Herd Behavior and Mutual Fund Performance: Internet Appendix

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Table A1: Multivariate regressions: Performance of *leading*, *contemporaneous*, and *following* funds

This table reports results from regressions of fund alphas on measures of trading similarity and fund and manager characteristics. *turnover*, *expenses*, and *TNA* (total net assets) are obtained from CRSP. New money growth, *NMG*, equals the dollar inflows or outflows over the quarter scaled by beginning of quarter total net assets and is winsorized at 1% and 99%. *mgr experience* equals the number of quarters since the manager first appeared in CRSP. *fund age* is the number of quarters since fund inception. *team managed* is an indicator variable set to one if the fund is team managed. *fund performance* is risk adjusted fund returns, where the method of risk adjustment corresponds to that used to construct the dependent variable – in column one fund performance is CAPM alpha over quarter t, and in column two fund performance is measured as the fund's Carhart (1997) alpha, etc.. Quarter effects are included in all regressions. Standard errors are clustered at the fund level. Estimates that are statistically different from zero at levels of 10%, 5%, and 1% are denoted by *, **, *** respectively.

	(1) CAPM$_{t+2}$	(2) Carhart$_{t+2}$	(3) CPZ$_{t+2}$	(4) CS$_{t+2}$	(5) CAPM$_{t+1}$	(6) Carhart$_{t+1}$	(7) CPZ$_{t+1}$	(8) CS$_{t+1}$	(9) CAPM$_{t+1}$	(10) Carhart$_{t+1}$	(11) CPZ$_{t+1}$	(12) CS$_{t+1}$
leading$_{t-3,t}$	0.0273***	0.0052*	0.0047*	0.0546**								
	(7.42)	(1.64)	(1.68)	(2.30)								
contemporaneous$_{t-3,t}$					-0.0172***	-0.0019	-0.0042*	-0.0729***				
					(-6.54)	(-0.82)	(-1.86)	(-4.41)				
following$_{t-3,t}$									-0.0045	-0.0088***	-0.0073**	-0.0397*
									(-1.21)	(-2.75)	(-2.30)	(-1.70)
log(TNA)$_t$	0.0002	-0.0004	0.0003	-0.0081*	0.0006	-0.0008	-0.0006	-0.0013	0.0003	-0.0007	-0.0006	-0.0023
	(0.23)	(-0.57)	(0.47)	(-1.68)	(0.76)	(-1.07)	(-0.77)	(-0.30)	(0.41)	(-1.02)	(-0.80)	(-0.52)
log(TNA)^2_t	-0.0001	0.0000	-0.0000	0.0005	-0.0001*	0.0001	0.0000	-0.0001	-0.0001	0.0000	0.0000	0.0000
	(-1.14)	(0.41)	(-0.84)	(1.27)	(-1.82)	(0.82)	(0.53)	(-0.18)	(-1.50)	(0.76)	(0.53)	(0.01)
turnover$_t$	-0.0006**	-0.0005	-0.0004	-0.0023	-0.0009***	-0.0005	-0.0006**	-0.0021	-0.0009***	-0.0005	-0.0007**	-0.0022
	(-2.01)	(-1.32)	(-1.64)	(-1.09)	(-2.82)	(-1.54)	(-2.51)	(-0.90)	(-2.87)	(-1.60)	(-2.57)	(-0.95)
expenses$_t$	-1.3996***	-0.9752***	-0.5966*	5.6551	-1.4152***	-0.9164***	-0.3834	1.5556	-1.4582***	-0.9200***	-0.3941	1.3782
	(-3.25)	(-3.19)	(-1.83)	(1.53)	(-3.18)	(-3.06)	(-1.17)	(0.65)	(-3.25)	(-3.07)	(-1.20)	(0.57)
log(fund age)$_t$	0.0001	-0.0001	-0.0001	0.0006	-0.0001	-0.0001	-0.0001	0.0000	-0.0001	-0.0001	-0.0001	-0.0001
	(0.26)	(-0.83)	(-0.66)	(0.51)	(-0.46)	(-0.72)	(-0.37)	(0.01)	(-0.66)	(-0.72)	(-0.42)	(-0.11)
mgr. experience$_t$	-0.0000	0.0000	0.0000	-0.0001	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0001	0.0001
	(-0.73)	(0.25)	(1.18)	(-0.75)	(0.58)	(0.59)	(1.42)	(1.09)	(0.90)	(0.59)	(1.49)	(1.30)
fund performance$_t$	0.0709***	-0.0236	0.0483***	0.1322	0.1043***	0.0716***	0.0352***	-0.0705	0.1053***	0.0716***	0.0352***	-0.0694
	(8.09)	(-1.62)	(3.88)	(1.20)	(10.89)	(5.51)	(3.04)	(-0.70)	(11.00)	(5.51)	(3.04)	(-0.69)
NMG$_t$	-0.0023	0.0018	0.0054**	0.0211	-0.0064***	-0.0018	0.0036*	0.0413***	-0.0061**	-0.0018	0.0036*	0.0430***
	(-0.88)	(0.79)	(2.44)	(1.26)	(-2.60)	(-0.83)	(1.85)	(2.68)	(-2.46)	(-0.84)	(1.86)	(2.78)
team managed$_t$	-0.0023***	-0.0027***	-0.0020***	-0.0047	-0.0024***	-0.0024***	-0.0020***	-0.0044	-0.0023***	-0.0024***	-0.0020***	-0.0041
	(-3.10)	(-4.65)	(-3.77)	(-1.19)	(-3.29)	(-4.52)	(-3.74)	(-1.15)	(-3.21)	(-4.45)	(-3.66)	(-1.08)
Observations	27,587	27,587	25,539	27,495	28,873	28,873	26,640	29,390	28,868	28,868	26,635	29,385
R-squared	0.010	0.002	0.004	0.001	0.016	0.006	0.003	0.001	0.014	0.007	0.003	0.001

Table A2: Performance, *leading*, and other measures of trading similarities

This table reports results from regressions of fund alphas on *leading* and measures of similarity in trades from prior literature. *FHM* is the fund herding measure developed in Grinblatt et al. (1995) (averaged within the fund over quarter $t-3$ to t). $\hat{\delta}_m^{**}$ is the measure of skill based on trading similarity developed in Cohen et al. (2005). *turnover*, *expenses*, and *TNA* (total net assets) are obtained from CRSP. New money growth, *NMG*, equals the dollar inflows or outflows over the quarter scaled by beginning of quarter total net assets and is winsorized at 1% and 99%. *mgr experience* equals the number of quarters since the manager first appeared in CRSP. *fund age* is the number of quarters since fund inception. *team managed* is an indicator variable set to one if the fund is team managed. *fund performance* is risk adjusted fund returns, where the method of risk adjustment corresponds to that used to construct the dependent variable. Quarter effects are included in all regressions. Standard errors are clustered at the fund level. Estimates that are statistically different from zero at levels of 10%, 5%, and 1% are denoted by *, **, *** respectively.

	(1) CAPM_{t+2}	(2) Carhart_{t+2}	(3) CPZ_{t+2}	(4) CS_{t+2}
$leading_{t-3,t}$	0.0282***	0.0053*	0.0055*	0.0538**
	(7.58)	(1.69)	(1.94)	(2.31)
$FHM_{t-3,t}$	-0.1330***	-0.1982***	-0.1919***	-1.2069***
	(-2.92)	(-4.77)	(-5.28)	(-4.15)
$\hat{\delta}_m^{**}{}_{t-3,t}$	0.0753	0.1095**	0.0985**	0.2319
	(1.51)	(2.33)	(2.07)	(0.74)
$log(TNA)_t$	0.0005	-0.0002	0.0005	-0.0080*
	(0.51)	(-0.32)	(0.75)	(-1.72)
$log(TNA)^2_t$	-0.0001	0.0000	-0.0001	0.0005
	(-1.44)	(0.19)	(-1.07)	(1.28)
$turnover_t$	-0.0004	-0.0000	0.0000	0.0003
	(-1.17)	(-0.08)	(0.10)	(0.12)
$expenses_t$	-1.3329***	-0.8521***	-0.4434	6.8388*
	(-2.95)	(-2.84)	(-1.35)	(1.80)
$log(fund\ age)_t$	0.0001	-0.0001	-0.0000	0.0010
	(0.47)	(-0.51)	(-0.34)	(0.85)
$mgr.\ experience_t$	-0.0000	-0.0000	0.0000	-0.0001
	(-1.04)	(-0.39)	(0.51)	(-1.39)
$fund\ performance_t$	0.0681***	-0.0265*	0.0244**	0.3049***
	(6.09)	(-1.84)	(2.20)	(3.94)
NMG_t	-0.0018	0.0004	0.0047**	0.0076
	(-0.69)	(0.18)	(2.12)	(0.44)
$team\ managed_t$	-0.0023***	-0.0025***	-0.0019***	-0.0030
	(-2.95)	(-4.42)	(-3.59)	(-0.76)
Observations	27,580	27,580	25,532	26,997
R-squared	0.009	0.005	0.006	0.004

Table A3: Performance, *distance*, and other measures of holdings similarities

This table reports results from regressions of fund alphas on measures of holdings similarity and fund and manager characteristics. *distance* is the measure of holdings similarity developed in Section 3.2. *activeshare* is from Cremers and Petajisto (2009). *ICI* is the industry concentration measure developed in Kacperczyk et al. (2005). $\hat{\delta}^*_{m,t}$ is the skill measure based on holdings similarity developed in Cohen et al. (2005). *turnover*, *expenses*, and *TNA* (total net assets) are obtained from CRSP. New money growth, *NMG*, equals the dollar inflows or outflows over the quarter scaled by beginning of quarter total net assets and is winsorized at 1% and 99%. *mgr experience* equals the number of quarters since the manager first appeared in CRSP. *fund age* is the number of quarters since fund inception. *team managed* is an indicator variable set to one if the fund is team managed. Quarter effects are included in all regressions. Standard errors are clustered at the fund level. Estimates that are statistically different from zero at levels of 10%, 5%, and 1% are denoted by *, **, *** respectively.

	(1) CAPM_{t+1}	(2) Carhart_{t+1}	(3) CPZ_{t+1}	(4) CS_{t+1}
$distance_t$	0.0822***	0.0380**	0.0142	0.1270
	(4.27)	(2.50)	(0.97)	(1.14)
$activeshare_t$	-0.0250***	-0.0025	0.0086**	-0.1617***
	(-4.58)	(-0.61)	(2.30)	(-5.41)
ICI_t	0.0221	0.0167	-0.0155	0.2437**
	(1.03)	(1.01)	(-1.07)	(2.16)
$\hat{\delta}^*_{m,t}$	-0.1169*	0.1837***	0.2081***	1.2901***
	(-1.72)	(3.63)	(4.64)	(3.73)
$log(TNA)_t$	-0.0133***	-0.0090***	-0.0083***	-0.0419***
	(-4.74)	(-4.32)	(-4.24)	(-2.74)
$log(TNA)^2_t$	0.0004*	0.0003*	0.0002	0.0005
	(1.78)	(1.68)	(1.46)	(0.45)
$turnover_t$	0.0033***	0.0016*	0.0011	0.0144***
	(3.01)	(1.75)	(1.52)	(2.69)
$expenses_t$	0.9660	2.1726*	2.4960**	11.0494
	(0.68)	(1.82)	(2.37)	(1.53)
$log(fund\ age)_t$	0.0003	-0.0001	0.0004	-0.0014
	(0.59)	(-0.17)	(1.16)	(-0.44)
$mgr.\ experience_t$	-0.0001**	-0.0000	-0.0000	-0.0003*
	(-2.55)	(-1.59)	(-0.85)	(-1.85)
$fund\ performance_t$	-0.0149	-0.0335**	-0.0490***	-0.3997***
	(-0.73)	(-2.04)	(-3.30)	(-3.43)
NMG_t	-0.0143***	-0.0091***	-0.0053**	-0.0240
	(-4.11)	(-3.33)	(-1.98)	(-1.08)
$team\ managed_t$	0.0035***	-0.0005	0.0000	0.0033
	(2.93)	(-0.63)	(0.04)	(0.48)
Observations	22,902	22,902	22,902	22,902
R-squared	0.020	0.016	0.017	0.010

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