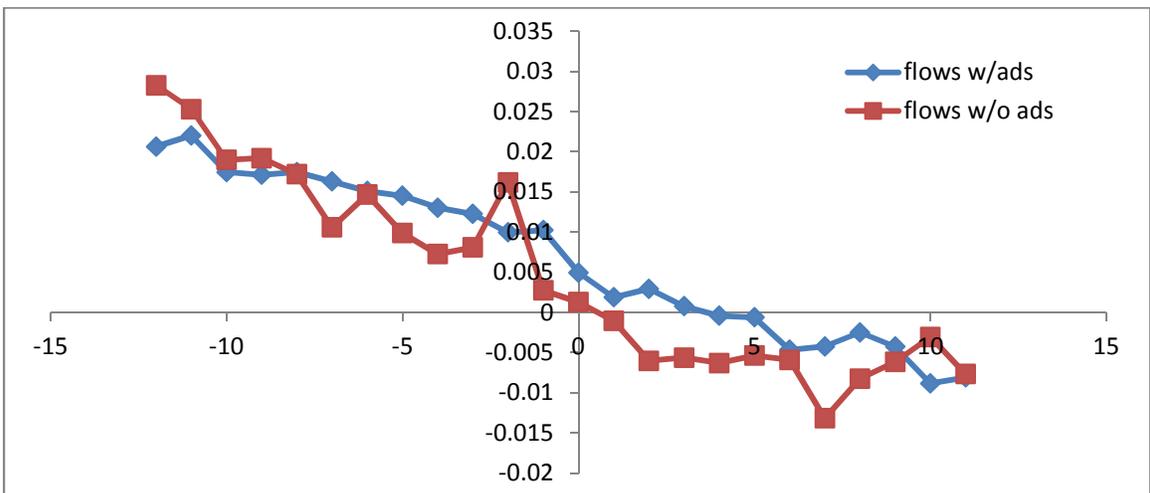
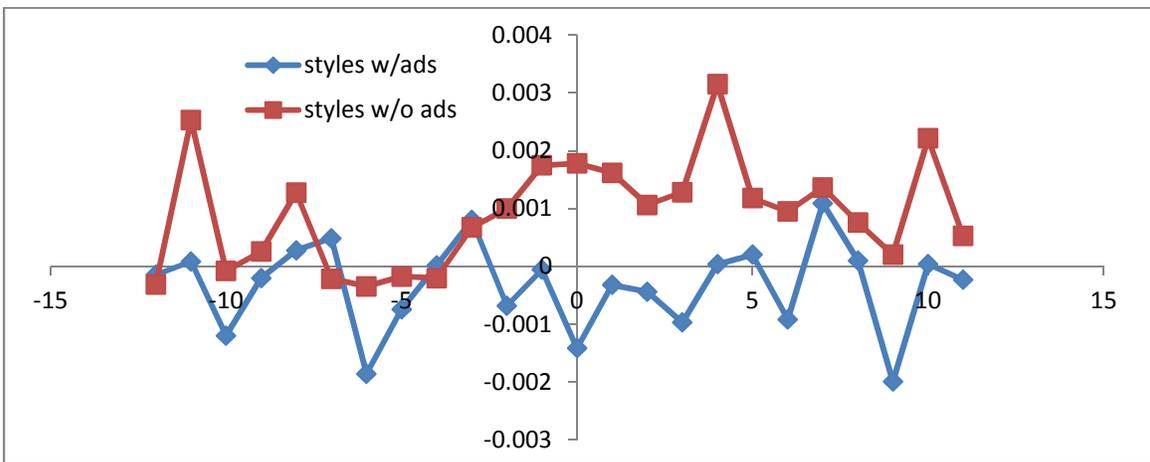
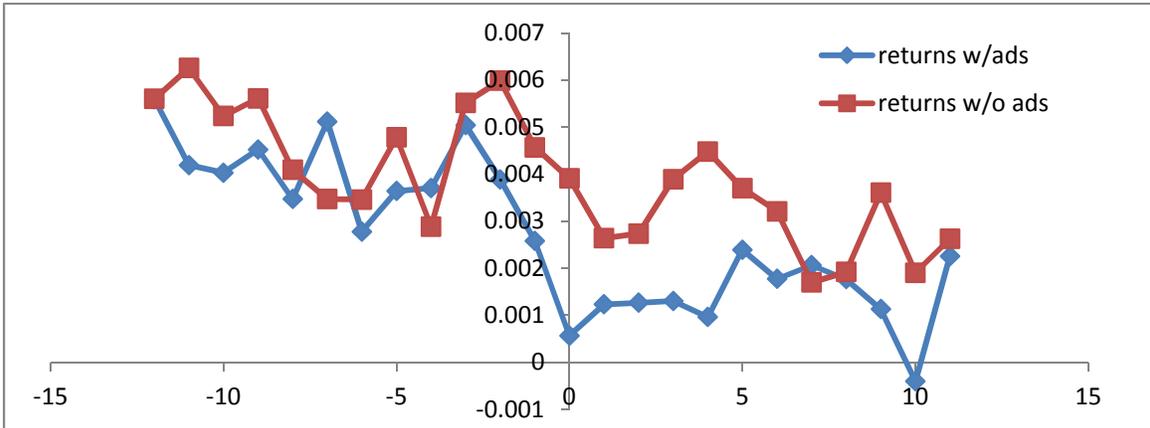


Table I: Summary statistics and univariate analysis

This table presents univariate analysis of hedge fund and affiliated mutual fund characteristics by varying levels advertising spend. Panel A present these characteristics split by quartiles of the fraction periods during which an affiliated mutual fund had positive ad spend. Panel A also presents comparable statistics for side-by-side hedge funds without advertising data (F + B in Figure I) and hedge funds that are not side-by-side (E in Figure I). Panel B presents trailing performance and flow measures for periods split by whether a period is an advertising period or a non-advertising period. The table presents these splits for three measures of advertising (Ads_dummy, More_dummy, and Trend_dummy), as defined in Section 3.2. Panel C presents the pairwise correlation of the advertising measures.

Panel A: Hedge funds by marketing frequency

	Q1 Most	Q2	Q3	Q4 Least	F + B	E
Advertising frequency	0.3284	0.0608	0.0198	0.0125	NA	NA
Hedge funds Attributes						
Management Fee (%)	1.51	1.83	1.69	1.33	1.32	1.46
Incentive Fee (%)	13.12	11.02	18.99	12.91	14.64	13.92
High Water Mark	0.37	0.17	0.27	0.62	0.56	0.57
Lockup Period (fraction of non-zeros)	0.05	0.01	0.02	0.15	0.06	0.18
Lockup Period (conditional on non-zeroes) (Month)	14.4	10.6	20.0	11.5	11.6	12.7
Log Size at Inception (Log \$)	16.22	15.64	16.23	16.75	15.47	15.33
N	236	236	236	236	562	15854
Affiliated Mutual funds attributes						
12-b1 Fee (%)	0.01	0.01	0.01	0.01	0.00	
Expense Ratio (%)	0.0121	0.0136	0.0156	0.0146	0.0145	
Portfolio Turnover Ratio	0.88	0.87	1.01	0.85	1.08	
Total size (million)	40293.12	34774.42	4130.2	32289.55	4857.1	
No. of mutual funds	4366	2322	438	2769	1470	
No. of mutual funds firms	20	13	7	22	109	

Panel B: Performance and flows before advertising periods

	Ads_dummy		More_dummy		Trend_dummy				
	1	0	1	0	1	0			
Hedge funds									
Average Trailing 12 months returns	0.3956%	<***	0.5504%	0.4135%	<***	0.5464%	0.3617%	<***	0.5517%
Average Trailing 12 months SARs	-0.0409%	<***	0.1071%	-0.0262%	<***	0.1037%	0.1321%	>***	0.1074%
Average Trailing 12 months flows	1.6699%	<***	2.3084%	1.6916%	<***	2.2960%	1.5780%	<***	2.2860%
Affiliated mutual funds									
Average Trailing 12 months returns	0.7533%	>***	0.3489%	0.7493%	>***	0.3530%	0.6999%	>***	0.3714%
Average Trailing 12 months alphas	0.1256%	<***	0.1349%	0.1311%		0.1340%	0.1449%	>***	-0.0571%
Average Trailing 12 months flows	1.1802%	<***	1.5884%	1.1997%	<***	1.5819%	1.2153%	<***	1.7283%

Panel C: Correlation between advertising measures

Correlation	Ad_dummy	More_dummy	Trend_dummy	First_dummy	Ad_ratio
Ad_dummy	-				
More_dummy	0.9664	-			
Trend_dummy	0.8970	0.9276	-		
First_dummy	0.6910	0.6736	0.6395	-	
Ad_ratio	0.1483	0.1525	0.1214	0.2532	-

Table II: Determinants of marketing by affiliated mutual funds

Panel A presents the results of Generalized Linear Model regression analyzing cross-sectional determinants of marketing frequency by affiliated mutual funds of hedge funds. The dependent variable is the fraction of periods during which an affiliated mutual fund had positive ad spend. Independent variables include hedge fund characteristics (specification 1) and both hedge fund and mutual fund characteristics (specification 2). Panel B presents results of a regression analyzing time series determinants of affiliated mutual fund marketing. The dependent variable is Ad_dummy, More_dummy, Trend_dummy, First_dummy or Ad_ratio (as defined in Section 3.2) and independent variables include hedge fund, and affiliated mutual fund company characteristics, performance and flows information. All binary variables are analyzed using logistic regression techniques. The first_dummy and ad_ratio are analyzed using a GLM model. Errors are clustered at the fund (Panel A and B) and time level (Panel B). Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Cross sectional determinants of marketing (Generalized Linear Model)

	(1)	(2)
Management Fee	-0.038 (-0.308)	-0.006 (-0.044)
Incentive Fee	-0.027** (-1.981)	-0.026** (-1.983)
High-water Mark	-0.267 (-1.028)	-0.211 (-0.693)
Lockup Period	0.060*** (3.555)	0.039** (2.197)
Log(size)	-0.109** (-2.012)	-0.153*** (-2.657)
12b1 Fee(MF)		51.898 (0.534)
Net Expense Ratio (MF)		-107.881 (-1.358)
Turnover Ratio (MF)		0.788*** (3.053)
Total Log(size) (MF)		0.000* (1.754)
R-squared	0.0797	0.1867
N	216	214

Panel B: Panel determinants of marketing

	ads_dummy	more_dummy	trend_dummy	first_dummy	ad_ratio
Style returns _{t-1,t-12}	-102.929*** (-8.360)	-104.672*** (-8.338)	-96.872*** (-7.664)	-73.390*** (-6.168)	-54.712*** (-8.617)
Style adj returns _{t-1,t-12}	-2.763 (-0.482)	-2.092 (-0.362)	-2.737 (-0.460)	-3.122 (-0.632)	-13.558*** (-6.379)
Flow _{t-1,t-12}	-1.579** (-2.413)	-1.657** (-2.491)	-1.418** (-2.127)	-0.968** (-2.293)	-3.116*** (-10.720)
MF alphas _{t-1,t-12}	95.356*** (4.968)	106.676*** (5.698)	91.277*** (4.948)	55.095*** (3.250)	162.813*** (7.574)
MF return-alpha _{t-1,t-12}	65.254*** (10.592)	68.054*** (11.155)	58.069*** (9.099)	57.910*** (7.774)	40.377*** (9.671)
MF flows _{t-1,t-12}	-10.933*** (-2.848)	-9.888*** (-2.586)	-10.487*** (-2.736)	-13.455*** (-4.038)	2.226 (1.233)
Management Fee(HF)	0.246** (2.252)	0.231** (2.121)	0.233** (2.122)	0.294*** (6.122)	-0.453*** (-14.197)
Incentive Fee	-0.042*** (-3.686)	-0.041*** (-3.470)	-0.038*** (-3.194)	-0.040*** (-5.787)	-0.061*** (-16.274)
High-Water Mark	0.009 (0.043)	0.028 (0.130)	0.026 (0.118)	-0.063 (-0.499)	0.205** (2.414)
Lockup Period	0.016 (1.147)	0.012 (0.870)	0.012 (0.843)	0.013 (1.571)	-0.032*** (-3.209)
Logsize _{t-12} (HF)	0.063 (1.481)	0.068 (1.630)	0.062 (1.456)	0.062*** (2.611)	0.028** (2.257)
FOF Dummy	-0.505** (-2.241)	-0.572** (-2.497)	-0.583** (-2.480)	-0.376*** (-2.683)	-0.483*** (-7.306)
Multi Dummy	-0.667*** (-2.673)	-0.671*** (-2.694)	-0.664*** (-2.643)	-0.615*** (-4.379)	-1.763*** (-16.884)
Long/short Dummy	-0.395 (-1.620)	-0.380 (-1.596)	-0.409* (-1.679)	-0.357** (-2.506)	-0.147** (-1.968)
12b1 Fee(MF)	159.135** (2.300)	234.818*** (3.476)	250.955*** (3.532)	88.135 (1.545)	-182.297*** (-5.015)
Net Expense Ratio(MF)	-130.571*** (-2.671)	-176.702*** (-4.123)	-163.749*** (-3.752)	-61.790* (-1.690)	-159.585*** (-5.988)
Logsize _{t-12} (MF)	0.000*** (2.725)	0.000** (2.310)	0.000** (2.142)	0.000*** (5.007)	0.000*** (3.344)
Turnover Ratio (MF)	-1.579*** (-5.136)	-1.594*** (-4.952)	-1.446*** (-4.644)	-1.292*** (-5.738)	-1.764*** (-14.158)
R-squared	0.172	0.175	0.166	0.139	0.443
N	14215	14215	14215	12409	14215

**Table III: The determinants and effects of hedge funds marketing by classifications
(Product level vs. Company level)**

This Table presents an analog of Table II, Panel B, and analyses of the determinants of affiliate advertising split by whether the advertisement is a company level or product level advertisement. The dependent variable is Ad_dummy, More_dummy, Trend_dummy, First_dummy or Ad_ratio (as defined in Section 3.2) for company level advertisements (Panel A) and product level advertisements (Panel B). Independent variables include hedge fund, and affiliated mutual fund company characteristics, performance and flows information. Errors are clustered at the fund and time level. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Panel determinants of marketing (Company Level)

	ads_dummy	more_dummy	trend_dummy	first_dummy	ad_ratio
Style returns _{t-1,t-12}	-2.864 (-0.213)	-3.097 (-0.227)	-3.704 (-0.282)	13.582 (0.787)	24.271 (1.231)
Style adj returns _{t-1,t-12}	5.067 (0.798)	5.446 (0.940)	4.454 (0.744)	6.098 (1.230)	-4.392 (-0.472)
Flow _{t-1,t-12}	-1.789* (-1.857)	-2.061** (-2.086)	-1.959** (-2.009)	-1.925*** (-2.884)	-3.909** (-2.317)
MF alphas _{t-1,t-12}	-98.810*** (-2.665)	-66.862** (-1.965)	-69.277** (-2.050)	-6.097 (-0.196)	-137.779** (-2.148)
MF return-alpha _{t-1,t-12}	-15.102 (-1.625)	-11.717 (-1.189)	-12.640 (-1.298)	-20.519* (-1.699)	-43.747*** (-2.659)
MF flows _{t-1,t-12}	-23.453*** (-5.146)	-22.964*** (-4.655)	-23.357*** (-4.816)	-20.873*** (-6.349)	-11.808 (-0.990)
Management Fee(HF)	0.350*** (2.944)	0.337*** (2.855)	0.327*** (2.727)	0.352*** (3.983)	-0.651*** (-3.118)
Incentive Fee	-0.048*** (-3.320)	-0.047*** (-3.309)	-0.047*** (-3.216)	-0.043*** (-4.132)	-0.114*** (-3.622)
High-Water Mark	0.083 (0.321)	0.141 (0.541)	0.103 (0.391)	-0.080 (-0.406)	1.115** (2.031)
Lockup Period	-0.040** (-2.054)	-0.048** (-2.397)	-0.045** (-2.232)	-0.026* (-1.816)	0.070 (1.493)
Logsize _{t-12} (HF)	0.039 (0.703)	0.048 (0.849)	0.041 (0.706)	0.054 (1.322)	0.042 (0.503)
FOF Dummy	-0.204 (-0.682)	-0.350 (-1.151)	-0.353 (-1.151)	-0.576*** (-2.878)	-0.340 (-0.742)
Multi Dummy	-0.005 (-0.017)	-0.016 (-0.054)	-0.086 (-0.294)	-0.287 (-1.374)	-3.025*** (-5.449)
Long/short Dummy	-0.050 (-0.169)	-0.020 (-0.067)	-0.038 (-0.126)	0.020 (0.109)	0.569 (1.392)
12b1 Fee(MF)	-483.680*** (-6.005)	-372.644*** (-4.839)	-391.181*** (-5.145)	-413.794*** (-6.398)	62.409 (0.500)
Net Exp. Ratio(MF)	137.810** (2.203)	53.861 (0.909)	57.829 (0.957)	76.837 (1.563)	-548.632*** (-4.828)
Logsize _{t-12} (MF)	0.002*** (10.680)	0.002*** (10.636)	0.002*** (10.767)	0.001*** (12.580)	0.000** (2.410)
Turnover Ratio (MF)	-1.378 (-1.456)	-1.385 (-1.407)	-1.306 (-1.344)	-1.228 (-1.336)	-4.905*** (-8.776)
R-squared	0.311	0.311	0.311	0.268	0.525
N	14215	14215	14215	13535	14112

Panel B: Panel determinants of marketing (Product Level)

	ads_dummy	more_dummy	trend_dummy	first_dummy	ad_ratio
Style returns _{t-1,t-12}	-128.458*** (-9.261)	-127.687*** (-9.221)	-118.903*** (-8.468)	-85.860*** (-6.041)	-15.541 (-0.984)
Style adj returns _{t-1,t-12}	-3.726 (-0.560)	-2.485 (-0.366)	-2.305 (-0.319)	-5.444 (-0.925)	-25.406*** (-5.435)
Flow _{t-1,t-12}	-1.178 (-1.507)	-1.136 (-1.451)	-0.851 (-1.083)	-0.400 (-0.768)	-7.314*** (-10.107)
MF alphas _{t-1,t-12}	147.095*** (7.357)	143.855*** (7.303)	126.027*** (6.457)	70.802*** (3.562)	186.087*** (3.956)
MF return-alpha _{t-1,t-12}	86.686*** (11.722)	85.888*** (11.503)	74.696*** (10.199)	68.393*** (7.613)	30.140*** (3.273)
MF flows _{t-1,t-12}	-6.731 (-1.202)	-6.221 (-1.129)	-6.503 (-1.161)	-12.180*** (-3.290)	17.419*** (3.842)
Management Fee(HF)	0.161 (1.352)	0.150 (1.265)	0.160 (1.320)	0.271*** (4.862)	-0.757*** (-11.406)
Incentive Fee	-0.016 (-1.243)	-0.016 (-1.242)	-0.014 (-0.992)	-0.020*** (-2.619)	-0.138*** (-16.953)
High-Water Mark	-0.081 (-0.309)	-0.075 (-0.283)	-0.070 (-0.257)	-0.160 (-1.131)	1.909*** (12.726)
Lockup Period	0.024 (1.251)	0.024 (1.272)	0.022 (1.136)	0.020*** (2.614)	0.019 (1.581)
Logsize _{t-12} (HF)	0.059 (1.355)	0.062 (1.410)	0.057 (1.279)	0.049* (1.806)	-0.055** (-2.062)
FOF Dummy	-0.460* (-1.659)	-0.447 (-1.606)	-0.464 (-1.635)	-0.094 (-0.589)	-0.452*** (-2.683)
Multi Dummy	-0.662** (-2.153)	-0.645** (-2.096)	-0.620** (-2.032)	-0.514*** (-3.085)	-3.363*** (-19.038)
Long/short Dummy	-0.335 (-1.320)	-0.332 (-1.302)	-0.365 (-1.419)	-0.279* (-1.814)	0.572*** (2.725)
12b1 Fee(MF)	403.863*** (3.636)	398.637*** (3.570)	440.833*** (3.628)	274.795*** (3.875)	-179.400*** (-3.547)
Net Exp. Ratio(MF)	-293.994*** (-4.521)	-288.464*** (-4.442)	-277.259*** (-4.268)	-165.430*** (-4.068)	-881.604*** (-22.949)
Logsize _{t-12} (MF)	-0.000 (-0.161)	-0.000 (-0.104)	-0.000 (-0.259)	0.000** (1.985)	0.000 (0.519)
Turnover Ratio (MF)	-0.571** (-2.436)	-0.577** (-2.452)	-0.491** (-2.132)	-0.573*** (-5.497)	-1.024*** (-4.461)
R-squared	0.179	0.179	0.174	0.159	0.759
N	14215	14215	14215	12920	14159

Table IV: The effects of affiliated mutual fund advertising

The table presents the results of regression analysis examining the effects of affiliate mutual fund advertising on hedge fund flows and performance. The sample is a matched sample of hedge funds that exhibit affiliate mutual fund advertising and hedge funds with affiliated mutual funds that do not advertise. The dependent variables are $returns_{t+1,t+12}$ (Panel A), style adjusted $returns_{t+1,t+12}$ (Panel B) and $flows_{t+1,t+12}$ (Panel C) after advertising spend. Our explanatory variable of interest is a dummy variable capturing advertising spend. Columns 1-4 of each Panel present results for the four different measures of advertising outlined in Section 3.2 (Ads_dummy, More_dummy, Trend_dummy and First_dummy). Columns 5 and 6 separate advertising periods into those of high relative magnitude and low relative magnitude and compare the periods separately against matched hedge funds with no advertising. Control variables include hedge fund characteristics. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Returns

	Ad_dummy	More_dummy	Trend_dummy	First_dummy	Ad_ratio (high)
Advertising	-0.067 (-1.555)	-0.153*** (-3.863)	-0.186*** (-4.681)	-0.140*** (-2.605)	-0.021 (-0.469)
Return _{t-1,t-12}	7.417* (1.698)	0.068 (1.517)	0.068 (1.527)	0.082 (1.441)	-0.066* (-1.756)
Management Fee	-0.022 (-0.775)	0.000 (0.222)	0.000 (1.087)	0.001* (1.939)	0.001* (1.711)
Incentive Fee	0.024*** (8.022)	0.000*** (6.685)	0.000*** (6.579)	0.000 (1.244)	0.000 (1.285)
High-water Mark	-0.459*** (-8.179)	-0.004*** (-8.347)	-0.005*** (-8.443)	-0.002*** (-3.252)	-0.003*** (-3.991)
Lockup Period	0.007* (1.742)	0.000 (1.427)	0.000 (1.500)	-0.000 (-1.246)	0.000 (0.172)
Log(size)	0.055*** (4.585)	0.001*** (5.760)	0.001*** (5.790)	0.001*** (3.562)	0.000 (0.678)
Year dummies	Yes	Yes	Yes	Yes	Yes
R-squared	0.087	0.105	0.101	0.095	0.053
N	5074	5268	5044	2166	2002

Panel B: Style Adjusted Returns

	Ad_dummy	More_dummy	Trend_dummy	First_dummy	Ad_ratio(top)	Ad_ratio(bottom)
Advertising	-0.149*** (-3.573)	-0.200*** (-5.249)	-0.219*** (-5.643)	-0.133** (-2.471)	-0.227*** (-5.040)	-0.016 (-0.210)
SAR _{t-1,t-12}	0.202*** (4.839)	0.219*** (4.949)	0.215*** (4.880)	0.172*** (2.954)	0.105*** (3.149)	0.068 (1.328)
Management Fee	0.001*** (2.865)	0.001*** (2.999)	0.001*** (2.779)	0.000 (0.577)	-0.000 (-0.307)	0.002*** (4.344)
Incentive Fee	0.000*** (6.281)	0.000*** (6.325)	0.000*** (6.516)	0.000* (1.820)	0.000*** (4.455)	0.000*** (2.610)
High-water Mark	-0.006*** (-10.959)	-0.006*** (-10.950)	-0.006*** (-10.977)	-0.003*** (-4.692)	-0.003*** (-6.097)	-0.005*** (-5.776)
Lockup Period	0.000 (1.021)	0.000 (0.600)	0.000 (0.518)	-0.000*** (-3.184)	0.000 (1.510)	-0.000** (-1.996)
Log(size)	0.001*** (6.356)	0.001*** (6.898)	0.001*** (6.842)	0.001*** (5.098)	0.000*** (2.986)	0.000 (1.334)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.085	0.097	0.098	0.098	0.094	0.067
N	5237	5074	4864	4864	2332	1924

Panel C: Flows

	Ad_dummy	More_dummy	Trend_dummy	First_dummy	Ad_ratio(top)	Ad_ratio(bottom)
Advertising	0.749*** (5.482)	0.778*** (5.623)	0.824*** (5.910)	0.382* (1.742)	1.208*** (6.408)	1.057*** (4.761)
Flow _{t-1,t-12}	0.273*** (19.662)	0.279*** (19.609)	0.282*** (19.673)	0.217*** (10.866)	0.337*** (15.470)	0.240*** (11.690)
Management Fee	-0.003** (-2.493)	-0.002 (-1.553)	-0.002 (-1.367)	-0.004** (-2.061)	-0.004** (-2.543)	-0.007*** (-2.889)
Incentive Fee	0.000*** (2.587)	0.000 (1.636)	0.000 (1.573)	0.000** (2.313)	0.001*** (4.307)	0.000 (0.093)
High-water Mark	-0.004*** (-2.721)	-0.002 (-1.579)	-0.003* (-1.679)	-0.003 (-1.328)	-0.012*** (-5.774)	0.004* (1.722)
Lockup Period	0.000*** (3.674)	0.000*** (3.536)	0.000*** (3.400)	0.001** (2.401)	0.001*** (3.954)	0.000* (1.877)
Log(size)	-0.002*** (-3.958)	-0.001*** (-3.317)	-0.001*** (-3.080)	-0.003*** (-4.289)	-0.002*** (-2.792)	-0.002*** (-3.710)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.142	0.145	0.148	0.124	0.232	0.120
N	5875	5706	5634	2286	2680	2186

**Table V: The effects of affiliated mutual fund advertising by classifications
(Product level vs. Company level)**

This Table is an analog of Table III, Panel A, B and C, column 1, and presents the results of regression analysis examining the effects of affiliate mutual fund advertising on hedge fund flows and performance, split by whether the advertising is company level (column 1), product level (column 2), or both (column 3). The sample is a matched sample of hedge funds that exhibit affiliate mutual fund advertising and hedge funds with affiliated mutual funds that do not advertise. The dependent variables are returns_{t+1,t+12}(Panel A), style adjusted returns_{t+1,t+12} (Panel B) and flows_{t+1,t+12} (Panel C) after advertising spend. Our explanatory variable of interest is a dummy variable capturing advertising spend. Control variables include hedge fund characteristics. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Returns

	Company	Product	Mixed
Advertising	-0.338*** (-3.787)	0.096** (2.009)	-0.268** (-2.455)
Return _{t-1,t-12}	-17.094*** (-3.415)	24.972*** (3.788)	-20.086* (-1.813)
Management Fee	-0.104 (-1.455)	-0.072** (-2.171)	0.085 (1.472)
Incentive Fee	-0.011** (-2.113)	0.024*** (6.296)	0.024*** (3.469)
High-water Mark	-0.274** (-2.560)	-0.487*** (-7.430)	-0.267* (-1.862)
Lockup Period	0.030*** (5.064)	-0.007 (-1.177)	0.001 (0.063)
Log(size)	-0.023 (-0.956)	0.102*** (6.608)	-0.025 (-0.982)
Year dummies	Yes	Yes	Yes
R-squared	0.189	0.128	0.191
N	1548	3098	818

Panel B: Style Adj. Returns

	Company	Product	Mixed
Advertising	-0.386*** (-4.265)	-0.009 (-0.193)	-0.179* (-1.817)
SAR _{t-1,t-12}	0.596 (0.119)	38.851*** (5.744)	-7.325 (-0.767)
Management Fee	-0.033 (-0.590)	0.080** (2.110)	0.001 (0.019)
Incentive Fee	0.001 (0.121)	0.018*** (5.249)	0.030*** (3.683)
High-water Mark	-0.421*** (-4.237)	-0.667*** (-9.617)	-0.247** (-2.467)
Lockup Period	0.024*** (3.488)	-0.003 (-0.550)	-0.029** (-2.448)
Log(size)	0.016 (0.607)	0.085*** (5.980)	0.003 (0.125)
Year dummies	Yes	Yes	Yes
R-squared	0.073	0.169	0.103
N	1406	3062	770

Panel C: Flows

	Company	Product	Mixed
Advertising	0.006 (0.025)	0.886*** (4.688)	0.407 (0.896)
Flows _{t-1,t-12}	22.083*** (9.126)	31.754*** (16.803)	18.050*** (5.537)
Management Fee	-0.096 (-0.478)	-0.405** (-2.525)	-0.515 (-1.193)
Incentive Fee	0.023 (1.210)	0.019 (1.243)	0.130*** (3.356)
High-water Mark	-0.113 (-0.466)	-0.658*** (-3.277)	-0.689 (-1.471)
Lockup Period	0.001 (0.049)	0.073*** (3.282)	0.090** (2.023)
Log(size)	-0.167** (-2.446)	-0.121** (-2.348)	-0.508*** (-4.270)
Year dummies	Yes	Yes	Yes
R-squared	0.215	0.138	0.155
N	1572	3512	790

Appendix: Analysis of side-by-side funds and mutual fund marketing

In the interest of completeness, we perform analysis of the determinants of becoming “side-by-side” and of mutual fund advertising. These analysis are in the spirit of Jain and Wu, 2000, Gallaher, Kaniel and Starks, 2010, (mutual fund marketing) and Cici, Gibson and Moussawi, 2010, Nohel, Zheng and Wang, 2010 (“side-by-side” hedge funds and mutual funds).

In the interests of brevity, we present a table summarizing the significant determinants and effects of (1) mutual funds becoming side-by-side, (2) hedge funds becoming side-by-side and (3) mutual fund advertising. The table below presents directions of statistically significant coefficients in regressions analyzing determinants and effects of these events. For example, mutual funds are more likely to become side by side after periods of good raw returns, but experiences poorer performance after becoming side-by-side, compared to a matched sample of mutual funds that do not become side-by-side.

Event	Raw returns		Risk adj. returns		Flows	
	D	E	D	E	D	E
Mutual fund becoming side-by-side	+	-	NE	-	-	NE
Hedge fund becoming side-by-side	+	+	+	+	+	+
Mutual fund advertising	+	+ ^(w)	NE	-	+	+
Mutual fund advertising – company level	+	NE	NE	-	+	NE
Mutual fund advertising – product level	+	+	NE	-	+	+

D= determinants, E = effects, ^(w)= weak, 10% significance or directional result, NE = no statistically significant effect

Our results are largely consistent with findings documented in the literature. As a contrast to our results for hedge funds, both company and product level advertising share

the same drivers as overall advertising. This contrasts with hedge funds' restricted influence on just company level advertising. The effect of advertising on flows is more similar to the case for hedge funds: product level advertising is more effective in increasing new inflows than company level advertising.

Tables reporting results of our analyses follow:

Table A: Determinants of side-by-side management

Panel A reports the results of the panel logistic regression of determinants of side-by-side for mutual funds. Dependent variable is the side-by-side date (*become-sbs*), which takes a value of 1 when the performance date is the same as the *side-by-side* date, and 0 otherwise. Strategy and year dummies control for the strategy and time fixed effects. Other variables are as defined in Table I. Panel B reports the results of the panel logistic regression of determinants of side-by-side for hedge funds. Dependent variable is defined as panel A. Leveraged is an indicator variable which takes a value of 1 if the fund is leveraged, and 0 otherwise. Other variables are as defined in Table I. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Determinants of mutual funds side-by-side (A+B+C+D in Figure 1)				
	(1)	(2)	(3)	(4)
Return _{t-1,t-12}	30.348**		30.383**	
Alpha _{t-1,t-12}		19.590 (1.130)		20.374 (1.059)
Flow _{t-1,t-12}	-4.017** (-2.122)	-3.849** (-2.265)	-3.942** (-1.992)	-3.753** (-2.220)
12b1 Fee	35.058 (1.197)	32.095 (1.132)	36.839 (1.283)	33.754 (1.215)
Net Expense Ratio	6.550 (0.262)	14.645 (0.771)	6.161 (0.253)	13.096 (0.674)
Turnover Ratio	-0.110 (-0.909)	-0.113 (-0.941)	-0.111 (-0.885)	-0.114 (-0.910)
Logsize _{t-12}	0.076* (1.761)	0.068 (1.566)	0.077* (1.778)	0.068 (1.548)
Strategy Dummies	No	No	Yes	Yes
R-squared	0.0193	0.0050	0.0207	0.0063
N	462910	462910	462910	462910

Panel B: Determinants of hedge funds side-by-side (E+F+G in Figure 1)

	(1)	(2)	(3)	(4)
Return _{t-1,t-12}	0.424*** (4.516)		0.411*** (3.729)	
Risk Adj. Return _{t-1,t-12}		0.340*** (2.982)		0.337*** (3.134)
Flow _{t-1,t-12}	6.255*** (3.855)	6.257*** (3.863)	6.132*** (3.155)	6.134*** (3.160)
Management Fee	-0.489*** (-4.192)	-0.489*** (-4.196)	-0.426*** (-2.661)	-0.426*** (-2.664)
Incentive Fee	0.070*** (5.523)	0.070*** (5.532)	0.046* (1.895)	0.046* (1.895)
High-water Mark	-0.329 (-0.884)	-0.329 (-0.882)	-0.425 (-1.052)	-0.424 (-1.050)
Lockup Period	0.030*** (3.374)	0.030*** (3.375)	0.028*** (2.949)	0.028*** (2.949)
Logsize _{t-12}	0.247*** (4.166)	0.247*** (4.166)	0.237*** (4.038)	0.237*** (4.038)
Strategy Dummies	No	No	Yes	Yes
R-squared	0.0423	0.0421	0.0489	0.0488
N	248978	248978	248978	248978

Table B: Determinants of mutual fund marketing

Panel A presents results of a logistic regression analysing time series determinants of mutual fund marketing. The dependent variable is Ad_dummy, More_dummy, Trend_dummy, First_dummy or Ad_ratio (as defined in Section 3.2) and independent variables include mutual fund company characteristics, performance and flow information. Errors are clustered at the fund and time level. Panel B and C present similar analyses for company level advertising and product level advertising, respectively. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Determinants of mutual funds marketing (C+D in Figure 1)

	ads_ dummy	ads_ dummy	more_ dummy	more_ dummy	trend_ dummy	trend_ dummy	first_ dummy	first_ dummy	ad_ ratio	ad_ ratio
Side-by-side	0.138*** (3.690)	0.138*** (3.669)	0.072* (1.847)	0.071* (1.829)	0.067* (1.732)	0.067* (1.719)	0.185*** (12.520)	0.190*** (12.817)	0.069*** (9.249)	0.066*** (8.875)
Return _{t-1,t-12}	0.700**		2.302***		2.192***		2.871***		2.230***	
Alpha _{t-1,t-12}		-1.582 (-0.736)		-0.306 (-0.140)		0.204 (0.093)		11.628*** (7.255)		-7.898*** (-10.094)
Flow _{t-1,t-12}	1.442*** (4.261)	1.500*** (4.397)	1.351*** (3.918)	1.432*** (4.117)	1.287*** (3.724)	1.353*** (3.880)	1.926*** (11.490)	1.754*** (10.273)	0.704*** (6.554)	0.999*** (9.234)
12b1 Fee	-4.533 (-0.868)	-4.564 (-0.874)	0.341 (0.064)	0.235 (0.044)	1.038 (0.193)	0.938 (0.175)	-7.359*** (-3.881)	-7.541*** (-3.975)	-0.089 (-0.087)	-0.185 (-0.180)
Net Exp. Ratio	-75.445*** (-15.053)	-75.591*** (-15.055)	-77.012*** (-15.065)	-77.048*** (-15.047)	-77.216*** (-15.061)	-77.217*** (-15.039)	-74.924*** (-41.353)	-74.433*** (-40.924)	-9.057*** (-9.269)	-9.357*** (-9.544)
Turnover	-0.099*** (-4.577)	-0.098*** (-4.538)	-0.099*** (-4.510)	-0.099*** (-4.480)	-0.096*** (-4.368)	-0.096*** (-4.348)	-0.102*** (-13.872)	-0.107*** (-14.484)	-0.032*** (-6.827)	-0.029*** (-6.099)
Logsize _{t-12}	0.107*** (14.451)	0.107*** (14.446)	0.119*** (15.632)	0.119*** (15.572)	0.121*** (15.853)	0.121*** (15.781)	0.113*** (38.300)	0.111*** (37.435)	0.149*** (96.624)	0.151*** (97.017)
R ²	0.049	0.049	0.050	0.050	0.050	0.050	0.049	0.050	0.057	0.057
N	429676	429676	429676	429676	429676	429676	284659	284659	429676	429676

Panel B: Determinants of mutual funds marketing (company) (C+D in Figure 1)

	ads_ dummy	ads_ dummy	more_ dummy	more_ dummy	trend_ dummy	trend_ dummy	first_ dummy	first_ dummy	ad_ ratio	ad_ ratio
Side-by-side	0.722*** (15.657)	0.719*** (15.557)	0.668*** (13.455)	0.664*** (13.356)	0.666*** (13.467)	0.663*** (13.370)	0.591*** (37.575)	0.587*** (37.313)	0.639*** (63.368)	0.639*** (63.151)
Return _{t-1,t-12}	3.575***		7.286***		6.772***		7.629***		7.000***	
Alpha _{t-1,t-12}		-6.397*** (-2.638)		-3.486 (-1.338)		-3.498 (-1.350)		-4.127*** (-2.770)		6.422*** (5.135)
Flow _{t-1,t-12}	2.156*** (5.443)	2.426*** (6.023)	1.913*** (4.528)	2.246*** (5.225)	1.895*** (4.498)	2.210*** (5.155)	1.272*** (6.402)	1.645*** (8.180)	2.821*** (18.997)	2.932*** (19.590)
12b1 Fee	-12.336* (-1.954)	-12.541** (-1.987)	-6.741 (-1.019)	-7.146 (-1.081)	-6.395 (-0.968)	-6.772 (-1.026)	3.486 (1.450)	3.600 (1.498)	-15.443*** (-10.403)	-15.831*** (-10.662)
Net Exp. Ratio	-100.648*** (-16.177)	-100.976*** (-16.232)	-109.650*** (-16.513)	-109.350*** (-16.472)	-109.547*** (-16.538)	-109.360*** (-16.512)	2.531 (1.228)	2.619 (1.270)	-85.309*** (-54.813)	-84.615*** (-54.306)
Turnover Ratio	-0.075*** (-3.168)	-0.072*** (-3.021)	-0.080*** (-3.194)	-0.077*** (-3.082)	-0.077*** (-3.089)	-0.074*** (-2.977)	0.001 (0.169)	0.005 (0.539)	-0.272*** (-33.317)	-0.274*** (-33.533)
Logsize _{t-12}	0.168*** (18.891)	0.169*** (18.963)	0.190*** (20.205)	0.190*** (20.202)	0.190*** (20.313)	0.191*** (20.310)	-0.008** (-2.420)	-0.007** (-2.154)	0.229*** (98.949)	0.228*** (97.324)
Strategy Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.084	0.083	0.093	0.091	0.092	0.091	0.020	0.018	0.183	0.182
N	429676	429676	429676	429676	429676	429676	346718	346718	429676	429676

Panel C: Determinants of mutual funds marketing (product) (C+D in Figure 1)

	ads_ dummy	ads_ dummy	more_ dummy	more_ dummy	trend_ dummy	trend_ dummy	first_ dummy	first_ dummy	ad_ ratio	ad_ ratio
Side-by-side	0.130*** (3.464)	0.129*** (3.445)	0.041 (1.062)	0.041 (1.050)	0.134*** (3.326)	0.133*** (3.300)	0.182*** (12.276)	0.187*** (12.576)	-0.284*** (-36.199)	-0.284*** (-36.129)
Return _{t-1,t-12}	0.703**		2.193***		2.521***		2.876***		7.346***	
Alpha _{t-1,t-12}		-1.476 (-0.686)		0.311 (0.142)		-0.998 (-0.441)		11.700*** (7.302)		5.481*** (7.227)
Flow _{t-1,t-12}	1.428*** (4.216)	1.483*** (4.346)	1.251*** (3.594)	1.315*** (3.745)	2.095*** (5.951)	2.198*** (6.188)	1.924*** (11.449)	1.750*** (10.227)	2.906*** (34.326)	3.032*** (35.288)
12b1 Fee	-5.999 (-1.006)	-5.941 (-0.998)	0.104 (0.017)	-0.003 (-0.001)	5.230 (0.833)	5.167 (0.825)	-7.108*** (-3.746)	-7.286*** (-3.838)	23.785*** (25.769)	23.394*** (25.330)
Net Exp. Ratio	-75.669*** (-15.084)	-75.806*** (-15.084)	-75.575*** (-14.726)	-75.568*** (-14.701)	-91.269*** (-17.160)	-91.381*** (-17.159)	-75.054*** (-41.443)	-74.562*** (-41.014)	-63.019*** (-71.468)	-62.308*** (-70.521)
Turnover Ratio	-0.098*** (-4.539)	-0.097*** (-4.502)	-0.101*** (-4.549)	-0.101*** (-4.530)	-0.081*** (-3.595)	-0.080*** (-3.550)	-0.102*** (-13.890)	-0.107*** (-14.508)	-0.070*** (-17.088)	-0.071*** (-17.264)
Logsize _{t-12}	0.107*** (14.399)	0.107*** (14.393)	0.118*** (15.450)	0.118*** (15.379)	0.137*** (17.236)	0.137*** (17.186)	0.113*** (38.223)	0.110*** (37.352)	0.114*** (80.346)	0.113*** (78.930)
Strategy Dummies	Yes									
R-squared	0.049	0.049	0.049	0.049	0.063	0.063	0.050	0.050	0.080	0.077
N	429676	429676	429676	429676	429676	429676	284066	284066	429676	429676

Table C: Effects of side-by-side management

The table presents the results of regression analysis examining the effects of becoming side by side on mutual fund and hedge fund flows and performance. The sample includes mutual funds (Panel A) and hedge funds (Panel B) that become side by side and a matched sample of control funds that do not become side by side. The dependent variables are changes in returns (columns 1 and 2), style adjusted returns (columns 3 and 4) and flows (columns 5 and 6) for the 12 month period before and after becoming side by side. Our explanatory variable of interest is a dummy variable capturing becoming side by side. Control variables include mutual and hedge fund characteristics. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Effects of Mutual Funds Side-by-side (A+B+C+D)

	return	alpha	flow
Become side-by-side	-0.307** (-2.365)	-0.117*** (-4.422)	0.116 (0.617)
Return _{t-1,t-12}	-0.109 (-1.563)		
Alpha _{t-1,t-12}		0.376*** (9.847)	
Flow _{t-1,t-12}			0.354*** (7.657)
12b1 Fee	-56.018*** (-2.649)	-2.764 (-0.656)	-133.838*** (-4.253)
Net Expense Ratio	-67.431*** (-4.075)	-30.257*** (-5.645)	-55.775** (-2.264)
Turnover Ratio	-0.126*** (-3.658)	0.002 (0.392)	-0.182*** (-2.940)
Logsize _{t-12}	0.132** (2.559)	0.055*** (3.916)	-0.061 (-0.407)
Strategy Dummies	Yes	Yes	Yes
year dummies	Yes	Yes	Yes
R-squared	0.069	0.286	0.179
N	1170	1154	1178

Panel B: Effects of hedge Funds Side-by-side (E+F+G)

	return	style	flow
Become side-by-side	0.835*** (2.632)	0.737*** (3.678)	1.052** (2.185)
Return _{t-1,t-12}	0.406** (2.195)		
Style _{t-1,t-12}		0.032 (0.241)	
Flow _{t-1,t-12}			-0.006 (-0.132)
Management Fee	-2.352*** (-3.092)	-0.756 (-1.481)	0.129 (0.126)
Incentive Fee	-0.118*** (-4.551)	-0.051*** (-2.709)	-0.056* (-1.659)
High-water Mark	-0.732** (-2.151)	-0.574** (-2.462)	-0.750 (-1.066)
Lockup Period	0.033** (2.114)	0.046*** (3.700)	0.083*** (2.848)
Log (size)	-0.392*** (-3.053)	-0.278*** (-3.320)	-0.682*** (-2.855)
Strategy Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
R-squared	0.494	0.422	0.244
N	480	480	504

Table D: The effects of mutual fund advertising

The table presents the results of regression analysis examining the effects of mutual fund advertising on mutual fund flows and performance. The sample is a matched sample of mutual funds that advertise and similar mutual funds that do not advertise. The dependent variables are changes in returns (columns 1 and 2), alphas (columns 3 and 4) and flows (columns 5 and 6) for the 12 month period before and after advertising spend. Our explanatory variable of interest is a binary dummy variable capturing advertising spend (Ad_dummy). Panels A, B and C present results for all advertising, company level advertising and product level advertising. Control variables include mutual fund characteristics. Superscripts *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Effects of mutual Funds marketing (C+D in Figure 1)			
	return	alpha	flow
Ad_dummy	0.016 (1.451)	-0.019*** (-4.405)	0.064** (2.322)
Return _{t-1,t-12}	-0.319*** (-51.045)		
Style _{t-1,t-12}		0.483*** (50.238)	
Flow _{t-1,t-12}			0.377*** (46.485)
12b1 Fee	-8.330*** (-4.827)	-1.251* (-1.903)	-119.546*** (-27.434)
Net Expense Ratio	5.976*** (3.535)	-20.132*** (-29.215)	-76.745*** (-20.404)
Log(size)	-0.006*** (-2.595)	-0.002* (-1.872)	-0.199*** (-25.726)
Turnover Ratio	-0.047*** (-12.360)	0.004*** (3.147)	-0.023* (-1.699)
Year Dummies	Yes	Yes	Yes
Strategy Dummies	Yes	Yes	Yes
R-squared	0.336	0.233	0.216
N	64810	64754	66008

Panel B: Company level marketing

	return	alpha	flow
Company_dummy	0.012 (0.841)	-0.027*** (-5.060)	0.026 (0.745)
Return _{t-1,t-12}	-0.342*** (-43.117)		
Style _{t-1,t-12}		0.451*** (38.376)	
Flow _{t-1,t-12}			0.377*** (39.301)
12b1 Fee	-10.718*** (-5.013)	-3.327*** (-4.233)	-121.358*** (-22.726)
Expense Ratio	4.074* (1.897)	-18.438*** (-21.808)	-78.646*** (-16.742)
Log(size)	-0.012*** (-3.683)	-0.001 (-1.127)	-0.209*** (-21.501)
Turnover Ratio	-0.039*** (-8.072)	0.004*** (2.738)	-0.029* (-1.674)
Year Dummies	Yes	Yes	Yes
Strategy Dummies	Yes	Yes	Yes
R-squared	0.354	0.226	0.219
N	42004	42118	42864

Panel C: Product level marketing

	return	alpha	flow
Product_dummy	0.029* (1.943)	-0.026*** (-4.353)	0.148*** (4.075)
Return _{t-1,t-12}	-0.273*** (-34.348)		
Style _{t-1,t-12}		0.479*** (38.165)	
Flow _{t-1,t-12}			0.381*** (34.892)
12b1 Fee	-9.888*** (-4.250)	-0.399 (-0.427)	-119.058*** (-20.414)
Expense Ratio	0.756 (0.353)	-22.122*** (-23.731)	-82.086*** (-16.488)
Log(size)	-0.005* (-1.702)	-0.004*** (-3.528)	-0.198*** (-19.580)
Turnover Ratio	-0.060*** (-12.164)	0.007*** (4.404)	-0.003 (-0.156)
Year Dummies	Yes	Yes	Yes
Strategy Dummies	Yes	Yes	Yes
R-squared	0.362	0.224	0.214
N	22806	22636	23144