The Economics of Mutual Fund Marketing

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ABFER 2023

Motivation

- The mutual fund literature has largely focused on identifying managers' investment skill
- However, a salient observation that fund companies spend a tremendous amount of resources on marketing and distribution
  - 25% employees are marketing-oriented; 16% of expenses to 12b1
- We investigate mutual fund companies' *strategic* marketing decisions, and how they are related to performance, flow, and size distribution

Existing Views on Marketing

- Should it matter? Yes
  - Naive persuasion:
    "luck played a bigger role in mutual fund returns than most people understand and that fund marketing often glossed over that fact."—John C. Bogle
  - Marketing as an effort to lower investors' participation or search cost (e.g., Roussanov, Ruan and Wei (2021); Huang, Wei and Yan (2007); Sirri and Tufano (1998))
  - Marketing as a signal of product quality (e.g., Milgrom and Roberts (1986); Kihlstrom and Riordan (1984); Nelson (1974))
- Empirical evidence
  - Fee-based measures: expense ratio, 12b1, advertisement spending, etc. (e.g., Sirri and Tufano (1998))
    - Mixed evidence on the effectiveness of marketing (high fees $\rightarrow$ *low* fund growth)
  - Do not contain performance-related signals (Jain and Wu (2000))

This Paper

New Measurement:

- Marketing Employment Share (MKT): a ratio of mutual fund companies' marketing-oriented employees to total employment
- Measured at the fund company level (Gallaher, Kaniel, and Starks (2006))

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2. Heterogeneity in the persistence of MKT
   - Some conduct selective marketing (only following good performance), consistent with search cost theories
   - Others do persistent marketing (invariant to performance)

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2. Heterogeneity in the persistence of MKT
   - Some conduct selective marketing (only following good performance), consistent with search cost theories
   - Others do persistent marketing (invariant to performance)
3. Level of MKT does not predict performance
   - Marketing effort does not directly signal true ability

Economics of Mutual Fund Marketing

New framework:

- Strategic choice of marketing plans based on their true investment skill and their past fund performance
- Marketing strategies not only lower costs of information acquisition for investors (*Learning*), but are also used to persuade fund flows by changing investors' beliefs about the skill level (*Costly Signaling*)
  - Marketing employment policy as a signal of fund skill type
- Our model can reconcile all known facts
- **New prediction**: high-skill funds conduct persistent marketing and deliver better performance

Literature Review

- Marketing in search and learning: Roussanov, Ruan and Wei (2021); Huang, Wei and Yan (2007)
- Marketing as signaling device: Grossman (1981), Kihlstrom and Riordan (1984), Milgrom and Roberts (1986)
- Marketing and mutual fund flow: Sirri and Tufano (1998), Jain and Wu (2000), Gallaher, Kaniel, and Starks (2006)
- Role of fund family: Gaspar, Massa and Matos (2006), Pollet and Wilson (2008), Berk, Van Binsbergen and Liu (2017)
- Large literature on fund performance and skill: Berk and Green (2004), Pastor, Stambaugh, and Taylor (2015),...

Our paper: Fund companies strategic decisions, beyond investment management, reveal information!

Stylized Facts

Marketing Employment Share

- Labor-based measurement:

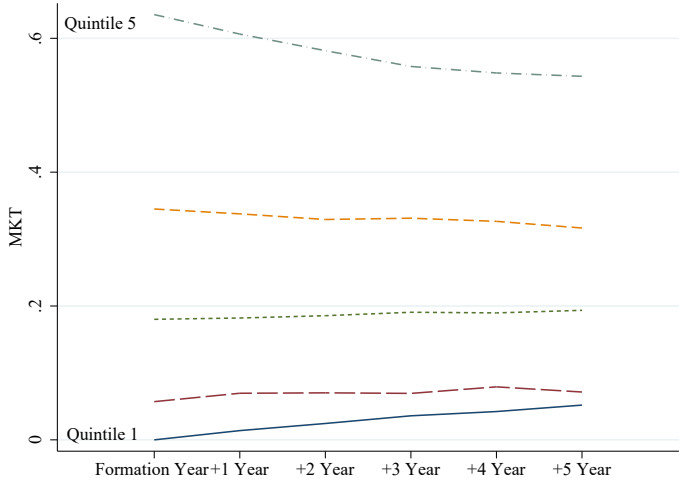
$$\text{MKT} = \frac{\#\text{ of registered brokers}}{\#\text{ of employees}}$$

  - Form ADV: # of registered representatives as broker-dealers
  - At the fund company level, 2011-2020 annual
  - Caveats: In-house marketing ability (lower bound)

- Significant cross-sectional difference:

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
MKT	3776	**23.70%**	**24.40%**	0.00%	17.60%	38.60%
Vol (MKT)	2918	7.85%	6.80%	2.98%	6.15%	10.20%
Range (MKT)	2918	21.10%	17.20%	8.33%	16.70%	28.00%

Fact 2: Heterogeneous Persistence of Marketing Employment Share



Sort fund companies into quintiles based on MKT at each year and track the average MKT of each quintile over the next five years

Lack of persistent performance

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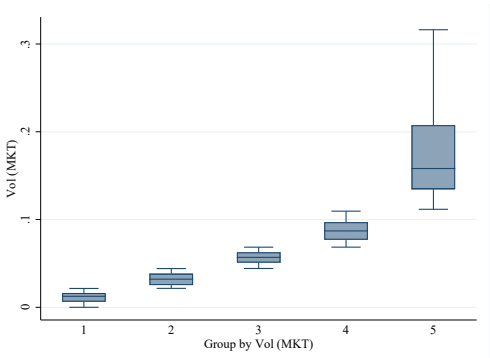

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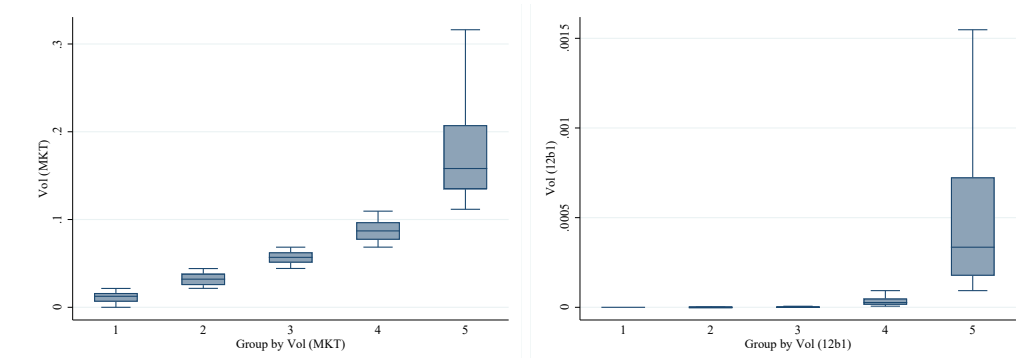


The difference in variability of marketing employment share is larger than 12b-1 fee-based measure of marketing effort.

A Model

Model Setup

- $t = 0, 1, 2$
- A risk-free bond $r_f = 0$
- An array of mutual fund i produces a risky return of r_{it} at time $t = 0, 1, 2$:

$$r_{it} = \alpha_i + \epsilon_{it}, \quad \epsilon_{it} \sim N(0, \sigma_\epsilon^2)$$

- $\alpha_i \in \{\alpha_l, \alpha_h\}$: the unobservable ability of the manager of fund i, where $\alpha_l < 0 < \alpha_h$
- Performance chasers (p) and sophisticated investors (s): Initial wealth W_0

$$E(-e^{-\gamma W_2^j}), \quad j = p, s.$$

Investors

- Performance chasers (p):
  - $X_{i0}^{p} = 0$ unit of fund i at date 0
  - prior belief: $\alpha_i = \alpha_h$ with $\tilde{q} \sim \mathcal{U}[0, 1]$
  - at t $= 1$, performance chasers can improve their information set by paying participation cost c_i to learn about the expected value of α_i (more specifically, q)
  - information set: I_1^p
  - following Huang, Wei and Yan (2007)

- Sophisticated investors (s):
  - $X_{i0}^{s} > 0$ unit of fund i at date 0
  - prior belief: $\alpha_i = \alpha_h$ with probability q
  - information set: I_1^s

Fund Companies and Marketing

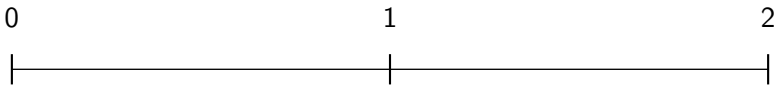
- Fund company choose marketing employment strategy: π^*

1. **Information Acquisition:** Lower the information acquisition cost $c_i(m)$ of fund i $c(\cdot) > 0, \quad c'(\cdot) < 0, \quad c''(\cdot) < 0$ — *Performance Chasers*
2. **Signaling:** A fund company's marketing efforts reveal relevant information about the manager's ability — *Sophisticated Investors*
   - A marketing strategy π *at* $t = 0$ (after observing r_{i0})

$$\pi : \underbrace{\{\alpha_l, \alpha_h\}}_{\text{type}} \times \underbrace{\{m \in M\}}_{\text{signal}} \to [0, 1],$$

   - Marketing employment policy m is a signaling device.
   - π is communicated with sophisticated investors at $t = 1$.

Timeline



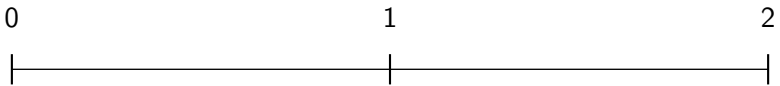
Date 0:

- Funds observe r_{i0}, α_i and choose marketing strategy $\pi_{|r_{i0}}$

Date 1:

- Funds choose m_i according to $\pi_{|r_{i0}}$
- Performance chasers choose whether to pay c_{ki}
- Sophisticated investors know about $\pi_{|r_{i0}}$

Timeline



Date 0:

- Funds observe r_{i0}, α_i and choose marketing strategy $\pi_{|r_{i0}}$

Date 1:

- Funds choose m_i according to $\pi_{|r_{i0}}$
  - receive the net flow
- Performance chasers choose whether to pay c_{ki}
  - if pay the cost, update $\alpha_i|q, r_{i0}, r_{i1}$, choose the optimal allocation X_{i1}^{n*}
- Sophisticated investors know about $\pi_{|r_{i0}}$
  - update $\alpha_i|q, r_{i0}, r_{i1}, m_i, \pi$, choose the optimal allocation X_{i1}^{s*}

Date 2:

- Return realizes

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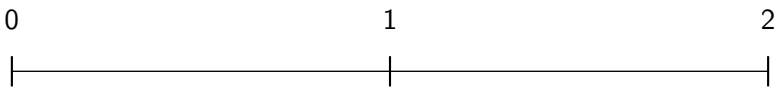

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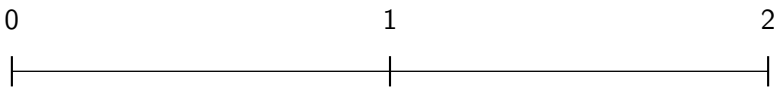

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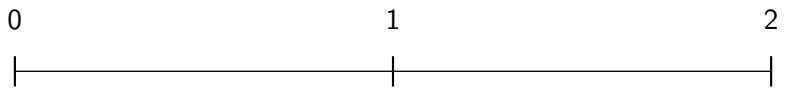

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Equilibrium Marketing Employment Strategy

- Nash equilibrium: 1) Sophisticated investors observe the marketing strategy and find optimal allocation. 2) Given the optimal allocation of sophisticated investors, fund companies maximize expected profits. Nash Equilibrium
- At $t = 0$, the fund company chooses its marketing strategy to maximize the expected profits of its funds, *given their own types and* r_0

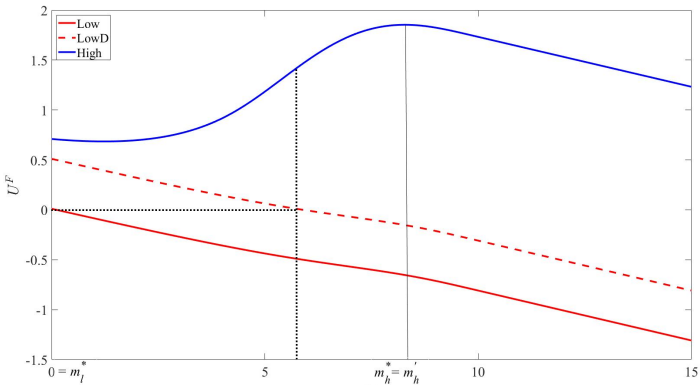
$$U^F(\alpha, m, X_1^s) = f \int_{-\infty}^{+\infty} \left(X_1^s + \underbrace{\lambda \min[1, \frac{g(r_1; r_0)}{c(m)}] X_1^{n*}}_{\text{learning}} \right) \phi(r_1|\alpha, \sigma_\epsilon) dr_1 - wm$$

where λ is the mass of performance chasers, and f is the fee.

- **Proposition 1**

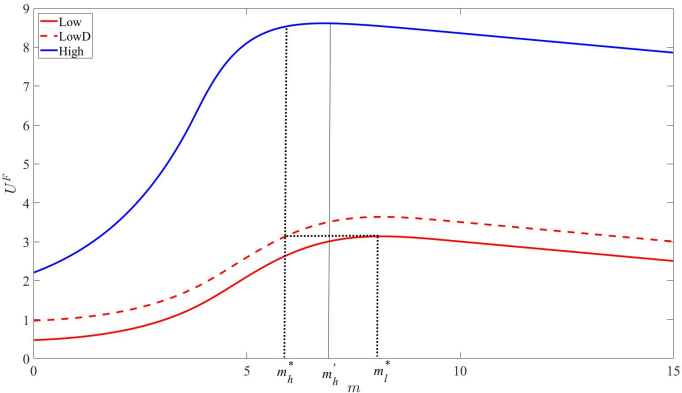
  Given $r_0 \geq \hat{r}$, the single crossing property is satisfied. A separating equilibrium exists and satisfies the intuitive criterion.

Marketing Employment Strategy: Separating when $r_0 > \hat{r}$



- When r_0 is small, $\frac{\partial U^F(\alpha_l, m, X_1^e)}{\partial m}|_{m=0} < 0$, the signal is only productive for high-type
- The optimal marketing is **positive** for the high type and **zero** for the low type.

Marketing Employment Strategy: Separating when r_0 is even higher!



- When r_0 is large, $\frac{\partial U^F(\alpha_h, m, X_1^e)}{\partial m}|_{m=0} > \frac{\partial U^F(\alpha_l, m, X_1^e)}{\partial m}|_{m=0} > 0$, both types have productive signals.
- The optimal marketing is **positive** for both high type and low type.

Separating Equilibrium

Proposition 2

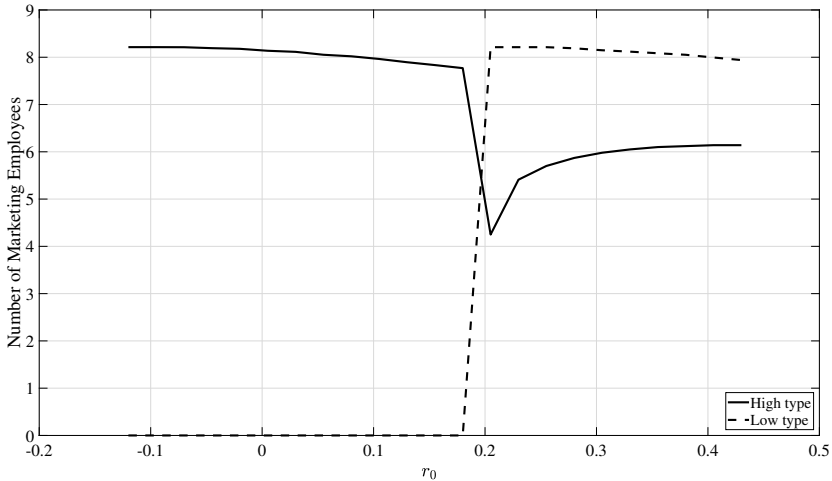
In any separating equilibrium $r_0 \geq \hat{r}$, a high-type manager always chooses to hire marketing employees, $m_h^* = m^*(r_0, \alpha_h) > 0$, while a low-type manager's policy is the following:

$$m_l^* = \begin{cases} m^*(r_0,\, \alpha_l) & \text{if} \quad r_0 > \tilde{r} \\ 0 \qquad\qquad\quad \text{if} \quad r_0 \leq \tilde{r} \end{cases} \tag{1}$$

where $\tilde{r} > \hat{r}$. Moreover, there exists a separating equilibrium such that $m_l^* > m_h^* > 0$ when r_0 is large enough.

- The level of m^* does not necessarily signal the skill type. Instead, it is the entire marketing policy $m^*(r_0)$.

Figure: Optimal Marketing Employment for Two Types of Abilities

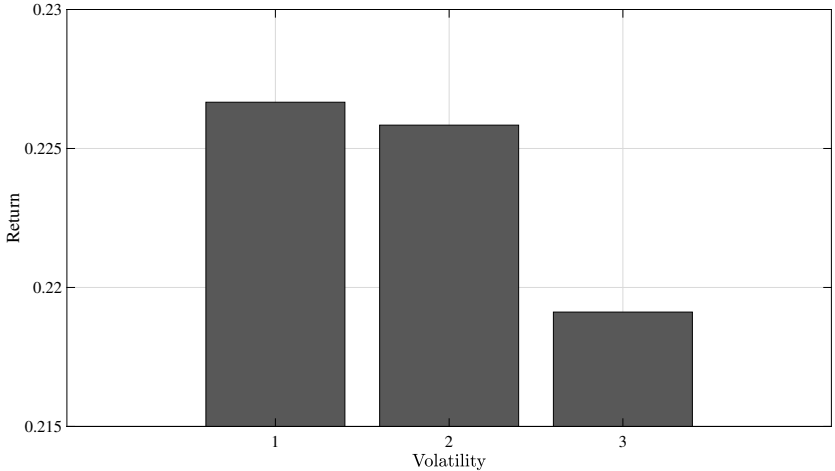


High-type funds maintain their marketing forces even if they experience poor performance (persistent marketing), while low-type funds choose to enhance the marketing after a strong past performance (selective marketing).

Model Implication 1: Persistence of Marketing Strategy and Manager Skill

- The persistence of marketing strategy, instead of past performance or the level of marketing effort, then reveals the fund company's average skill.
- **Persistent** marketing: Given $\alpha_l \leq \alpha_h$ and ϵ_{it} is normally distributed, there is smaller variation in the marketing labor force $\sigma(m_h^*)$ in the high-type fund companies than that in the low-type fund companies.
  - Volatility of marketing strategies is correlated with the fund performance.

Figure: Return predictability of marketing strategy volatility



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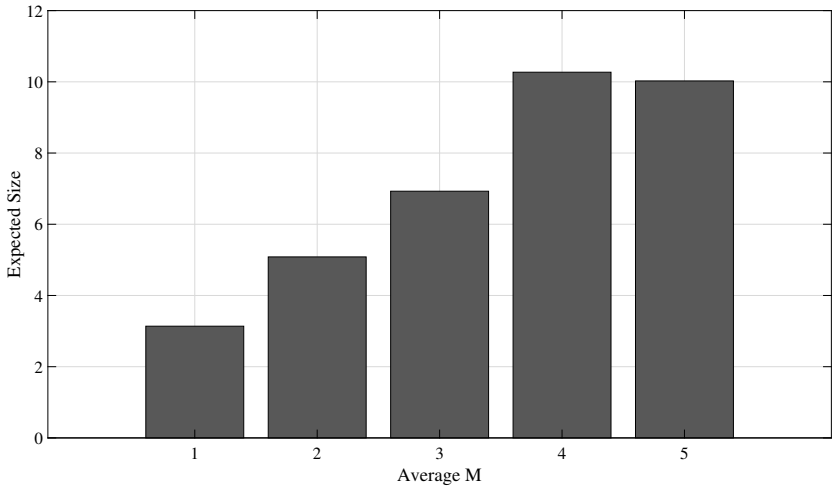
Model Implication 2: Marketing Strategies and Fund Size

Figure: Relation between Expected Size and the Optimal Marketing strategy



Testable Model Implications

- More persistent marketing efforts, not the level of MKT ratio, predicts the investment ability of funds
- The expected fund size is increasing in the number of marketing employees given the fund's past performance r_0 in all four panels.

Marketing Persistence and Performance: Predictive

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	6-factor Alpha$^g_{t+1}$			CAPM Alpha$^g_{t+1}$			Gross Return$_{t+1}$		
Vol(MKT)$_t$	-0.720		-0.741	-0.588		-0.624	-0.723		-0.721
	(-5.45)		(-5.70)	(-4.61)		(-4.71)	(-4.29)		(-4.60)
MKT$_t$		-0.052	0.039		-0.047	0.072		-0.131	-0.043
		(-1.49)	(1.14)		(-1.16)	(1.28)		(-2.64)	(-0.57)
Log Firm Assets$_t$	0.017	0.033	0.017	0.019	0.020	0.020	0.006	0.023	0.006
	(1.25)	(3.45)	(1.31)	(1.63)	(1.89)	(1.72)	(0.35)	(2.47)	(0.29)
Log Firm Age$_t$	0.037	0.018	0.039	0.065	0.029	0.068	0.096	0.070	0.098
	(1.41)	(0.63)	(1.45)	(2.09)	(1.05)	(2.12)	(2.41)	(2.73)	(2.44)
Firm Expense$_t$	-3.844	1.128	-3.998	-4.277	-3.706	-4.474	1.808	10.024	1.650
	(-0.93)	(0.31)	(-0.97)	(-0.89)	(-0.59)	(-0.92)	(0.31)	(1.90)	(0.28)
Log No. of Funds$_t$	-0.037	-0.056	-0.039	-0.036	-0.038	-0.039	-0.034	-0.057	-0.034
	(-1.96)	(-3.61)	(-2.06)	(-2.17)	(-2.63)	(-2.46)	(-1.56)	(-2.95)	(-1.58)
6-factor Alpha^g_t	0.049	0.025	0.049						
	(2.00)	(1.09)	(1.99)						
CAPM Alpha^g_t				0.043	0.061	0.043			
				(1.80)	(2.00)	(1.76)			
Gross Return$_t$							0.013	0.049	0.013
							(0.27)	(1.21)	(0.27)
Obs.	17523	30831	17523	17523	30831	17523	17803	33558	17803
Adj. R^2	0.101	0.102	0.102	0.117	0.110	0.118	0.172	0.146	0.174

One-std increase in Vol(MKT) is associated with 3.75 bps higher 6-factor alpha per month.

Net Return

12b1

MKT and Fund Flows

$$Firm\ Flow_{j,t+1} = \alpha + \beta_1 MKT_{j,t} + Controls_{j,t} + \epsilon_{i,t+1}.$$

	(1)	(2)	(3)	(4)	(5)	(6)
	Firm Flow$_{t+1}$		ΔFirm Size$_{t+1}$		ΔFirm Revenue$_{t+1}$	
MKT$_t$	1.319	1.258	0.090	-0.017	0.074	0.051
	(2.39)	(0.94)	(2.62)	(-0.19)	(2.95)	(0.71)
Log Firm Assets$_t$	0.122	-1.895	-0.004	-0.245	-0.003	-0.159
	(1.02)	(-3.39)	(-0.75)	(-9.17)	(-0.80)	(-9.48)
Log Firm Age$_t$	-1.239	0.275	-0.111	-0.178	-0.067	-0.086
	(-5.37)	(0.51)	(-8.63)	(-3.34)	(-6.69)	(-2.37)
Firm Expense$_t$	-163.042	-242.285	-13.255	-20.688	-10.699	-31.372
	(-4.51)	(-2.34)	(-5.37)	(-2.15)	(-6.05)	(-4.24)
Net Return$_t$	1.006	2.919	0.691	0.356	0.494	0.325
	(0.83)	(2.14)	(7.92)	(4.92)	(7.75)	(5.44)
Firm FE	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2976	2890	2976	2890	2976	2890
Adj. R^2	0.059	0.292	0.166	0.410	0.150	0.335

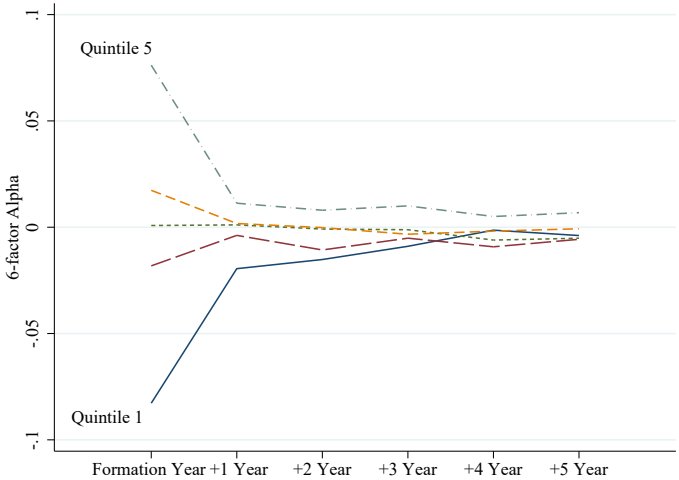
A one standard deviation increase in MKT is associated with a 32.2% increase in fund flow, which equals 53% of the average growth rate 60.7% during our sample period.

Conclusion

- Marketing efforts are substantially different across fund companies. The marketing employment share is persistent for a large number of funds.
- The persistence is heterogeneous across fund companies
- Uncover a significant relationship between the persistence of marketing employment strategy and fund performance
- A framework based on costly learning and signaling helps explain the observed strategic marketing decision

The economics of marketing: commitment and persistence

Lack of Persistence of Fund Company Performance (Carhart 1997)



Sort fund companies into quintiles based on performance (i.e., adjusted gross returns) at each year and track the average performance of each quintile over the next five years

Nash Equilibrium

The environment represents a signaling game between funds and sophisticated investors.

- The allocation strategy for sophisticated investors is a function μ: $\mathbb{M} \times \mathcal{X} \to [0,1]$ where $\sum_{X_1^s \in \mathcal{X}} \mu(m, X_1^s) = 1$ for all m. The marketing strategy for fund companies is $\pi : \{\alpha_l, \alpha_h\} \times \{m \in M\} \to [0,1]$.
- Behavior strategies (π^*, μ^*) form a **Nash Equilibrium** if and only if
  1) for $i = l, h$, $\quad \pi^*(\alpha_i, m') > 0$ implies

$$\sum_{X_1^s} U^F(\alpha_i, m', X_1^s)\mu^*(m', X_1^s) = \max_m \sum_{X_1^s} U^F(\alpha_i, m, X_1^s)\mu^*(m, X_1^s) \tag{2}$$

  2) for each $m' \in M$ such that $q_1^s \pi^*(\alpha_h, m') + (1 - q_1^s)\pi^*(\alpha_l, m') > 0$, $\mu^*(m', X_1^{s\prime}) > 0$ implies,

$$\sum_{\alpha_l, \alpha_h} U^s(\alpha_i, m, X_1^{s\prime}) q_1^{s*}(\alpha_i, X_1^{s\prime}) = \max_{X_1^s} \sum_{\alpha_l, \alpha_h} U^s(\alpha_i, m, X_1^s) q_1^{s*}(\alpha_i, X_1^s) \tag{3}$$

  3) Sophisticated investors update their beliefs based on the Bayes' rule.

Summary Statistics: Family Level

Table: Advisory Firm Variables (Annually)

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
MKT	3776	23.70%	24.40%	0.00%	17.60%	38.60%
Vol (MKT)	2918	7.85%	6.80%	2.98%	6.15%	10.20%
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12b1	2547	0.3340%	0.1780%	0.2500%	0.2650%	0.4050%
Vol $(12b1)_{vw}$	2338	0.0066%	0.0233%	0.0000%	0.0001%	0.0026%
Vol $(12b1)_{ew}$	2340	0.0074%	0.0244%	0.0000%	0.0002%	0.0036%
Firm Expenses	3776	1.11%	0.50%	0.77%	1.07%	1.39%
Net Return	3776	7.55%	13.90%	-1.10%	6.21%	15.00%
Firm Flow	3776	60.70%	504.00%	-55.20%	-3.41%	72.00%
ΔFirm Size	3160	9.55%	48.90%	-9.63%	6.77%	22.50%
ΔFirm Revenue	3160	6.51%	37.50%	-7.89%	3.96%	17.00%

Table: Advisory Firm Variables (Monthly)

Variable	Obs	Mean	Std. Dev.	P25	P50	P75
Firm Assets	43942	40687	220988	189	1263	11605
Log Firm Assets	43942	7.31	2.76	5.25	7.14	9.36
No. of Funds	43942	19.00	38.50	2.00	5.00	14.00
Log No. of Funds	43942	2.02	1.26	1.10	1.79	2.71
Firm Age	43942	20.50	17.20	7.25	17.70	27.70
Log Firm Age	43942	2.74	0.87	2.11	2.93	3.36
Gross Return	43942	0.70%	3.83%	-0.78%	0.71%	2.40%
6-factor Alpha^g	37998	-0.02%	1.86%	-0.55%	0.02%	0.56%
CAPM Alpha^g	37998	-0.16%	2.07%	-0.83%	-0.03%	0.61%
Net Return	43942	0.61%	3.83%	-0.88%	0.63%	2.31%
6-factor Alpha^n	38244	-0.12%	1.85%	-0.64%	-0.04%	0.46%
CAPM Alpha^n	38244	-0.25%	2.06%	-0.92%	-0.10%	0.51%
Value Added	37946	-0.07	96.30	-2.88	0.08	3.81

Marketing Persistence and Fund Performance: Net Return

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	6-factor Alpha$^n_{t+1}$			CAPM Alpha$^n_{t+1}$			Net Return$_{t+1}$		
Vol(MKT)$_t$	-0.779		-0.798	-0.646		-0.679	-0.781		-0.777
	(-5.32)		(-5.50)	(-4.56)		(-4.55)	(-4.65)		(-4.94)
MKT$_t$		-0.063	0.035		-0.060	0.063		-0.144	-0.050
		(-1.67)	(1.02)		(-1.42)	(1.13)		(-2.85)	(-0.67)
Log Firm Assets$_t$	0.019	0.034	0.020	0.020	0.020	0.021	0.009	0.023	0.008
	(1.47)	(3.76)	(1.51)	(1.80)	(2.01)	(1.87)	(0.48)	(2.56)	(0.41)
Log Firm Age$_t$	0.032	0.020	0.034	0.059	0.028	0.062	0.089	0.069	0.091
	(1.20)	(0.70)	(1.24)	(1.87)	(1.03)	(1.89)	(2.27)	(2.62)	(2.30)
Firm Expense$_t$	-12.908	-7.184	-13.075	-13.875	-11.997	-14.089	-7.653	1.674	-7.806
	(-3.02)	(-2.02)	(-3.07)	(-3.10)	(-2.02)	(-3.09)	(-1.30)	(0.31)	(-1.32)
Log No. of Funds$_t$	-0.041	-0.056	-0.043	-0.036	-0.034	-0.039	-0.034	-0.055	-0.034
	(-2.12)	(-3.64)	(-2.21)	(-2.16)	(-2.46)	(-2.43)	(-1.56)	(-2.84)	(-1.57)
6-factor Alpha^n_t	0.050	0.026	0.049						
	(2.05)	(1.09)	(2.05)						
CAPM Alpha^n_t				0.042	0.061	0.042			
				(1.74)	(2.02)	(1.70)			
Net Return$_t$							0.012	0.050	0.011
							(0.25)	(1.23)	(0.24)
Obs.	17584	30977	17584	17584	30977	17584	17803	33558	17803
Adj. R^2	0.104	0.102	0.105	0.120	0.111	0.122	0.172	0.146	0.173

Marketing Persistence and Fund Performance: Robustness

	Gross Return			Net Return		
	(1)	(2)	(3)	(4)	(5)	(6)
	6-factor $Alpha_{t+1}$	CAPM $Alpha_{t+1}$	Firm $Return_{t+1}$	6-factor $Alpha_{t+1}$	CAPM $Alpha_{t+1}$	Firm $Return_{t+1}$
$Range(MKT)_t$	-0.407	-0.351	-0.403	-0.440	-0.383	-0.435
	(-5.88)	(-4.79)	(-4.49)	(-5.66)	(-4.61)	(-4.79)
MKT_t	0.040	0.074	-0.041	0.036	0.065	-0.047
	(1.18)	(1.31)	(-0.55)	(1.07)	(1.16)	(-0.64)
Log Firm $Assets_t$	0.017	0.020	0.005	0.020	0.021	0.008
	(1.31)	(1.71)	(0.29)	(1.51)	(1.87)	(0.41)
Log Firm Age_t	0.038	0.068	0.097	0.033	0.061	0.091
	(1.44)	(2.12)	(2.43)	(1.22)	(1.89)	(2.29)
Firm $Expense_t$	-4.026	-4.525	1.594	-13.117	-14.157	-7.874
	(-0.98)	(-0.93)	(0.27)	(-3.08)	(-3.11)	(-1.33)
Log No. of $Funds_t$	-0.039	-0.039	-0.034	-0.042	-0.038	-0.034
	(-2.04)	(-2.43)	(-1.55)	(-2.19)	(-2.40)	(-1.54)
6-factor $Alpha_t$	0.049			0.049		
	(1.99)			(2.04)		
CAPM $Alpha_t$		0.043			0.042	
		(1.76)			(1.69)	
Firm $Return_t$			0.013			0.011
			(0.26)			(0.24)
Obs.	17523	17523	17803	17584	17584	17803
Adj. R^2	0.102	0.118	0.174	0.106	0.122	0.173

Marketing Persistence and Fund Performance: 12b1 Fee

	Value-weighted		Equal-weighted	
	(1)	(2)	(3)	(4)
	6-factor Alpha$^g_{t+1}$	6-factor Alpha$^n_{t+1}$	6-factor Alpha$^g_{t+1}$	6-factor Alpha$^n_{t+1}$
Vol(12b1)$_t$	-143.611	-155.299	-117.032	-130.828
	(-2.07)	(-2.31)	(-1.92)	(-2.07)
12b1$_t$	-3.588	-2.300	-3.974	-2.474
	(-0.59)	(-0.41)	(-0.65)	(-0.44)
Log Firm Assets$_t$	0.025	0.027	0.025	0.027
	(3.56)	(3.68)	(3.54)	(3.64)
Log Firm Age$_t$	0.015	0.014	0.015	0.014
	(0.35)	(0.35)	(0.35)	(0.35)
Firm Expense$_t$	-4.285	-13.045	-4.279	-13.169
	(-1.34)	(-4.12)	(-1.36)	(-4.21)
Log No. of Funds$_t$	-0.053	-0.053	-0.052	-0.053
	(-2.82)	(-2.90)	(-2.79)	(-2.86)
6-factor Alpha^g_t	0.039		0.039	
	(1.16)		(1.16)	
6-factor Alpha^n_t		0.041		0.041
		(1.14)		(1.15)
Obs.	20547	20626	20571	20650
Adj. R^2	0.141	0.143	0.139	0.141

Marketing Persistence and Fund Performance: Value Added

	Value Added$_{t+1}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Vol(MKT)	-12.953		-12.843			
	(-5.28)		(-5.72)			
Vol(MKT)$_t$				-32.305		-33.695
				(-1.78)		(-1.82)
MKT$_t$		-1.016	-0.760		-1.016	-0.686
		(-0.68)	(-0.53)		(-0.68)	(-0.28)
Log Firm Assets$_t$	2.503	2.157	2.517	2.491	2.157	2.527
	(2.93)	(2.91)	(2.97)	(1.69)	(2.91)	(1.73)
Log Firm Age$_t$	-2.134	-1.347	-2.095	-2.541	-1.347	-2.478
	(-2.73)	(-1.71)	(-2.65)	(-2.31)	(-1.71)	(-2.23)
Firm Expense$_t$	246.872	267.091	251.517	173.580	267.091	175.742
	(1.31)	(1.65)	(1.34)	(0.58)	(1.65)	(0.58)
Log No. of Funds$_t$	-4.099	-3.637	-4.125	-3.865	-3.637	-3.939
	(-7.34)	(-5.08)	(-7.45)	(-3.44)	(-5.08)	(-3.55)
Value Added$_t$	0.063	0.055	0.062	0.002	0.055	0.002
	(1.22)	(1.21)	(1.21)	(0.06)	(1.21)	(0.05)
Obs.	25633	30799	25633	17508	30799	17508
Adj. R^2	0.176	0.172	0.175	0.157	0.172	0.155