Electronic Appendix: Table 1 Fund Performance and *RTI* Based on Bounded Measure of Change-in-Holdings

This table shows the regressions of fund monthly *Alpha* on fund *RTI* constructed from the bounded measure of change-in-holdings (indexed *M*). Superscripts *TG* and *ATG* denote the corresponding underlying stock-level tangibility measures. $AVG^{4Q}(RTI)$ denotes the average of the respective *RTI* variable over the past four quarters. *Alpha* is computed as the fund's net return in excess of the return predicted by the four-factor model (MKT, SMB, HML, and MOM) in which the factor loadings are estimated over the 36 months preceding the observation period. Panels A and B show the OLS and the Fama-Macbeth regressions, respectively. The coefficients for *Illiquidity*, *LogTNA*, *LogAge*, *ExpRatio*, *Turnover*, and *Flow* are scaled by 10^3. The control variables are defined as in Table 1 of the paper. *T*-statistics are reported in parentheses. * (**, ***) indicates the significance of the coefficient at the 10% (5%, 1%) level. The construction methodology for RTI_M parallels that in the paper for RTI_K but is based on the following change-in-holdings measure:

$$\Delta Holdings_{imt}^{M} = \frac{NumShares_{imt} - \frac{NumShares_{imt-1} + NumShares_{imt}}{2}}{\frac{NumShares_{imt-1} + NumShares_{imt}}{2}}$$

Here, *i* indexes stocks, *m* indexes funds, and *t* indexes time periods (quarters). This measure is bounded between -1 and 1 and is equal to 1 (-1) in all cases when the fund increases (decreases) its share ownership of the stock from 0 (some positive stake) to some positive stake (0).

Panel A: OLS regressions

	Dependent Variable: Alpha											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$RTI_{M,t-1}^{TG}$	0.141	0.143	0.143									
	(1.47)	(1.55)	(1.38)									
$RTI_{M,t-1}^{ATG}$				0.234**	0.246***	0.246**						
				(2.46)	(2.68)	(2.37)						
$AVG^{4Q}(RTI_{M,t-1}^{TG})$							0.464**	0.539***	0.539**			
							(2.21)	(2.60)	(2.33)			
$AVG^{4Q}(RTI_{M,t-1}^{ATG})$										0.480**	0.502**	0.502**
										(2.13)	(2.27)	(2.09)
$Size_{t-1}$	-70.65***	-67.14***	-67.14	-71.07***	-67.54***	-67.54	-87.08***	-86.71***	-86.71	-87.77***	-87.20***	-87.20
	(-5.19)	(-4.91)	(-1.44)	(-5.22)	(-4.94)	(-1.45)	(-4.91)	(-4.82)	(-1.63)	(-4.96)	(-4.86)	(-1.64)
BM_{t-1}	159.2**	116.7*	116.7	158.5**	115.9*	115.9	107.0	63.32	63.32	106.3	63.13	63.13
	(2.39)	(1.79)	(0.48)	(2.38)	(1.77)	(0.48)	(1.13)	(0.69)	(0.20)	(1.12)	(0.69)	(0.20)
$Illiquidity_{t-1}$	13.15***	13.00***	13.00***	12.99***	12.82***	12.82***	12.55***	11.81***	11.81**	12.46***	11.83***	11.83**
	(6.34)	(6.27)	(2.83)	(6.28)	(6.20)	(2.79)	(4.99)	(4.73)	(2.40)	(4.98)	(4.76)	(2.44)
$LogTNA_{t-1}$	-10.28***	-7.998***	-7.998	-10.05***	-7.744***	-7.744	-13.67***	-10.71***	-10.71	-13.56***	-10.69***	-10.69
	(-3.47)	(-2.74)	(-1.11)	(-3.40)	(-2.66)	(-1.07)	(-3.68)	(-2.91)	(-1.13)	(-3.64)	(-2.90)	(-1.13)
$LogAge_{t-1}$	1.798	-4.774	-4.774	1.585	-5.007	-5.007	18.76**	13.45	13.45	18.70**	13.48*	13.48
	(0.29)	(-0.78)	(-0.47)	(0.25)	(-0.82)	(-0.49)	(2.22)	(1.64)	(1.22)	(2.21)	(1.65)	(1.22)
$ExpRatio_{t-1}$	-80.14***	-71.22***	-71.22***	-80.55***	-71.65***	-71.65***	-85.37***	-75.33***	-75.33***	-85.29***	-74.98***	-74.98***
	(-7.64)	(-6.80)	(-3.40)	(-7.67)	(-6.84)	(-3.43)	(-5.28)	(-4.63)	(-3.24)	(-5.26)	(-4.60)	(-3.24)
$Turnover_{t-1}$	-0.736***	-0.818***	-0.818*	-0.736***	-0.818***	-0.818*	-1.008***	-0.936***	-0.936	-1.012***	-0.943***	-0.943
	(-3.43)	(-3.90)	(-1.96)	(-3.43)	(-3.90)	(-1.96)	(-3.75)	(-3.58)	(-1.63)	(-3.77)	(-3.61)	(-1.64)
$Flow_{t-1}$	0.0062	0.0063	0.0063	0.0062	0.0063	0.0063	0.0196	-0.0465	-0.0465	0.0157	-0.0507	-0.0507
	(1.08)	(1.20)	(1.14)	(1.09)	(1.21)	(1.15)	(0.17)	(-0.41)	(-0.55)	(0.14)	(-0.45)	(-0.60)
Style FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
StyleQuarter FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Clustering	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter
Adjusted R^2	0.02	0.05	0.05	0.02	0.05	0.05	0.03	0.06	0.06	0.03	0.06	0.06
Observations	143,080	143,080	143,080	143,080	143,080	143,080	92,425	92,425	92,425	92,425	92,425	92,425

Panel B: Fama-Macbeth regressions

	Dependent Variable: Alpha							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$RTI_{M,t-1}^{TG}$	0.204*	0.217*						
	(1.74)	(1.90)						
$RTI_{M,t-1}^{ATG}$			0.266**	0.294**				
			(2.06)	(2.19)				
$AVG^{4Q}(RTI_{M,t-1}^{TG})$					0.510*	0.453		
					(1.79)	(1.59)		
$AVG^{4Q}(RTI_{M,t-1}^{ATG})$							0.409	0.285
							(1.29)	(0.90)
$Size_{t-1}$	-41.96	-85.99*	-41.82	-85.91*	-41.47	-87.15	-42.17	-88.09
	(-0.81)	(-1.77)	(-0.81)	(-1.77)	(-0.70)	(-1.51)	(-0.71)	(-1.52)
BM_{t-1}	68.90	-69.38	68.44	-73.73	26.35	-149.9	21.97	-159.1
	(0.23)	(-0.30)	(0.23)	(-0.31)	(0.08)	(-0.55)	(0.07)	(-0.58)
$Illiquidity_{t-1}$	1.196	11.13**	1.045	10.98**	0.783	9.359*	0.874	9.507*
	(0.28)	(2.61)	(0.25)	(2.58)	(0.16)	(1.86)	(0.18)	(1.89)
$LogTNA_{t-1}$	-5.181	-4.878	-5.441	-5.063	-11.79	-11.52	-11.76	-11.62
	(-0.81)	(-0.78)	(-0.85)	(-0.81)	(-1.60)	(-1.56)	(-1.59)	(-1.57)
$LogAge_{t-1}$	-1.604	-5.059	-1.105	-4.717	16.84	14.81	17.24	15.30
	(-0.14)	(-0.46)	(-0.10)	(-0.42)	(1.31)	(1.15)	(1.34)	(1.18)
$ExpRatio_{t-1}$	-69.98***	-75.49***	-71.08***	-76.70***	-79.63***	-81.76***	-77.81***	-79.47***
	(-2.84)	(-3.37)	(-2.87)	(-3.41)	(-2.84)	(-3.19)	(-2.78)	(-3.11)
$Turnover_{t-1}$	-0.780*	-0.823**	-0.778*	-0.815**	-1.479***	-1.413***	-1.474***	-1.412***
	(-1.84)	(-2.09)	(-1.83)	(-2.07)	(-2.65)	(-2.79)	(-2.63)	(-2.78)
$Flow_{t-1}$	0.508*	0.466*	0.510*	0.466*	0.798	0.614	0.772	0.587
	(1.95)	(1.82)	(1.95)	(1.81)	(1.65)	(1.37)	(1.59)	(1.30)
Style Dummies	No	Yes	No	Yes	No	Yes	No	Yes
Observations	143,080	143,080	143,080	143,080	92,425	92,425	92,425	92,425

Electronic Appendix: Table 2 Fund Management Characteristics and *RTI* Based on Bounded Measure of Change-in-Holdings

This table shows the regressions of RTI_M (defined as in Table 1 of this Appendix) on the fund management characteristics. Superscripts *TG* and *ATG* denote the corresponding underlying stock-level tangibility measures. The fund management characteristics (control variables) are defined as in Table 10 (Table 1) of the paper. For convenience of presentation, the coefficients for *Tenure*, *FundAffiliation*, *NrManagers*, *ManagerStyles*, *Illiquidity*, *LogTNA*, *LogAge*, *ExpRatio*, *Turnover*, and *Flow* are scaled by 10^3. *T*-statistics are reported in parentheses. * (**, ***) indicates the significance of the coefficient at the 10% (5%, 1%) level.

	Dependent Variable:									
	$RTI_{M,t}^{TG}$					$RTI_{M,t}^{ATG}$				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$Tenure_{t-1}$	0.309**				0.188	0.349***				0.275*
	(2.30)				(1.29)	(2.74)				(1.91)
$FundAffiliation_{t-1}$		-0.360***			-0.163		-0.377***			-0.317
		(-3.14)			(-0.82)		(-3.42)			(-1.46)
$NrManagers_{t-1}$			-0.718***		-0.655***			-0.706***		-0.713***
			(-6.26)		(-4.37)			(-6.14)		(-4.65)
$ManagerStyles_{t-1}$				-1.729***	-0.970**				-1.479***	-0.465
				(-5.89)	(-2.55)				(-4.66)	(-1.13)
$Size_{t-1}$	-1.410	-1.314	-1.452	-1.261	-1.360	-1.711*	-1.603*	-1.739**	-1.572*	-1.693*
	(-1.49)	(-1.40)	(-1.54)	(-1.28)	(-1.37)	(-1.94)	(-1.82)	(-1.98)	(-1.72)	(-1.84)
BM_{t-1}	6.892*	6.838*	6.634*	8.303**	8.203**	9.777**	9.718**	9.521**	11.64**	11.52**
	(1.79)	(1.78)	(1.73)	(2.00)	(1.98)	(2.42)	(2.41)	(2.37)	(2.48)	(2.45)
$Illiquidity_{t-1}$	0.990***	1.013***	1.006***	1.097***	1.072***	0.936***	0.962***	0.955***	1.033***	1.000***
	(5.91)	(6.12)	(6.06)	(6.23)	(6.04)	(5.55)	(5.81)	(5.75)	(5.76)	(5.52)
$LogTNA_{t-1}$	-1.434***	-1.448***	-1.365***	-1.384***	-1.260***	-1.573***	-1.592***	-1.511***	-1.553***	-1.404***
	(-6.20)	(-6.28)	(-5.95)	(-5.73)	(-5.14)	(-7.16)	(-7.22)	(-6.85)	(-6.47)	(-5.87)
$LogAge_{t-1}$	0.1000	0.274	0.240	-0.124	-0.410	0.498	0.707*	0.680	0.267	-0.130
	(0.23)	(0.62)	(0.55)	(-0.25)	(-0.84)	(1.16)	(1.66)	(1.59)	(0.58)	(-0.29)
$ExpRatio_{t-1}$	3.680***	3.630***	3.649***	2.704***	2.714***	3.363***	3.306***	3.326***	3.173***	3.179***
	(4.32)	(4.25)	(4.27)	(3.43)	(3.41)	(4.64)	(4.53)	(4.56)	(3.71)	(3.70)
$Turnover_{t-1}$	-0.0433***	-0.0459***	-0.0477***	-0.0439***	-0.0415***	-0.0587***	-0.0617***	-0.0636***	-0.0660***	-0.0621***
	(-3.22)	(-3.46)	(-3.59)	(-3.14)	(-2.99)	(-4.54)	(-4.86)	(-5.04)	(-4.90)	(-4.59)
$Flow_{t-1}$	0.0007*	0.0007*	0.0006*	0.0007*	0.0007*	-0.0002***	-0.0002***	-0.0002***	-0.0002***	-0.0002***
	(1.70)	(1.68)	(1.69)	(1.68)	(1.69)	(-3.63)	(-3.79)	(-4.06)	(-3.74)	(-3.87)
StyleQuarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter
Adjusted R^2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Observations	44,140	44,140	44,140	36,708	36,708	44,163	44,163	44,163	36,701	36,701

Electronic Appendix: Table 3 Fund Performance and *RTI* Based on Alternative Second-Stage Regression Specification

This table shows the regressions of fund monthly *Alpha* on the alternative measures of fund *RTI*. *Alpha* is computed as the fund's net return in excess of the return predicted by the four-factor model (MKT, SMB, HML, and MOM) in which the factor loadings are estimated over the 36 months preceding the observation period. Subscripts *K* and *M* indicate the measures of change-in-holdings, while superscripts *TG* and *ATG* denote the corresponding underlying stock-level tangibility measures. The coefficients for *Illiquidity*, *LogTNA*, *LogAge*, *ExpRatio*, *Turnover*, and *Flow* are scaled by 10^3. The control variables are defined as in Table 1 of the paper. *T*-statistics are reported in parentheses. * (**, ***) indicates the significance of the coefficient at the 10% (5%, 1%) level. *RTI* is defined in the two-stage procedure as follows:

1. The change-in-holdings ($\Delta Holdings_{imt}$) measures are indexed *K* and *M* and are defined as in Table 3 of the paper and Table 1 of this Appendix.
The change-in-holdings is regressed on several control variables:

$$\Delta Holdings_{imt} = \beta_{0t} + \beta_{1t}\Delta Rec_{it-1} + \beta_{2t}\Delta Freq_{it-1} + \beta_{3t} Return_{it-1} + \beta_{4t}\Delta StyleHoldings_{imt} + \varepsilon_{imt}$$

where ΔRec_{it} is the change in the average analyst recommendation score (these range from 1, most pessimistic, to 5, most optimistic) from quarter *t-1* to *t*; $\Delta Freq_{it}$ is the change in the news frequency (the number of articles on company *i*) from quarter *t-1* to *t*; $Return_{it}$ is company *i*'s stock return from quarter *t-1* to *t*; and $\Delta StyleHoldings_{imt}$ is the average change-in-holdings for stock *i* of all the Morningstar funds in the style of fund *m*.

2. The absolute values of the residuals from the previous regression are now regressed on the signed shocks in tangibility:

$$|\varepsilon_{imt}| = \beta_{0t} + \beta_{1t}\Delta Tangibility_{it-1} + u_{imt}$$

RTI is defined as the R^2 of this regression.

	Dependent Variable: Alpha											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$RTI_{K,t-1}{}^{TG}$	0.196**	0.175*	0.175									
	(2.02)	(1.84)	(1.57)									
$RTI_{K,t-1}{}^{ATG}$				0.160	0.163*	0.163*						
				(1.62)	(1.69)	(1.72)						
$RTI_{M,t-1}{}^{TG}$							0.177*	0.204**	0.204			
							(1.73)	(2.05)	(1.34)			
$RTI_{M,t-1}{}^{ATG}$										0.122	0.167*	0.167
										(1.22)	(1.73)	(1.41)
$Size_{t-1}$	-70.41***	-66.96***	-66.96	-70.54***	-67.03***	-67.03	-70.53***	-66.97***	-66.97	-70.63***	-67.08***	-67.08
	(-5.17)	(-4.89)	(-1.44)	(-5.18)	(-4.90)	(-1.44)	(-5.18)	(-4.89)	(-1.44)	(-5.18)	(-4.90)	(-1.44)
BM_{t-1}	158.0**	115.6*	115.6	159.1**	116.6*	116.6	159.3**	116.3*	116.3	159.2**	116.1*	116.1
	(2.37)	(1.77)	(0.47)	(2.39)	(1.79)	(0.48)	(2.39)	(1.78)	(0.48)	(2.39)	(1.78)	(0.48)
$Illiquidity_{t-1}$	13.12***	12.98***	12.98***	13.13***	12.98***	12.98***	13.12***	12.94***	12.94***	13.17***	12.97***	12.97***
	(6.33)	(6.27)	(2.84)	(6.33)	(6.27)	(2.83)	(6.32)	(6.25)	(2.80)	(6.33)	(6.25)	(2.81)
$LogTNA_{t-1}$	-10.25***	-8.011***	-8.011	-10.30***	-8.024***	-8.024	-10.21***	-7.870***	-7.870	-10.32***	-7.950***	-7.950
	(-3.46)	(-2.74)	(-1.11)	(-3.47)	(-2.74)	(-1.12)	(-3.44)	(-2.69)	(-1.08)	(-3.47)	(-2.72)	(-1.09)
$LogAge_{t-1}$	1.734	-4.794	-4.794	1.734	-4.833	-4.833	1.654	-4.975	-4.975	1.741	-4.926	-4.926
	(0.28)	(-0.78)	(-0.47)	(0.28)	(-0.79)	(-0.48)	(0.26)	(-0.81)	(-0.49)	(0.28)	(-0.80)	(-0.49)
$ExpRatio_{t-1}$	-80.56***	-71.53***	-71.53***	-80.32***	-71.43***	-71.43***	-80.36***	-71.57***	-71.57***	-80.04***	-71.34***	-71.34***
	(-7.69)	(-6.84)	(-3.42)	(-7.65)	(-6.82)	(-3.42)	(-7.67)	(-6.85)	(-3.45)	(-7.62)	(-6.81)	(-3.43)
$Turnover_{t-1}$	-0.730***	-0.814***	-0.814*	-0.732***	-0.815***	-0.815*	-0.732***	-0.815***	-0.815*	-0.735***	-0.816***	-0.816*
	(-3.40)	(-3.88)	(-1.94)	(-3.41)	(-3.88)	(-1.94)	(-3.42)	(-3.89)	(-1.94)	(-3.42)	(-3.89)	(-1.94)
$Flow_{t-1}$	0.0062	0.0063	0.0063	0.0062	0.0062	0.0062	0.0062	0.0063	0.0063	0.0062	0.0063	0.0063
	(1.08)	(1.19)	(1.13)	(1.08)	(1.19)	(1.13)	(1.08)	(1.20)	(1.14)	(1.07)	(1.19)	(1.13)
Style FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No
StyleQuarter FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Clustering	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter	Fund	Fund	Fund Quarter
Adjusted R^2	0.02	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.05
Observations	143,080	143,080	143,080	143,080	143,080	143,080	143,080	143,080	143,080	143,080	143,080	143,080

Electronic Appendix: Table 4 Relationship between *RTI* and Fund Performance, *RTI* is Recomputed Net of Flow

This table complements Table 5 in the paper. It shows the effect of *RTI* on alpha, where *RTI* is computed with the contemporaneous fund flow added to the first-stage regression.

	Dependent Variable: Alpha			
	(1)	(2)	(3)	(4)
$RTI_{K,t-1}^{TG}$	0.207**			
	(2.24)			
$RTI_{K,t-1}^{ATG}$		0.245**		
		(2.33)		
$AVG^{4Q}(RTI_{K,t-1}^{TG})$			0.615***	
			(3.24)	
$AVG^{4Q}(RTI_{K,t-1}^{ATG})$				0.749***
				(3.78)
$Size_{t-1}$	-64.18	-64.23	-77.95	-77.73
	(-1.38)	(-1.38)	(-1.43)	(-1.43)
BM_{t-1}	141.7	142.9	116.9	118.1
	(0.58)	(0.58)	(0.38)	(0.39)
$Illiquidity_{t-1}$	13.01***	12.95***	12.07**	11.90**
	(2.88)	(2.86)	(2.49)	(2.46)
$LogTNA_{t-1}$	-9.198	-9.123	-11.19	-10.98
	(-1.29)	(-1.28)	(-1.27)	(-1.24)
$LogAge_{t-1}$	-5.397	-5.572	8.265	7.869
	(-0.54)	(-0.56)	(0.80)	(0.77)
$ExpRatio_{t-1}$	-73.39***	-73.68***	-79.20***	-80.24***
	(-3.34)	(-3.37)	(-3.22)	(-3.28)
$Turnover_{t-1}$	-0.881**	-0.879**	-1.210**	-1.200**
	(-2.10)	(-2.10)	(-2.31)	(-2.29)
$Flow_{t-1}$	0.0063	0.0063	0.0003	0.0004
	(1.13)	(1.13)	(0.06)	(0.08)
StyleQuarter FE	Yes	Yes	Yes	Yes
Clustering	Fund Quarter	Fund Quarter	Fund Quarter	Fund Quarter
Adjusted R^2	0.05	0.05	0.05	0.05
Observations	145,919	145,919	102,222	102,222

Electronic Appendix: Table 5 Average Values of Different Measures of Skill in Below- and Above- Median *RTI* Samples

This table shows the average values of different measures of skill in the subsamples split by the median *RTI*.

	Partition by RTI_K^{TG}		Partition by RTI_K^{ATG}	
Variable	Below median	Above median	Below median	Above median
RTI_K^{TG}	0.003	0.056	0.011	0.048
RTI_K^{ATG}	0.011	0.049	0.003	0.055
ActiveShare	0.690	0.781	0.691	0.780
TwelveB1Fee	0.27%	0.28%	0.27%	0.28%
ReturnGap	-0.25%	-0.25%	-0.23%	-0.26%
MarketTiming	-0.02%	-0.03%	-0.02%	-0.02%
StockPicking	0.37%	0.52%	0.37%	0.52%