Internet Appendix: Does Social Interaction Spread Fear among Institutional Investors? Evidence from COVID-19

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Table IA.1 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q1, HiSCI Funds Far from Hotspots

This table reports the results of the panel regressions on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between 2016Q1 and 2020Q1. *HiSCI* counties are defined as non-hotspot counties whose aggregate SCI to hotspot counties are in the top quartile and are restricted to counties at least 100 miles away from a hotspot. *Share Change (%)* is the change in the number of shares scaled by prior quarter number of shares. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hotspot	-1.745	0.571	0.292				
	(-1.41)	(0.53)	(0.27)				
Hotspot×COVID	-9.204***	-8.555***	-8.118***	-8.462***	-8.102***	-8.470***	-8.248***
	(-3.57)	(-3.77)	(-3.64)	(-4.03)	(-3.95)	(-4.40)	(-4.07)
HiSCI	-1.130	-2.994***	-3.501***				
	(-0.87)	(-3.10)	(-3.59)				
HiSCI×COVID	-8.737***	-7.911***	-7.409***	-9.296***	-8.911***	-9.159***	-9.018***
	(-3.33)	(-3.27)	(-3.14)	(-3.52)	(-3.52)	(-3.71)	(-4.07)
GEO	-1.858	-0.795	-1.302				
	(-1.47)	(-0.74)	(-1.16)				
GEO×COVID	-11.933***	-9.856**	-9.305**	-11.141***	-10.707***	-10.941***	-10.240***
	(-2.72)	(-2.47)	(-2.34)	(-2.79)	(-2.70)	(-2.90)	(-2.78)
COVID	1.919	2.611		1.827			
	(1.07)	(1.47)		(1.10)			
Observations	5,023,657	4,876,486	4,876,295	4,836,605	4,836,418	4,827,894	4,827,816
Adjusted R^2	0.001	0.037	0.050	0.059	0.074	0.104	0.132
Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	No	Yes	No	No
Fund FE	No	No	No	Yes	Yes	Yes	No
Quarter FE	No	No	Yes	No	Yes	No	No
Fund × Industry FE	No	No	No	Yes	Yes	Yes	Yes
Fund × Year FE	No	No	No	No	No	No	Yes
Firm × Quarter FE	No	No	No	No	No	Yes	Yes

Table IA.2 Fund Future Quarterly Return Regressions, Conditioning on Fund Manager Skill, HiSCI Funds Far from Hotspots

This table reports panel regressions of future quarterly fund returns between 2016Q1 and 2020Q1, conditioning on fund manager's CAPM alpha in the past 5 years (col 1-2), Carhart 4 alpha in the past 5 years (col 3-4), and fund manager skill calculated as per Berk and van Binsbergen (2015) (col 5-6). *HiSCI* counties are defined as non-hotspot counties whose aggregate SCI to hotspot counties are in the top quartile and are restricted to counties at least 100 miles away from a hotspot. The dependent variable is the value-weighted fund return less fees in quarter q+1 ($VRet_{q+1}$). *Perf_CAPM/Perf_Car4/Perf_BB* is an indicator variable set to 1 if the fund is in the top-tercile of CAPM alpha, Carhart-4 alpha or Berk and van Binsbergen (2015) manager skill and 0 otherwise. Control variables are identical to those in Table 2. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and quarter, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Skill Measure *{Perf}*		*Perf_CAPM*			*Perf_Car4*			*Perf_BB*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Hotspot	0.065	0.044		0.105	0.083		0.135	0.116	
	(1.33)	(0.95)		(1.62)	(1.25)		(1.64)	(1.52)	
Hotspot×COVID	-0.355***	-0.447***	-0.187	-0.389***	-0.454***	-0.304	-0.674***	-0.668***	-0.583**
	(-10.44)	(-8.81)	(-0.86)	(-7.26)	(-5.83)	(-1.58)	(-9.21)	(-8.04)	(-2.88)
Hotspot×COVID×{Perf}	0.104	0.238	0.137	0.535***	0.581***	0.719**	1.395***	1.353***	1.338***
	(0.81)	(1.63)	(0.38)	(5.96)	(4.44)	(2.11)	(12.51)	(10.50)	(4.84)
HiSCI	0.171	0.153		0.172	0.135		0.285**	0.232**	
	(1.64)	(1.37)		(1.50)	(1.11)		(2.49)	(2.24)	
HiSCI×COVID	-0.789***	-0.938***	-0.702**	-0.580***	-0.689***	-0.566**	-0.818***	-0.851***	-0.692***
	(-9.03)	(-8.74)	(-2.89)	(-7.20)	(-6.04)	(-2.45)	(-12.63)	(-7.35)	(-3.31)
HiSCI×COVID×{Perf}	0.678***	0.857***	0.857**	0.516***	0.582***	0.783**	0.675***	0.671***	0.592**
	(4.60)	(5.57)	(2.67)	(3.22)	(3.49)	(2.41)	(4.68)	(4.66)	(2.13)
GEO	0.170	0.172		0.182	0.185		0.172	0.191	
	(0.85)	(0.82)		(0.77)	(0.75)		(0.99)	(1.07)	
GEO×COVID	-0.611***	-0.718***	-0.505*	-1.022***	-1.041***	-0.831***	-1.003***	-0.873***	-0.716***
	(-3.12)	(-3.45)	(-1.98)	(-4.44)	(-4.24)	(-3.57)	(-7.96)	(-5.19)	(-3.55)
GEO×COVID×{Perf}	-0.549**	-0.332	-0.305	0.922***	0.894***	0.824**	0.699***	0.586***	0.500*
	(-2.26)	(-1.41)	(-0.83)	(3.58)	(3.42)	(2.33)	(5.01)	(3.37)	(1.85)
Observations	43,675	43,297	43,255	43,675	43,297	43,255	50,509	49,723	49,714
Adjusted R^2	0.800	0.801	0.813	0.799	0.800	0.813	0.799	0.801	0.813
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fund Style × Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	No	No	Yes	No	No	Yes	No	No	Yes

Table IA.3 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2020Q1 (COVID Outbreak Period Only)

This table reports the results of the cross-sectional analysis on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties in 2020Q1. The dependent variables are reported on top of each column. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *Share Change Per Shrout* is the change in share holdings scaled by the total number of shares outstanding (in 10^{-5}s), which is calculated as the change in share number multiplied by the stock price at the beginning of the quarter. Refer to Appendix A for detailed variable definitions of other variables. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and **** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Share Change (%)	*Share Change(%)*	*Share Change (%)*	*Share Change Per Shrout*	*Share Change Per Shrout*	*Share Change Per Shrout*
Hotspot	-9.580***	-7.751***	-3.920***	-3.666**	-2.418	-2.680*
	(-3.58)	(-3.98)	(-2.67)	(-2.44)	(-1.51)	(-1.69)
HiSCI	-13.642***	-10.481***	-8.065***	-5.720***	-4.553***	-4.478**
	(-4.72)	(-4.36)	(-3.59)	(-3.31)	(-2.61)	(-2.54)
GEO		-4.703	-2.680		-0.249	-0.570
		(-1.35)	(-0.83)		(-0.12)	(-0.29)
Flow		1.574***	1.439***		0.596***	0.627***
		(11.95)	(10.76)		(6.62)	(6.88)
HotspotCorp			-0.329		-2.418	-0.496
			(-0.45)			(-1.00)
LnAge			1.168			-4.258***
			(0.54)			(-4.51)
LnAUM			-4.664***			1.535*
			(-3.82)			(1.72)
Fund_Mgt_Fees			-459.985			66.898
			(-1.40)			(0.33)
Fund_Expense			-1.539			0.159
			(-1.55)			(0.37)
Fund_Turnover			-0.003			-0.373
			(-0.01)			(-1.45)
Observations	347,168	330,729	328,810	372,613	353,727	351,710
Adjusted R^2	0.048	0.098	0.108	0.222	0.182	0.183
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.4 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors: Alternative Definitions of Hotspot

This table provides robustness results of the analysis on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties using alternative definition of hotspot counties. Instead of using 2,000 as the threshold number of COVID cases by March 30, 2020, we use 2,500 cases and 1.5 cases per 100,000 population, respectively, to define *Hotspot*. Panel A reports cross sectional regression results using the 2020Q1 data, and Panel B reports results for the full sample between 2016Q1and 2020Q1. The dependent variables are *Share Change (%)* which is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *HiSCI* is defined as non-hotspot counties whose aggregate SCI to hotspot counties are in the top quartile. *GEO* is defined as non-*Hotspot* counties, which are within 100 miles of any one of the hotspot counties. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Panel A: Alternative Definition of Hotspot County in cross sectional analysis of Share Change %: 2016Q1(COVID Period)

	No. Cases >= 2,500		No. Cases per 100,000 Population >= 1.5	
	(1)	(2)	(3)	(4)
Hotspot	-7.148**	-1.872	-9.951***	-3.930***
	(-2.41)	(-1.15)	(-3.75)	(-2.70)
HiSCI	-11.550***	-10.410**	-13.790***	-7.874***
	(-4.09)	(-2.07)	(-4.77)	(-3.14)
GEO		4.142		-1.749
		(0.80)		(-0.45)
Observations	347,168	328,810	347,168	328,810
Adjusted R^2	0.045	0.108	0.048	0.108
Controls	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes

Panel B: Alternative Definition of Hotspot County in panel regression of Share Change %: 2016Q1 to 2020Q1

	No. Cases >= 2,500			No. Cases per 100,000 population >= 1.5		
	(1)	(2)	(3)	(4)	(5)	(6)
Hotspot	0.453			1.056		
	(0.40)			(1.04)		
Hotspot × COVID	-5.917**	-5.841***	-5.401***	-8.985***	-8.665***	-8.606***
	(-2.51)	(-2.73)	(-2.46)	(-4.10)	(-4.38)	(-4.26)
HiSCI	0.325			-1.563*		
	(0.32)			(-1.94)		
HiSCI × COVID	-12.551**	-14.946***	-13.545***	-9.620***	-10.794***	-10.527***
	(-2.33)	(-2.69)	(-2.33)	(-3.35)	(-3.68)	(-3.58)
GEO	-1.849*			0.847		
	(-1.66)			(0.95)		
GEO × COVID	3.647	4.645	4.241	-5.096	-5.130	-4.869
	(0.67)	(0.84)	(0.75)	(-1.17)	(-1.16)	(-1.13)
COVID	0.622			2.966*		
	(0.39)			(1.72)		
Observations	4,876,486	4,836,418	4,827,816	4,876,486	4,836,418	4,827,816
Adjusted R^2	0.036	0.074	0.132	0.037	0.074	0.132
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	No	Yes	No
Fund FE	No	Yes	No	No	Yes	No
Quarter FE	No	Yes	No	No	Yes	No
Fund × Industry FE	No	Yes	Yes	No	Yes	Yes
Fund × Year FE	No	No	Yes	No	No	Yes
Firm × Quarter FE	No	No	Yes	No	No	Yes

Table IA.5 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors: Alternate Measurement of Share Change

This table reports the results of the panel regressions on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between Q1 of 2016 and Q1 of 2020. *Share Change Per Shrout* is the change in share holdings scaled by the total number of shares outstanding (in 10^{-5}s). *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Controls are similar to Table 2. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change Per Shrout*	(2) *Share Change Per Shrout*	(3) *Share Change Per Shrout*
Hotspot	-1.537		
	(-1.59)		
Hotspot×COVID	-0.699	-3.474	-2.177
	(-0.29)	(-1.411)	(-1.25)
HiSCI	-1.391		
	(-1.39)		
HiSCI×COVID	-4.720*	-8.082***	-4.178**
	(-1.65)	(-3.065)	(-2.09)
GEO	-0.830		
	(-0.85)		
GEO×COVID	1.632	-1.693	-1.463
	(0.64)	(-0.622)	(-0.74)
COVID	-3.535*		
	(-1.75)		
Observations	5,335,611	5,300,770	5,300,711
Adjusted R^2	0.000	0.317	0.323
Controls	Yes	Yes	Yes
Firm FE	No	No	No
Fund FE	No	Yes	No
Quarter FE	No	No	No
Fund × Industry FE	No	Yes	Yes
Fund × Year FE	No	No	Yes
Firm × Quarter FE	No	Yes	Yes

Table IA.6 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016 to 2020 (Monthly Data), with Fund × Calendar Month Fixed Effects

This table is similar to Table 7 but the regression model includes fund × calendar month fixed effects. It reports the results of the panel regressions on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between 2016 and 2020, using monthly data. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the year is Jan-Dec 2020 and 0 otherwise in columns 1-12, respectively. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hotspot												
Hotspot×COVID	-0.084	-0.518	-5.461***	1.451	-0.801	0.189	1.539*	3.357***	-1.687	-1.297	-2.412	-4.427**
	(-0.12)	(-0.92)	(-3.33)	(1.63)	(-0.57)	(0.10)	(1.70)	(3.76)	(-0.94)	(-0.48)	(-1.55)	(-2.29)
HiSCI												
HiSCI×COVID	-0.539	-0.630	-7.865***	-0.225	-0.961	1.210	-0.571	0.954*	1.350	2.886	-1.336	-2.458
	(-0.81)	(-1.52)	(-4.06)	(-0.28)	(-1.32)	(0.81)	(-0.96)	(1.92)	(1.28)	(1.01)	(-0.67)	(-0.62)
GEO												
GEO×COVID	2.429***	0.718	-7.910***	3.731***	0.064	-0.914	0.543	0.574	-0.037	-11.689***	-3.805	-12.454**
	(2.61)	(1.47)	(-3.67)	(3.00)	(-0.71)	(-0.59)	(1.00)	(1.23)	(-0.03)	(-3.32)	(-1.48)	(-1.98)
COVID												
Observations	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249	17,312,249
Adjusted R^2	0.117	0.117	0.118	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund × Calendar Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.7 Fund Future Return Regressions, Conditioning on Fund Manager Skill (Monthly Data, 2020Q2)

This table is similar to Table 6 and reports results of the panel regressions of future fund returns ($VRet_{m+1}$, monthly returns over month m+1 where *m* is the month of stock trading) between 2016 and 2020, conditioning on fund manager's CAPM alpha in the past 5 years, Carhart 4 alpha in the past 5 years, and fund manager skill calculated as per Berk and van Binsbergen (2015). The dependent variable is the value-weighted return of the fund less fees in month m+1 ($VRet_{m+1}$). *Perf_CAPM/Perf_Car4/Perf_BB* is an indicator variable set to 1 if the fund is in the top-tercile of CAPM alpha, Carhart-4 alpha, or Berk and van Binsbergen (2015) manager skill and 0 otherwise. *COVID* is an indicator variable set to 1 if it is Apr 2020 (cols 1, 4, and 7), May 2020 (cols 2, 5, 8), or June 2020 (cols 3, 6, 9). Control variables are identical to those in Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and quarter, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Skill Measure *{Perf}*	*Perf_CAPM*			*Perf_Car4*			*Perf_BB*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$VRet_{m+1}$ =	Apr	May	Jun	Apr	May	Jun	Apr	May	Jun
Hotspot									
Hotspot×COVID	-0.066	-0.193*	0.077	-0.124	-0.169	-0.055	-0.289	-0.350**	0.057
	(-0.51)	(-1.71)	(1.61)	(-1.03)	(-1.46)	(-0.92)	(-1.21)	(-2.60)	(0.89)
Hotspot×COVID×{Perf}	-0.294*	-0.140	0.125	-0.155	-0.088	0.541***	0.479*	0.563***	0.183
	(-1.81)	(-1.65)	(1.32)	(-0.61)	(-0.42)	(3.74)	(1.89)	(3.04)	(1.14)
HiSCI									
HiSCI×COVID	-0.423***	-0.161*	-0.047	-0.332**	-0.127	-0.013	-0.293*	-0.092	-0.071
	(-3.46)	(-1.77)	(-0.83)	(-2.13)	(-1.39)	(-0.29)	(-2.00)	(-1.04)	(-1.03)
HiSCI×COVID×{Perf}	0.705***	-0.144	0.220**	0.464*	-0.084	0.168	0.317***	-0.153	0.366**
	(3.16)	(-0.63)	(2.20)	(1.91)	(-0.40)	(1.08)	(2.77)	(-1.55)	(2.11)
GEO									
GEO×COVID	0.030	-0.110	0.120	-0.326	-0.165**	0.090	-0.227	-0.036	0.013
	(0.12)	(-1.61)	(1.47)	(-1.42)	(-2.16)	(1.05)	(-0.82)	(-0.33)	(0.10)
GEO×COVID×{Perf}	-0.865***	0.087	-0.348*	0.149	0.285	-0.233	-0.083	0.004	0.066
	(-4.08)	(0.29)	(-2.01)	(0.90)	(1.30)	(-1.44)	(-0.21)	(0.02)	(0.38)
{Perf}	0.002	-0.020	-0.012	-0.042	-0.057	-0.052	-0.159	-0.148	-0.131
	(0.02)	(-0.15)	(-0.09)	(-0.57)	(-0.80)	(-0.73)	(-1.58)	(-1.48)	(-1.31)

Table IA.7 Fund Future Return Regressions, Conditioning on Fund Manager Skill (Monthly data, 2020Q2) (continued)

Skill Measure *{Perf}*	*Perf_CAPM*			*Perf_Car4*			*Perf_BB*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$VRet_{m+1}$ =	Apr	May	Jun	Apr	May	Jun	Apr	May	Jun
COVID×{Perf}	-0.133	0.936***	0.411	-0.406	0.310	0.052	0.299	-0.105	-0.658***
	(-0.24)	(2.86)	(1.22)	(-1.21)	(1.66)	(0.24)	(0.66)	(-0.45)	(-9.12)
Hotspot×{Perf}	0.095**	0.089**	0.084**	0.121**	0.118**	0.102**	0.021	0.018	0.023
	(2.45)	(2.44)	(2.14)	(2.41)	(2.38)	(2.07)	(0.25)	(0.24)	(0.34)
HiSCI×{Perf}	-0.010	0.005	0.000	0.044	0.056	0.050	0.030	0.042	0.027
	(-0.18)	(0.10)	(0.01)	(0.76)	(1.03)	(0.90)	(0.29)	(0.41)	(0.27)
GEO×{Perf}	0.018	-0.003	0.007	-0.002	-0.004	0.008	-0.093	-0.096	-0.099
	(0.32)	(-0.04)	(0.12)	(-0.04)	(-0.11)	(0.19)	(-0.95)	(-0.99)	(-1.03)
Observations	140,904	140,904	140,904	140,904	140,904	140,904	153,291	153,291	153,291
Adjusted R^2	0.864	0.864	0.864	0.864	0.864	0.864	0.860	0.860	0.860
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund Style × Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.8 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q1 (Demeaned HiSCI)

This table is similar to Table 3 except that it uses demeaned *SCI*. We demean the SCI scores to a relative measure by calculating each county's mean SCI to all other counties and then subtracting the county's mean SCI for each county pair. The *HiSCI* score is then recalculate based on this demeaned value. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Control variables are identical to Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change (%)*	(2) *Share Change (%)*	(3) *Share Change (%)*
Hotspot	1.105		
	(1.05)		
Hotspot×COVID	-8.636***	-8.634***	-8.148***
	(-3.77)	(-4.28)	(-3.83)
HiSCI	-1.105		
	(-1.37)		
HiSCI×COVID	-7.513***	-9.126***	-8.073***
	(-2.88)	(-3.36)	(-3.12)
GEO	0.321		
	(0.38)		
GEO×COVID	-6.328*	-6.527*	-6.157*
	(-1.68)	(-1.74)	(-1.66)
COVID	2.700		
	(1.49)		
Observations	4,876,486	4,827,894	4,827,816
Adjusted R^2	0.036	0.105	0.132
Controls	Yes	Yes	Yes
Firm × Quarter FE	No	Yes	Yes
Fund FE	No	Yes	No
Fund × Year FE	No	No	Yes
Fund × Industry FE	No	Yes	Yes

Table IA.9 Fund Future Quarterly Return Regressions, Conditioning on Fund Manager Skill (Demeaned HiSCI)

This table is similar to Table 6 except that it uses demeaned SCI. We demean the SCI scores to a relative measure by calculating each county's mean SCI to all other counties and then subtracting the county's mean SCI for each county pair. The *HiSCI* score is then recalculate based on this demeaned value. The dependent variable is the value-weighted return of the fund less fees in quarter q+1 ($VRet_{q+1}$). *Perf_CAPM/Perf_Car4/Perf_BB* is an indicator variable set to 1 if the fund is in the top-tercile of CAPM alpha, Carhart-4 alpha, or Berk and van Binsbergen (2015) manager skill and 0 otherwise (cols 1-3, respectively). *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Control variables are identical to those in Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and quarter, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Skill Measure *{Perf}*	*Perf_CAPM*	*Perf_Car4*	*Perf_BB*
	(1)	(2)	(3)
Hotspot			
Hotspot×COVID	-0.263	-0.480**	-0.536**
	(-1.31)	(-2.59)	(-2.75)
Hotspot×COVID×{Perf}	0.237	1.053***	1.252***
	(0.78)	(3.48)	(4.68)
HiSCI			
HiSCI×COVID	-0.826***	-0.982***	-0.530***
	(-5.08)	(-6.30)	(-3.14)
HiSCI×COVID×{Perf}	1.097***	1.712***	0.318
	(4.27)	(6.46)	(1.45)
GEO			
GEO×COVID	-0.023	-0.414**	-0.389**
	(-0.11)	(-2.27)	(-2.21)
GEO×COVID×{Perf}	-1.017***	0.166	0.249
	(-3.29)	(0.56)	(1.04)
{Perf}	0.256	0.030	-0.275
	(0.42)	(0.08)	(-0.82)
COVID×{Perf}	0.837	-0.799*	-0.639**
	(1.19)	(-1.95)	(-2.69)
Hotspot×{Perf}	0.251*	0.180	0.037
	(2.02)	(1.32)	(0.13)
HiSCI×{Perf}	-0.007	0.017	0.071
	(-0.03)	(0.07)	(0.31)
GEO×{Perf}	0.014	0.032	-0.429
	(0.07)	(0.17)	(-1.50)
Observations	46,531	46,531	49,714
Adjusted R^2	0.815	0.814	0.813
Controls	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes
Fund Style × Quarter FE	Yes	Yes	Yes

Table IA.10 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q1 (Excluding Funds in the Tri-State Area)

This table is similar to Table 3 except that it excludes funds located in the tristate region (NY, NJ, CT). *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Control variables are identical to Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change (%)*	(2) *Share Change (%)*	(3) *Share Change (%)*
Hotspot	-0.125		
	(-0.13)		
Hotspot×COVID	-9.967***	-9.782***	-11.672***
	(-5.10)	(-6.04)	(-6.33)
HiSCI	-2.450***		
	(-2.72)		
HiSCI×COVID	-7.297***	-8.465***	-8.294***
	(-3.34)	(-3.69)	(-3.88)
GEO	-2.381**		
	(-2.38)		
GEO×COVID	-0.861	-0.353	-1.743
	(-0.19)	(-0.08)	(-0.38)
COVID	2.028		
	(1.18)		
Observations	3,689,597	3,651,618	3,651,560
Adjusted R^2	0.038	0.117	0.148
Controls	Yes	Yes	Yes
Firm × Quarter FE	No	Yes	Yes
Fund FE	No	Yes	No
Fund × Year FE	No	No	Yes
Fund × Industry FE	No	Yes	Yes

Table IA.11 Fund Future Quarterly Return Regressions, Conditioning on Fund Manager Skill (Excluding Funds in the Tri-State Area)

This table is similar to Table 6 except that it excludes funds located in the tri-state area (NY, NJ, CT). The dependent variable is the value-weighted return of the fund less fees in quarter q+1 ($VRet_{q+1}$). *Perf_CAPM/Perf_Car4/Perf_BB* is an indicator variable set to 1 if the fund is in the top-tercile of CAPM alpha, Carhart-4 alpha, or Berk and van Binsbergen (2015) manager skill and 0 otherwise (cols 1-3, respectively). *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Control variables are identical to those in Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and quarter, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Skill Measure *{Perf}*	*Perf_CAPM*	*Perf_Car4*	*Perf_BB*
	(1)	(2)	(3)
Hotspot			
Hotspot×COVID	-1.147***	-1.326***	-1.568***
	(-5.37)	(-6.79)	(-6.90)
Hotspot×COVID×{Perf}	0.180	0.869*	1.971***
	(0.35)	(2.01)	(5.19)
HiSCI			
HiSCI×COVID	-0.753***	-0.602***	-0.673***
	(-3.60)	(-3.00)	(-3.17)
HiSCI×COVID×{Perf}	0.910**	0.780**	0.975***
	(2.83)	(2.41)	(3.68)
GEO			
GEO×COVID	0.013	-0.476*	-0.441*
	(0.05)	(-2.03)	(-1.83)
GEO×COVID×{Perf}	-1.229***	0.270	0.350
	(-2.94)	(0.60)	(1.13)
{Perf}	0.329	0.121	-0.269
	(0.52)	(0.28)	(-0.72)
COVID×{Perf}	0.995	-0.336	-0.715**
	(1.41)	(-0.77)	(-2.84)
Hotspot×{Perf}	-0.009	0.119	-0.452
	(-0.03)	(0.51)	(-1.08)
HiSCI×{Perf}	-0.102	-0.086	-0.018
	(-0.39)	(-0.31)	(-0.09)
GEO×{Perf}	0.171	0.042	-0.070
	(0.75)	(0.17)	(-0.16)
Observations	34,606	34,606	36,836
Adjusted R^2	0.800	0.800	0.799
Controls	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes
Fund Style × Quarter FE	Yes	Yes	Yes

Table IA.12 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q2: Focusing on the Post-COVID Period

This table is similar to Table 3 except that extends the results to the full year of 2020. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. (Column 3 does not include *Hotspot* × 2020Q4 and *HiSCI* × 2020Q4 because this specification includes Fund × Year fixed effects.) Control variables are identical to Table 3. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change %*	(2) *Share Change %*	(3) *Share Change %*
Hotspot	-0.478		
	(-0.48)		
Hotspot×2020Q1	-9.342***	-9.460***	-10.268***
	(-5.16)	(-5.96)	(-5.83)
Hotspot×2020Q2	3.970**	3.315	5.160**
	(2.00)	(1.57)	(2.25)
Hotspot×2020Q3	0.716	0.086	1.558
	(0.31)	(0.03)	(0.78)
Hotspot×2020Q4	0.575	-0.688	
	(0.34)	(-0.40)	
HiSCI	-1.797**		
	(-2.30)		
HiSCI×2020Q1	-10.310***	-11.658***	-11.188***
	(-3.97)	(-4.29)	(-4.02)
HiSCI×2020Q2	2.273	-0.755	-2.431
	(1.26)	(-0.47)	(-0.88)
HiSCI×2020Q3	0.054	-1.455	-2.807
	(0.03)	(-0.88)	(-1.12)
HiSCI×2020Q4	4.113*	1.052	
	(1.68)	(0.44)	
Observations	5,795,062	5,740,604	5,740,491
Adjusted R2	0.038	0.108	0.135
Controls	No	Yes	Yes
Firm × Quarter FE	No	Yes	Yes
Fund FE	No	Yes	No
Fund × Year FE	No	No	Yes
Fund × Industry FE	No	Yes	Yes

Table IA.13 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q1: Additional Firm Characteristic Controls

This table reports the results of the panel regression on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between 2016Q1 and 2020Q1. Columns 1-3 are similar to Table 3, columns 3, 6, and 7, respectively. Note that column 3 uses firm x quarter fixed effects so most firm characteristics are absorbed by these fixed effects. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *Share Change Per Shrout* is the change in share holdings scaled by the total number of shares outstanding (in 10^{-5}s). *Size* is the natural log of market capitalization of the firm. *NumEst* is the analysts coverage providing the estimates of earnings. *IO* is the percent of total institutional ownership. *HOTLOC* is indicator variable equals one if the firm's headquarter is located at hotspot county. MAX is the daily maximum return in previous month. *IVOL* is the standardized idiosyncratic volatility based on the Fama-French 3 factor model. *Unc_Beta* measures firms' exposure to economic uncertainty (Baker, Bloom, and Davis 2016). *PRC* is the level of stock price. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change (%)*	(2) *Share Change (%)*	(3) *Share Change (%)*
Hotspot	1.194		
	(1.14)		
Hotspot×COVID	-9.537***	-9.688***	-8.918***
	(-4.26)	(-4.80)	(-4.32)
HiSCI	-1.261		
	(-1.52)		
HiSCI×COVID	-10.781***	-12.883***	-11.304***
	(-3.79)	(-4.42)	(-3.93)
GEO	0.072		
	(0.08)		
GEO×COVID	-5.464	-5.662	-5.034
	(-1.38)	(-1.41)	(-1.28)
COVID	5.277***		
	(3.00)		
Flow	0.959***	0.981***	0.882***
	(20.16)	(18.50)	(17.08)
HotspotCorp	0.008	-0.457*	-0.978***
	(0.13)	(-1.79)	(-3.24)
LnAge	-1.344**	-1.625	-5.890*
	(-2.56)	(-0.89)	(-1.66)
LnAUM	1.271***	-1.541	-5.721***
	(4.88)	(-1.04)	(-3.14)
Fund_Mgt_Fees	-0.792***	-0.459	0.747
	(-2.78)	(-1.47)	(1.11)
Fund_Expense	-3.045*	2.862	9.397
	(-1.86)	(0.60)	(1.64)
Fund_Turnover	-0.152	-0.032	-2.949
	(-0.43)	(-0.11)	(-1.50)

$VRet_{q-1}$	0.007	-0.120*	-0.133*
	(0.26)	(-1.73)	(-1.83)
Size	0.319**	4.894***	
	(2.13)	(9.90)	
NumEst	-0.036**	-0.043	
	(-2.34)	(-1.09)	
IO	2.302***	1.586***	
	(4.00)	(2.64)	
HOTLOC	0.091	1.601	
	(0.38)	(0.56)	
MAX	-0.169***	-0.142***	
	(-7.20)	(-6.70)	
IVOL	8.335**	-18.365**	
	(2.43)	(-2.38)	
Unc_Beta	-1.974	-0.196	
	(-1.33)	(-0.08)	
PRC	-0.000*	0.000***	
	(-1.92)	(2.75)	
Observations	4,291,099	4,253,723	4,252,457
Adjusted R^2	0.040	0.071	0.113
Firm FE	No	Yes	No
Fund FE	No	Yes	No
Quarter FE	No	Yes	No
Fund × Industry FE	No	Yes	Yes
Fund × Year FE	No	No	Yes
Firm × Quarter FE	No	No	Yes

Table IA.14 Impact of COVID Hotspot and Social Connectedness on Stock Selling of Institutional Investors, 2016Q1 to 2020Q2: Interactions with Firm and Fund Characteristics

This table reports the results of the panel regressions on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between 2016Q1 and 2020Q1. The regression is similar to Table 3 column 7 except that an interaction is included for major firm or fund characteristics. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Panel A shows the interactions with firm characteristics comprising: *Large*, set to 1 if the stock's market capitalization is above the median; *Coverage,* set to 1 if the stock's analyst coverage is above the median; *HighIO,* set to 1 if the stock's total institutional ownership is above the median; *HighBM*, set to 1 if the stock's Book-to-Market ratio is above the median; and *HOTLOC*, set to 1 if the firm's headquarter is in hotspot county. Note that the Firm × Quarter fixed effects absorb the COVID and COVID × {Interaction} values. Panel B shows the results that fund characteristics interact with COVID; it is similar to Column (7) of Table 3 except that we control for double interaction terms in the form of Characteristics × COVID. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Panel A: Interactions with Firm Characteristics

Characteristic *{Interaction}*	(1) *Large*	(2) *Coverage*	(3) *HighIO*	(4) *HighBM*	(5) *HOTLOC*
Hotspot×COVID	-12.539***	-11.372***	-8.639***	-8.093***	-8.916***
	(-5.05)	(-4.83)	(-4.32)	(-3.98)	(-4.34)
Hotspot×COVID×{Interaction}	7.036***	4.947***	-0.528	-0.720	-0.003
	(3.11)	(2.65)	(-0.54)	(-0.59)	(-0.00)
HiSCI×COVID	-9.652***	-9.107***	-10.575***	-10.627***	-11.240***
	(-3.92)	(-3.90)	(-3.56)	(-3.52)	(-3.94)
HiSCI×COVID×{Interaction}	-1.927	-3.400	-1.368	-1.221	-0.594
	(-0.60)	(-1.30)	(-1.37)	(-0.97)	(-0.43)
GEO×COVID	-9.821***	-8.050***	-4.622	-4.451	-5.252
	(-3.84)	(-3.14)	(-1.11)	(-1.03)	(-1.36)
GEO×COVID×{Interaction}	8.493*	5.598	-0.756	-1.649	2.120
	(1.80)	(1.45)	(-0.69)	(-1.35)	(1.51)
Hotspot×{Interaction}	2.339**	1.184*	0.427	-0.380	1.015**
	(2.53)	(1.85)	(1.15)	(-0.74)	(2.36)
HiSCI×{Interaction}	3.744***	1.289*	0.462	-0.970**	-0.166
	(3.89)	(1.93)	(1.28)	(-1.99)	(-0.38)
GEO×{Interaction}	-0.299	0.603	0.130	0.978*	-0.008
	(-0.28)	(0.84)	(0.30)	(1.86)	(-0.02)
Observations	4,252,457	4,252,457	4,252,457	3,494,335	4,252,457
Adjusted R^2	0.113	0.113	0.113	0.113	0.113
Fund Controls	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes
Fund × Industry FE	Yes	Yes	Yes	Yes	Yes
Firm × Quarter FE	Yes	Yes	Yes	Yes	Yes

Panel B: Controlling for Fund Characteristics

Characteristic	(1) *Share Change (%)*
Hotspot×COVID	-3.480**
	(-2.24)
HiSCI×COVID	-7.393***
	(-3.21)
GEO×COVID	-2.222
	(-0.66)
Flow	0.837***
	(16.26)
Flow×COVID	0.595***
	(4.07)
HotspotCorp	-0.974***
	(-3.13)
HotspotCorp×COVID	-0.094
	(-1.49)
LnAge	-10.153***
	(-2.98)
LnAge×COVID	0.571
	(0.25)
LnAUM	-6.786***
	(-3.27)
LnAUM×COVID	-1.170
	(-1.61)
Fund_Mgt_Fees	-0.352
	(-1.26)
Fund_Mgt_Fees×COVID	-4.516***
	(-3.55)
Fund_Expense	6.490
	(1.21)
Fund_Expense×COVID	-2.170
	(-0.68)
Fund_Turnover	-2.435
	(-1.43)
Fund_Turnover×COVID	-1.801
	(-1.42)
$VRet_{q-1}$	-0.124*
	(-1.86)
$VRet_{q-1}$*×COVID*	0.215
	(0.72)
Observations	4,827,816
Adjusted R^2	0.133
Fund × Year FE	Yes
Fund × Industry FE	Yes
Firm × Quarter FE	Yes

Table IA.15 Placebo Test: Impact of COVID-19 and Social Connectedness on Stock Ownership of Institutional Investors, 2016Q1 to 2020Q1, Index Funds Only

This table reports the results of the panel regressions on how the institutional investors' changes in share ownership differ across hotspot, high-SCI, and low-SCI counties between Q1 of 2016 and Q1 of 2020. For this table the sample only includes index funds and excludes any actively managed funds. *Share Change (%)* is the change in the number of shares over the quarter scaled by prior number of shares in percentage form. *COVID* is an indicator variable set to 1 if the time period is 2020Q1 and 0 otherwise. Controls are similar to Table 2. Refer to Appendix A for detailed variable definitions. Standard errors are double clustered by fund and firm, with *t*-statistics reported in parentheses. *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

	(1) *Share Change (%)*	(2) *Share Change (%)*	(3) *Share Change (%)*
Hotspot	2.370**		
	(2.50)		
Hotspot×COVID	3.055	3.974	5.314*
	(0.99)	(1.25)	(1.83)
HiSCI	3.151**		
	(2.54)		
HiSCI×COVID	-2.989	-3.415	-2.019
	(-0.81)	(-0.93)	(-0.61)
GEO	-0.526		
	(-0.57)		
GEO×COVID	2.795	1.985	3.957
	(0.99)	(0.68)	(1.45)
COVID	-6.420**		
	(-2.42)		
Observations	5,249,883	5,238,337	5,231,143
Adjusted R^2	0.080	0.151	0.324
Controls	Yes	Yes	Yes
Firm FE	No	Yes	No
Fund FE	No	Yes	No
Quarter FE	No	Yes	No
Firm x Quarter FE	No	No	Yes
Fund × Year FE	No	No	Yes
Fund × Industry FE	No	Yes	Yes