

# **Internet Appendix**

## **Investor Heterogeneity and Liquidity**

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**Table IA1: Investor Heterogeneity and Return Volatility**

This table presents the results of the following quarterly Fama-MacBeth regressions, as well as their corresponding Newey-West adjusted t-statistics,

$$RETVOL_{i,q} = \alpha_0 + \beta_1 STDCR_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

where  $RETVOL_{i,q}$  refers to the return volatility of stock  $i$  in quarter  $q$ , computed as the standard deviation of daily stock returns in that quarter.  $STDCR_{i,q-1}$  refers to the investor heterogeneity in investment horizon, and the vector  $M$  stacks all other control variables, including the Log(Size), Log(BM), RETQ1, RETQ2-4, Num\_Fund, IO, LOGILLIQ, 1/TURN, LOGCVILLIQ and LOGCVTURN. AR(1) refers to the lagged dependent variable. Models 1 to 4 report the regression results over the entire sample period from 1982 to 2016, and models 5 to 8 report similar statistics in the sub-period from 2000 to 2016. Appendix A provides detailed definitions for each variable. Numbers with “\*”, “\*\*” and “\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

	Stock Return Volatility Regressed on Lagged Investor Heterogeneity							
	1982 – 2016				2000 – 2016			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
STDCR	-0.034** (-2.46)	-0.012 (-0.89)	-0.042*** (-3.13)	-0.024* (-1.85)	-0.051** (-2.34)	-0.039* (-1.91)	-0.057** (-2.59)	-0.047** (-2.31)
Log (Size)	-0.069*** (-10.28)	-0.040*** (-5.59)	-0.092*** (-15.30)	-0.087*** (-20.54)	-0.078*** (-7.51)	-0.042*** (-4.05)	-0.089*** (-8.26)	-0.086*** (-10.88)
Log (BM)	-0.025* (-1.82)	-0.027** (-2.02)	-0.025* (-1.87)	-0.028** (-2.11)	0.022 (1.08)	0.018 (0.93)	0.018 (0.91)	0.015 (0.76)
RETQ1	-0.415*** (-6.09)	-0.421*** (-6.28)	-0.417*** (-6.25)	-0.414*** (-6.24)	-0.275** (-2.25)	-0.286** (-2.38)	-0.292** (-2.42)	-0.287** (-2.40)
RETQ2-4	-0.012 (-0.44)	-0.009 (-0.32)	-0.011 (-0.41)	-0.010 (-0.37)	0.011 (0.24)	0.014 (0.31)	0.016 (0.37)	0.015 (0.34)
Num_Fund	0.252*** (5.39)		0.188*** (4.26)		0.108*** (3.98)		0.119*** (3.63)	
IO		0.178*** (8.65)		0.151*** (7.46)		0.211*** (7.30)		0.184*** (6.41)
LOGILLIQ	0.003 (0.52)	0.022*** (3.70)			-0.008 (-1.19)	0.021*** (2.96)		
1/TURN			0.002*** (3.30)	0.003*** (4.74)			0.003*** (3.51)	0.004*** (5.47)
LOGCVILLIQ	-0.041*** (-3.12)	-0.054*** (-4.44)			-0.082*** (-4.36)	-0.089*** (-4.86)		
LOGCVTURN			-0.169*** (-14.90)	-0.161*** (-15.92)			-0.211*** (-16.82)	-0.191*** (-14.71)
AR (1)	0.634*** (51.54)	0.631*** (50.10)	0.642*** (50.91)	0.641*** (50.13)	0.605*** (39.81)	0.599*** (39.57)	0.618*** (42.98)	0.614*** (43.47)
Intercept	1.188*** (21.82)	1.018*** (18.75)	1.284*** (25.77)	1.189*** (25.30)	1.329*** (16.81)	1.134*** (14.46)	1.336*** (14.99)	1.235*** (14.84)
Adj-Rsq	0.509	0.510	0.512	0.513	0.476	0.478	0.482	0.483
# of Quarters	140	140	140	140	68	68	68	68
Obs	228,224	228,224	228,272	228,272	100,612	100,612	100,613	100,613

**Table IA2: Difference-In-Differences Estimates Around 2003 Tax Cut**

Panel A presents the difference-in-differences estimates in the following quarterly panel regressions with stock and quarter fixed effects and their corresponding t-statistics with standard errors clustered at both the stock and quarter level,

$$Y_{i,q} = \alpha_0 + \beta_1 \text{Treat}_{i,q} \times \text{Post}_{i,q} + cM_{i,q-1} + \alpha_i + \gamma_q + e_{i,q},$$

where the dependent variable  $Y_{i,q}$  refers to investor heterogeneity in investment horizon ( $STDCR_{i,q}$ ), stock illiquidity ( $ILLIQ_{i,q}$ ), and liquidity volatility ( $CVILLIQ_{i,q}$ ) of stock  $i$  in quarter  $q$ ,  $\text{Treat}_{i,q}$  is a dummy variable that takes the value of one if stock  $i$  consistently pays dividends in the three years prior to the 2003 Tax Cut (treatment group) and zero for the control group,  $\text{Post}_{i,q}$  is a dummy variable that takes the value one within three years after the tax cut (2004 – 2006) and zero for three years before the tax cut (2000 – 2002), and the vector  $M$  stacks all other control variables, including the Log(Size), Log(BM), Log(RetVol), RETQ1, RETQ2-4, IO, ROA, Leverage and IVOL.  $\alpha_i$  and  $\gamma_q$  refer to the stock and quarter fixed effects, respectively. Panels B and C report similar statistics in subsamples with high and low  $\Delta STDCR$ , respectively.  $\Delta STDCR$  refers to the change in average quarterly  $STDCR$  from three years before to three years after the tax cut, and high (low)  $\Delta STDCR$  subsample consists of stocks with above (below) median  $\Delta STDCR$ . Appendix A provides detailed definitions for each variable. Numbers with “\*”, “\*\*” and “\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

Panel A: Difference-In-Differences Estimates Around 2003 Tax Cut					
	STDCR	LOGILLIQ	1/TURN	LOGCVILLIQ	LOGCVTURN
	Model 1	Model 2	Model 3	Model 4	Model 5
Treat × Post	0.010*	-0.080***	-2.588***	0.004	-0.051**
	(1.86)	(-3.12)	(-7.26)	(0.34)	(-2.67)
Log (Size)	-0.001	-1.221***	-1.317***	-0.132***	-0.097***
	(-0.19)	(-47.88)	(-5.83)	(-13.45)	(-7.93)
Log (BM)	0.029***	0.211***	1.817***	-0.002	0.034*
	(6.53)	(5.05)	(3.29)	(-0.18)	(1.85)
Log (RetVol)	0.001	0.014	-1.243*	-0.064***	-0.081***
	(0.09)	(0.49)	(-1.90)	(-3.89)	(-4.47)
RETQ1	-0.004	0.022	1.096	0.021	-0.044*
	(-0.49)	(0.34)	(1.47)	(0.76)	(-1.87)
RETQ2-4	-0.008***	-0.079**	-0.751**	-0.007	0.003
	(-3.47)	(-2.43)	(-2.58)	(-0.81)	(0.23)
IO	0.026***	-1.658***	0.751	-0.223***	-0.247***
	(3.03)	(-9.79)	(0.53)	(-5.95)	(-4.75)
ROA	-0.012	-1.790***	-4.452*	-0.285***	-0.189**
	(-0.49)	(-9.95)	(-1.94)	(-5.79)	(-2.27)
Leverage	0.019	-0.411***	-2.340*	-0.042	0.057
	(1.21)	(-5.66)	(-1.82)	(-1.66)	(1.31)
IVOL	0.013***	0.012	0.133	-0.010	-0.019**
	(3.56)	(0.60)	(0.56)	(-1.32)	(-2.25)
Adj-Rsq	0.622	0.966	0.656	0.688	0.649
Obs	8,828	8,828	8,828	8,828	8,828

Table IA2—Continued

Panel B: Difference-In-Differences Estimates Around 2003 Tax Cut (High ΔSTDCR)					
	STDCR	LOGILLIQ	1/TURN	LOGCVILLIQ	LOGCVTURN
	Model 1	Model 2	Model 3	Model 4	Model 5
Treat × Post	0.060*** (5.83)	-0.298** (-2.74)	-3.245*** (-3.00)	-0.073** (-2.40)	-0.117*** (-3.35)
Log (Size)	-0.003 (-0.50)	-1.248*** (-17.32)	-1.813 (-1.46)	-0.124*** (-5.97)	-0.091*** (-3.26)
Log (BM)	0.031** (2.37)	0.215** (2.64)	1.317 (1.41)	0.001 (0.06)	0.048 (1.45)
Log (RetVol)	0.009 (0.91)	0.078 (1.16)	-1.290 (-1.68)	-0.034 (-1.68)	-0.040* (-1.87)
RETQ1	0.001 (0.08)	0.027 (0.29)	1.695 (1.33)	0.008 (0.24)	-0.059** (-2.37)
RETQ2-4	-0.008 (-1.44)	-0.084 (-1.31)	-0.838 (-1.55)	-0.009 (-0.56)	-0.009 (-0.47)
IO	0.010 (0.34)	-1.809*** (-5.57)	-1.039 (-0.40)	-0.173* (-2.02)	-0.187* (-1.88)
ROA	0.096 (1.26)	-1.616*** (-3.54)	-3.053 (-0.42)	-0.443*** (-3.47)	0.032 (0.16)
Leverage	0.054 (1.13)	-0.097 (-0.27)	-0.367 (-0.15)	-0.003 (-0.03)	0.212 (1.69)
IVOL	0.008 (0.80)	-0.004 (-0.06)	0.273 (0.46)	-0.015 (-1.07)	-0.016 (-0.87)
Adj-Rsq	0.694	0.966	0.624	0.702	0.635
Obs	4,208	4,208	4,208	4,208	4,208
Panel C: Difference-In-Differences Estimates Around 2003 Tax Cut (Low ΔSTDCR)					
	STDCR	LOGILLIQ	1/TURN	LOGCVILLIQ	LOGCVTURN
	Model 1	Model 2	Model 3	Model 4	Model 5
Treat × Post	-0.058*** (-5.36)	0.109 (1.04)	-1.569* (-2.02)	0.052 (1.53)	-0.007 (-0.17)
Log (Size)	-0.002 (-0.30)	-1.146*** (-13.97)	-1.025* (-1.72)	-0.145*** (-6.92)	-0.111*** (-4.12)
Log (BM)	0.024*** (3.06)	0.220*** (3.11)	1.362** (2.12)	0.002 (0.08)	0.047 (1.52)
Log (RetVol)	-0.003 (-0.41)	-0.008 (-0.18)	-1.770*** (-3.93)	-0.061** (-2.46)	-0.087*** (-2.89)
RETQ1	-0.004 (-0.39)	-0.019 (-0.26)	0.725 (1.22)	0.022 (0.77)	-0.047 (-1.37)
RETQ2-4	-0.003 (-0.48)	-0.062 (-1.39)	-0.172 (-0.59)	-0.015 (-1.28)	0.020 (1.04)
IO	0.048 (1.63)	-1.744*** (-5.35)	1.416 (0.50)	-0.315*** (-3.35)	-0.302** (-2.50)
ROA	-0.011 (-0.22)	-1.774*** (-3.64)	-10.469** (-2.23)	-0.106 (-0.82)	-0.180 (-1.16)
Leverage	-0.003 (-0.09)	-0.169 (-0.56)	-0.794 (-0.28)	-0.108 (-1.41)	0.024 (0.19)
IVOL	0.010 (1.32)	0.041 (1.23)	0.088 (0.22)	-0.004 (-0.31)	-0.030* (-1.78)
Adj-Rsq	0.563	0.968	0.663	0.681	0.647
Obs	4,395	4,395	4,395	4,395	4,395

### Table IA3: Stock Performance Around Extreme Fund Flows

At the end of quarter  $q$ , stocks are first sorted into  $5 \times 10$  portfolios according to their lagged return between quarter  $q - 8$  and  $q - 5$  (quintiles) and price pressure between quarter  $q - 4$  and  $q - 1$  (deciles). Within each past return-price pressure group, stocks are further sorted into quintiles according to their lagged investor heterogeneity in investment horizon in quarter  $q$ . The Low (High) price pressure portfolio is comprised of the bottom (top) decile of stocks based on the quarterly average price pressure between quarter  $q - 4$  and  $q - 1$ , indicating stocks experiencing outflow-induced sales (inflow-induced purchases). The Low (High) investor heterogeneity portfolio is comprised of the bottom (top) quintile of stocks based on the investor heterogeneity in quarter  $q$  and is labeled as “Low\_IH” (“High\_IH”). This table reports, for each past return-investor heterogeneity group and all firms, the value-weighted average monthly return in the holding period (quarter  $q + 1$  to  $q + 4$ ) for the investment strategy of going long (short) the Low (High) price pressure stocks, as well as the investment strategy of going long (short) the High (Low) investor heterogeneity stocks (“HML\_IH”). Stock returns are further adjusted by a five-factor model comprising the three Fama-French factors (market, size and book-to-market), the Carhart momentum factor, and the Pástor-Stambaugh liquidity factor. The price pressure is proxied by *Pressure\_1* in Panel A and *Pressure\_2* in Panel B, respectively. The profits are reported for the full sample from 1982 to 2016. Appendix A provides the detailed definition of each variable. Newey-West adjusted t-statistics are shown in parentheses. Numbers with “\*”, “\*\*” and “\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

Table IA3—Continued

Panel A: Returns (in %) Sorted by Extreme Flow-induced Mutual Fund Transactions (Pressure 1), Past Performance, and Investor Heterogeneity												
Rank of STDCR	Return						Five-Factor adjusted Return					
	Rank of Past Performance					Full Sample	Rank of Past Performance					Full Sample
	Low	2	3	4	High		Low	2	3	4	High	
Low_IH	0.527*	0.673***	1.065***	0.845***	-0.404	0.627***	0.470*	0.760***	0.881***	0.759***	-0.334	0.502***
	(1.88)	(2.92)	(4.13)	(3.29)	(-1.27)	(3.80)	(1.92)	(3.53)	(3.24)	(2.85)	(-1.07)	(3.35)
2	0.476**	0.080	0.115	0.189	0.285	0.403**	0.613***	0.108	0.089	0.325	0.288	0.355**
	(2.25)	(0.40)	(0.68)	(0.85)	(1.00)	(2.38)	(2.94)	(0.52)	(0.49)	(1.39)	(1.07)	(2.37)
3	0.302	0.465**	0.272	0.269	1.163***	0.602***	0.388	0.367	0.276	0.263	1.074***	0.533***
	(1.18)	(2.33)	(1.29)	(1.37)	(4.26)	(3.02)	(1.40)	(1.63)	(1.28)	(1.22)	(3.99)	(2.94)
4	0.629***	0.345*	0.133	0.219	0.287	0.522***	0.591**	0.334	0.087	0.243	0.308	0.388**
	(2.82)	(1.74)	(0.75)	(0.96)	(1.10)	(2.81)	(2.39)	(1.37)	(0.44)	(1.10)	(1.21)	(2.43)
High_IH	-0.227	0.014	-0.113	-0.049	0.142	0.073	-0.229	-0.016	-0.150	-0.145	0.322	0.081
	(-0.77)	(0.06)	(-0.55)	(-0.21)	(0.52)	(0.45)	(-0.77)	(-0.07)	(-0.54)	(-0.61)	(1.18)	(0.46)
HML_IH	-0.754*	-0.659**	-1.179***	-0.893**	0.546	-0.554***	-0.700*	-0.777**	-1.031***	-0.905**	0.656*	-0.421**
	(-1.87)	(-2.08)	(-3.91)	(-2.37)	(1.41)	(-2.97)	(-1.78)	(-2.44)	(-3.17)	(-2.29)	(1.70)	(-2.17)

  

Panel B: Returns (in %) Sorted by Flow-induced Mutual Fund Transactions (Pressure 2), Past Performance, and Investor Heterogeneity												
Rank of STDCR	Return						Five-Factor adjusted Return					
	Rank of Past Performance					Full Sample	Rank of Past Performance					Full Sample
	Low	2	3	4	High		Low	2	3	4	High	
Low_IH	1.221***	0.958***	1.000***	0.993***	1.086***	1.091***	1.110***	0.912***	0.935***	1.011***	1.070***	0.965***
	(3.91)	(4.80)	(3.49)	(3.52)	(3.32)	(5.73)	(4.09)	(4.41)	(3.16)	(3.25)	(3.35)	(5.53)
2	0.840***	0.835***	0.783***	0.587***	1.391***	1.073***	1.033***	0.865***	0.773***	0.746***	1.395***	1.054***
	(3.56)	(3.40)	(3.61)	(2.62)	(5.06)	(4.76)	(4.36)	(3.53)	(3.42)	(3.24)	(5.18)	(5.78)
3	0.939***	0.606***	0.407**	0.485**	1.266***	0.898***	0.986***	0.645***	0.402*	0.428*	1.260***	0.842***
	(3.99)	(2.68)	(2.06)	(2.13)	(3.90)	(4.00)	(3.88)	(2.62)	(1.85)	(1.84)	(4.09)	(3.93)
4	1.221***	0.425**	0.558***	0.666***	0.970***	0.925***	1.231***	0.523**	0.531**	0.679***	0.965***	0.842***
	(4.62)	(2.06)	(2.75)	(2.72)	(2.63)	(4.65)	(4.47)	(2.21)	(2.58)	(2.79)	(2.94)	(4.77)
High_IH	0.562**	0.154	0.411*	0.302	1.034***	0.348*	0.820***	0.229	0.480**	0.418*	1.120***	0.480***
	(2.06)	(0.75)	(1.75)	(1.19)	(3.10)	(1.85)	(2.80)	(1.07)	(2.05)	(1.75)	(3.50)	(2.62)
HML_IH	-0.659*	-0.804***	-0.589	-0.691*	-0.052	-0.743***	-0.290	-0.683**	-0.455	-0.593	0.050	-0.485**
	(-1.78)	(-2.91)	(-1.61)	(-1.94)	(-0.11)	(-3.34)	(-0.77)	(-2.45)	(-1.24)	(-1.50)	(0.12)	(-2.12)

**Table IA4: Investor Heterogeneity and Ownership Concentration**

This table presents the results of the following quarterly Fama-MacBeth regressions, as well as their corresponding Newey-West adjusted t-statistics,

$$ILLIQ_{i,q} = \alpha_0 + \beta_1 STDCR_{i,q-1} + \beta_2 STDCR_{i,q-1} \times HHI_{i,q-1} + \beta_3 HHI_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

$$CVILLIQ_{i,q} = \alpha_0 + \beta_1 STDCR_{i,q-1} + \beta_2 STDCR_{i,q-1} \times HHI_{i,q-1} + \beta_3 HHI_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

where  $ILLIQ_{i,q}$  refers to the two stock illiquidity proxies  $LOGILLIQ_{i,q}$  and  $1/TURN_{i,q}$  of stock  $i$  in quarter  $q$ ,  $CVILLIQ_{i,q}$  refers to the two stock liquidity volatility proxies  $LOGCVILLIQ_{i,q}$  and  $LOGCVTURN_{i,q}$ ,  $STDCR_{i,q-1}$  refers to the investor heterogeneity in investment horizon,  $HHI_{i,q-1}$  refers to the concentration of institutional ownership, and the vector  $M$  stacks all other control variables, including the Log(Size), Log(BM), Log(RetVol), RETQ1, RETQ2-4 and IO. AR(1) refers to the lagged dependent variable. Panel A reports the regression results over the entire sample period from 1982 to 2016, and Panel B reports similar statistics in the sub-period from 2000 to 2016. Appendix A provides detailed definitions for each variable. Numbers with “\*”, “\*\*\*” and “\*\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

Panel A: Stock Liquidity and Liquidity Volatility Regressed on Lagged Investor Heterogeneity (1982 – 2016)								
	LOGILLIQ		1/TURN		LOGCVILLIQ		LOGCVTURN	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
STDCR	-0.027*	-0.124***	-0.906*	-1.487***	-0.026**	-0.087***	-0.061***	-0.153***
	(-1.67)	(-3.59)	(-1.94)	(-3.13)	(-2.31)	(-4.21)	(-4.17)	(-6.56)
STDCR × HHI		0.319***		1.502		0.202***		0.307***
		(4.17)		(0.82)		(3.95)		(7.27)
Log (Size)	-0.226***	-0.226***	0.226***	0.242***	-0.056***	-0.055***	-0.102***	-0.100***
	(-30.40)	(-20.23)	(4.73)	(5.15)	(-23.65)	(-24.77)	(-45.45)	(-45.97)
Log (BM)	0.022***	0.022***	0.503***	0.501***	-0.005***	-0.005**	0.011***	0.011***
	(5.74)	(5.01)	(7.22)	(7.23)	(-2.68)	(-2.61)	(3.03)	(3.05)
Log (RetVol)	-0.059***	-0.058***	0.681***	0.683***	-0.017**	-0.017**	-0.086***	-0.086***
	(-6.51)	(-5.13)	(4.05)	(4.04)	(-2.27)	(-2.28)	(-12.31)	(-12.26)
RETQ1	-0.505***	-0.507***	1.491***	1.462***	-0.034***	-0.036***	0.012	0.009
	(-24.70)	(-20.02)	(4.59)	(4.55)	(-5.19)	(-5.28)	(1.26)	(0.87)
RETQ2-4	-0.044***	-0.047***	-0.170	-0.185	-0.011**	-0.012***	0.000	-0.003
	(-4.50)	(-5.76)	(-1.36)	(-1.49)	(-2.54)	(-2.85)	(0.05)	(-0.51)
IO	-0.325***	-0.329***	-5.232***	-5.234***	-0.085***	-0.086***	-0.109***	-0.110***
	(-21.04)	(-14.22)	(-9.52)	(-9.58)	(-6.25)	(-6.29)	(-6.28)	(-6.28)
HHI	0.544***	0.342***	13.275***	12.560***	0.137***	0.001	0.361***	0.163***
	(12.73)	(3.80)	(10.42)	(5.93)	(3.19)	(0.02)	(8.20)	(3.19)
AR (1)	0.822***	0.820***	0.731***	0.730***	0.510***	0.507***	0.371***	0.370***
	(142.33)	(96.39)	(55.19)	(54.83)	(37.54)	(37.75)	(36.06)	(35.99)
Intercept	0.877***	0.938***	2.556***	2.831***	0.488***	0.525***	0.676***	0.730***
	(23.79)	(16.15)	(5.22)	(6.30)	(20.18)	(17.85)	(24.16)	(22.99)
Adj-Rsq	0.970	0.970	0.701	0.701	0.597	0.599	0.584	0.585
# of Quarters	140	140	140	140	140	140	140	140
Obs	228,196	228,196	228,255	228,255	228,181	228,181	228,255	228,255

Table IA4—Continued

Panel B: Stock Liquidity and Liquidity Volatility Regressed on Lagged Investor Heterogeneity (2000 – 2016)								
	LOGILLIQ		1/TURN		LOGCVILLIQ		LOGCVTURN	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
STDCR	-0.071** (-2.33)	-0.172*** (-2.97)	-1.170*** (-3.62)	-1.992*** (-3.35)	-0.024 (-1.38)	-0.072* (-1.84)	-0.075*** (-2.97)	-0.182*** (-4.37)
STDCR × HHI		0.336*** (2.83)		2.732** (2.46)		0.150 (1.66)		0.357*** (4.70)
Log (Size)	-0.266*** (-16.84)	-0.266*** (-17.07)	0.055** (2.34)	0.078*** (2.70)	-0.046*** (-23.95)	-0.045*** (-15.52)	-0.102*** (-35.70)	-0.100*** (-38.75)
Log (BM)	0.036*** (7.61)	0.036*** (7.70)	0.351*** (5.92)	0.350*** (5.93)	0.001 (0.31)	0.001 (0.31)	-0.002 (-0.47)	-0.002 (-0.53)
Log (RetVol)	-0.095*** (-7.36)	-0.093*** (-7.24)	0.386** (2.00)	0.389* (1.99)	-0.040*** (-8.21)	-0.040*** (-5.57)	-0.085*** (-11.37)	-0.084*** (-11.09)
RETQ1	-0.495*** (-15.39)	-0.499*** (-15.31)	0.506*** (2.78)	0.460** (2.44)	-0.041*** (-4.25)	-0.043*** (-5.05)	0.013 (0.85)	0.007 (0.45)
RETQ2-4	-0.051*** (-4.07)	-0.054*** (-4.36)	-0.295*** (-2.77)	-0.310*** (-2.82)	-0.014** (-2.34)	-0.016** (-2.11)	0.003 (0.40)	-0.001 (-0.18)
IO	-0.418*** (-13.09)	-0.424*** (-13.31)	-3.453*** (-7.79)	-3.473*** (-7.76)	-0.140*** (-19.57)	-0.142*** (-14.60)	-0.174*** (-14.30)	-0.174*** (-13.96)
HHI	0.838*** (8.48)	0.610*** (4.19)	10.182*** (12.29)	8.417*** (7.98)	0.346*** (11.67)	0.236** (2.39)	0.571*** (13.47)	0.339*** (4.17)
AR (1)	0.793*** (67.88)	0.791*** (68.99)	0.719*** (44.33)	0.718*** (44.09)	0.529*** (40.04)	0.525*** (25.06)	0.325*** (37.06)	0.323*** (37.43)
Intercept	1.039*** (12.66)	1.104*** (12.19)	3.024*** (7.00)	3.470*** (6.22)	0.409*** (16.87)	0.440*** (8.49)	0.611*** (12.34)	0.673*** (11.33)
Adj-Rsq	0.976	0.976	0.753	0.753	0.686	0.687	0.614	0.615
# of Quarters	68	68	68	68	68	68	68	68
Obs	100,613	100,613	100,613	100,613	100,611	100,611	100,613	100,613



**Table IA5: Investor Heterogeneity, Stock Liquidity and Liquidity Volatility**

Panel A presents the results of the following quarterly Fama-MacBeth regressions, as well as their corresponding Newey-West adjusted t-statistics,

$$ILLIQ_{i,q} = \alpha_0 + \beta_1 STDTO_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

$$CVILLIQ_{i,q} = \alpha_0 + \beta_1 STDTO_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

where  $ILLIQ_{i,q}$  refers to the two stock illiquidity proxies  $LOGILLIQ_{i,q}$  and  $1/TURN_{i,q}$  of stock  $i$  in quarter  $q$ ,  $CVILLIQ_{i,q}$  refers to the two stock liquidity volatility proxies  $LOGCVILLIQ_{i,q}$  and  $LOGCVTURN_{i,q}$ ,  $STDTO_{i,q-1}$  refers to the investor heterogeneity in investment horizon based on the average turnover in the previous four quarters, and the vector  $M$  stacks all other control variables, including the Log(Size), Log(BM), Log(RetVol), RETQ1, RETQ2-4, Num\_Fund and IO. AR(1) refers to the lagged dependent variable. Panel B reports similar statistics where  $STDTO_{i,q-1}$  is constructed using the turnover in the previous quarter (models 1 to 4) or the average turnover in the previous two quarters (models 5 to 8). The sample period is from 1982 to 2016. Appendix A provides detailed definitions for each variable. Numbers with “\*”, “\*\*” and “\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

Panel A: Stock Liquidity and Liquidity Volatility Regressed on Lagged Investor Heterogeneity								
	LOGILLIQ		1/TURN		LOGCVILLIQ		LOGCVTURN	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
STDTO	-0.017*** (-4.79)	-0.011** (-2.44)	-0.410*** (-3.00)	-0.365*** (-2.97)	-0.008** (-2.57)	-0.007* (-1.91)	-0.021*** (-3.98)	-0.019*** (-3.98)
Log (Size)	-0.213*** (-21.08)	-0.213*** (-21.99)	-0.659*** (-9.62)	-0.168*** (-3.56)	-0.066*** (-14.90)	-0.056*** (-32.12)	-0.120*** (-18.17)	-0.105*** (-48.00)
Log (BM)	0.024*** (5.37)	0.024*** (5.35)	0.485*** (6.89)	0.546*** (7.58)	-0.004* (-1.97)	-0.004** (-2.20)	0.014*** (4.14)	0.013*** (3.80)
Log (RetVol)	-0.088*** (-7.11)	-0.062*** (-5.53)	0.482*** (3.00)	0.718*** (4.39)	-0.020** (-2.38)	-0.014* (-1.97)	-0.097*** (-13.01)	-0.086*** (-11.88)
RETQ1	-0.496*** (-20.56)	-0.507*** (-20.78)	2.419*** (6.53)	1.992*** (5.55)	-0.029*** (-4.03)	-0.038*** (-5.45)	0.031*** (2.88)	0.017* (1.78)
RETQ2-4	-0.020** (-2.27)	-0.039*** (-4.75)	0.209 (1.45)	0.015 (0.11)	-0.004 (-1.00)	-0.011** (-2.60)	0.010* (1.80)	0.002 (0.40)
Num_Fund	0.115** (2.03)		0.847* (1.85)		-0.050 (-0.92)		-0.060 (-0.83)	
IO		-0.354*** (-14.57)		-6.192*** (-10.37)		-0.101*** (-5.99)		-0.159*** (-7.05)
AR (1)	0.870*** (144.78)	0.843*** (128.54)	0.795*** (63.41)	0.771*** (60.90)	0.527*** (34.06)	0.523*** (33.79)	0.399*** (46.76)	0.389*** (42.55)
Intercept	0.904*** (18.45)	0.957*** (19.74)	6.771*** (10.77)	6.589*** (11.22)	0.525*** (22.45)	0.503*** (32.68)	0.785*** (25.83)	0.758*** (38.90)
Adj-Rsq	0.969	0.969	0.689	0.693	0.593	0.594	0.575	0.577
# of Quarters	140	140	140	140	140	140	140	140
Obs	228,196	228,196	228,255	228,255	228,181	228,181	228,255	228,255

Table IA5—Continued

Panel B: Stock Liquidity and Liquidity Volatility Regressed on Lagged Investor Heterogeneity								
	1-Quarter				2-Quarter			
	LOGILLIQ	1/TURN	LOGCVILLIQ	LOGCVTURN	LOGILLIQ	1/TURN	LOGCVILLIQ	LOGCVTURN
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
STDTO	-0.006*	-0.300***	-0.005**	-0.017***	-0.009**	-0.337***	-0.007**	-0.019***
	(-1.70)	(-2.91)	(-2.04)	(-4.65)	(-2.15)	(-2.96)	(-2.07)	(-4.46)
Log (Size)	-0.214***	-0.174***	-0.055***	-0.105***	-0.213***	-0.169***	-0.055***	-0.105***
	(-22.61)	(-3.68)	(-29.92)	(-46.04)	(-22.37)	(-3.80)	(-31.59)	(-47.50)
Log (BM)	0.024***	0.537***	-0.004**	0.012***	0.024***	0.545***	-0.004**	0.013***
	(5.30)	(7.53)	(-2.27)	(3.63)	(5.30)	(7.55)	(-2.22)	(3.75)
Log (RetVol)	-0.062***	0.712***	-0.014**	-0.086***	-0.061***	0.719***	-0.014*	-0.086***
	(-5.59)	(4.38)	(-1.99)	(-12.03)	(-5.53)	(4.41)	(-1.97)	(-11.98)
RETQ1	-0.505***	1.982***	-0.038***	0.016*	-0.507***	1.991***	-0.038***	0.016
	(-20.71)	(5.51)	(-5.47)	(1.66)	(-20.70)	(5.51)	(-5.53)	(1.60)
RETQ2-4	-0.039***	0.014	-0.011**	0.002	-0.039***	0.022	-0.011**	0.002
	(-4.61)	(0.10)	(-2.53)	(0.31)	(-4.67)	(0.16)	(-2.60)	(0.31)
IO	-0.353***	-6.153***	-0.101***	-0.158***	-0.354***	-6.185***	-0.101***	-0.159***
	(-14.35)	(-10.49)	(-5.91)	(-6.96)	(-14.53)	(-10.46)	(-5.95)	(-7.01)
AR (1)	0.843***	0.771***	0.522***	0.388***	0.843***	0.771***	0.523***	0.389***
	(127.79)	(60.97)	(33.92)	(42.04)	(128.22)	(60.96)	(33.78)	(42.64)
Intercept	0.957***	6.591***	0.500***	0.758***	0.957***	6.588***	0.501***	0.758***
	(19.84)	(11.18)	(32.28)	(38.18)	(19.78)	(11.02)	(32.86)	(38.24)
Adj-Rsq	0.969	0.692	0.592	0.576	0.969	0.693	0.594	0.577
# of Quarters	140	140	140	140	140	140	140	140
Obs	227,990	228,049	227,975	228,049	228,170	228,229	228,155	228,229

**Table IA6: Investor Heterogeneity and Illiquidity Premium: Fama-MacBeth Regressions**

This table presents the results of the following quarterly Fama-MacBeth regressions, as well as their corresponding Newey-West adjusted t-statistics,

$$Perf_{i,q} = \alpha_0 + \beta_1 Dummy(STDCR)_{i,q-1} + \beta_2 Dummy(STDCR)_{i,q-1} \times ILLIQ_{i,q-1} + \beta_3 ILLIQ_{i,q-1} + cM_{i,q-1} + e_{i,q},$$

where  $Perf_{i,q}$  refers to the average monthly return (or DGTW-adjusted return) of stock  $i$  in quarter  $q$ ,  $Dummy(STDCR)_{i,q-1}$  refers to two dummy variables including  $Low\ STDCR_{i,q-1}$  (takes a value of one if the  $STDCR_{i,q-1}$  is in the bottom quintile across all stocks in that quarter and zero otherwise) and  $High\ STDCR_{i,q-1}$  (takes a value of one if the  $STDCR_{i,q-1}$  is in the top quintile across all stocks in that quarter and zero otherwise).  $ILLIQ_{i,q-1}$  refers to the stock Amihud illiquidity. The vector  $M$  stacks all other control variables, including the LOGCVILLIQ, Log(Size), Log(BM), Log(RetVol), RETQ1, RETQ2-4 and IO. Model 1 reports the regression results on stock return, and Model 2 focuses on DGTW-adjusted return. We skip one month between quarter  $q$  and  $q - 1$ . The sample period is from 1982 to 2016. Appendix A provides detailed definitions for each variable. Numbers with “\*”, “\*\*” and “\*\*\*” are significant at the 10%, 5% and 1% level, respectively.

Stock Return (in %) Regressed on Lagged Investor Heterogeneity and Liquidity		
	RETURN	DGTW-adjusted
	Model 1	Model 2
Low STDCR	-0.037 (-0.77)	-0.005 (-0.11)
High STDCR	0.027 (0.47)	0.016 (0.26)
Low STDCR × LOGILLIQ	0.037** (2.43)	0.040*** (2.83)
High STDCR × LOGILLIQ	0.002 (0.19)	-0.001 (-0.06)
LOGILLIQ	0.052* (1.79)	0.040* (1.69)
LOGCVILLIQ	-0.030 (-0.41)	-0.031 (-0.46)
Log (Size)	-0.147*** (-3.36)	-0.129*** (-5.18)
Log (BM)	-0.918*** (-11.41)	-1.003*** (-13.61)
Log (RetVol)	-0.468*** (-4.06)	-0.404*** (-5.41)
RETQ1	-0.305 (-0.98)	-0.619** (-2.20)
RETQ2-4	0.105 (0.58)	-0.183 (-1.47)
IO	0.231* (1.82)	0.029 (0.24)
Intercept	1.937*** (7.16)	0.726*** (3.22)
Adj-Rsq	0.097	0.067
# of Quarters	140	140
Obs	228,011	224,273

