

**Internet Appendix to
“Is Information Risk Priced?
Evidence from Abnormal Idiosyncratic Volatility”**

Table IA.1
Further Summary Statistics

This table presents the summary statistics of further variables used in this study. Panel A reports the further asset pricing test variables that include EHO's PIN (PIN_{EHO}), DY's PIN (PIN_{DY}), DY's PSOS ($PSOS$), abnormal trading volume ($AVol$), abnormal turnover ($ATurn$), abnormal effective spread ($ASpread$), stock turnover ($Turnover$), short interest ratio ($Short$), investment ($CapEx$), gross profitability (GPA), distress score ($Oscore$), accruals ($Accruals$), and earnings quality (AQ). Panel B reports further information environment variables that include pre-earnings-announcement return run-up ($RunUp$), earnings surprise (SUE), and updated earnings surprise (SUE_{FC}). Panel C reports further information environment variables that include number of analysts following ($Analyst$), analyst forecast errors ($FErr$), and analyst dispersion ($FDisp$). Panel D presents the AIV statistics of stock portfolios sorted on Size. All the variables are defined in Appendix. The summary statistics includes the number of observations, mean, median, standard deviation (STD), the percentiles (5% and 95%), and quartiles (25% and 75%) distribution of the variables. The sample period is from July 1972 to December 2015.

Panel A: Asset Pricing Test Variables at the Monthly Frequency								
Variable	Observations	Mean	STD	5%	25%	Median	75%	95%
PIN_{EHO}	264,566	0.208	0.070	0.115	0.159	0.198	0.244	0.338
PIN_{DY}	385,532	0.183	0.085	0.087	0.127	0.162	0.217	0.355
$PSOS$	385,532	0.287	0.161	0.115	0.175	0.234	0.356	0.630
$AVol$	1,447,223	5.153	33.104	-22.477	-2.509	-0.106	3.926	50.239
$ATurn$	1,447,223	0.050	0.484	-0.550	-0.138	-0.012	0.153	0.886
$ASpread$	565,778	0.025	0.529	-0.114	-0.022	0.015	0.069	0.223
$Turnover$	1,447,212	1.145	1.087	0.134	0.417	0.825	1.470	3.355
$Short$	541,277	0.039	0.050	0.000	0.007	0.023	0.050	0.133
$CapEx$	1,287,497	0.152	0.342	-0.190	-0.009	0.077	0.202	0.762
GPA	1,287,497	0.377	0.286	0.039	0.200	0.346	0.514	0.863
$Oscore$	1,287,497	-0.867	2.268	-4.200	-2.204	-1.018	0.195	3.012
$Accruals$	1,261,774	0.002	0.065	-0.100	-0.029	0.000	0.032	0.106
AQ	1,261,774	0.050	0.040	0.010	0.023	0.038	0.063	0.131

Panel B: Information Environment Variables at the Quarterly Frequency								
Variable	Observations	Mean	STD	5%	25%	Median	75%	95%
$RunUp$	506,151	0.004	0.063	-0.095	-0.030	0.000	0.033	0.114
SUE	492,411	-0.002	0.067	-0.083	-0.008	0.002	0.009	0.068
SUE_{FC}	185,411	-0.001	0.012	-0.015	-0.002	0.000	0.002	0.009

Panel C: Information Environment Variables at the Yearly Frequency								
Variable	Observations	Mean	STD	5%	25%	Median	75%	95%
$Analyst$	129,904	1.112	0.831	0.000	0.254	1.135	1.773	2.433
$FDisp$	72,123	0.425	1.013	0.012	0.059	0.125	0.324	1.749
$FErr$	72,123	0.645	1.755	0.005	0.042	0.133	0.434	2.831

Panel D: The AIV Statistics of Portfolios Sorted by Size								
Portfolios	Observations	Mean	STD	5%	25%	Median	75%	95%
AIV for Small Size	309,749	-0.012	0.372	-0.614	-0.234	-0.006	0.212	0.580
AIV for 2	309,532	0.007	0.335	-0.533	-0.198	0.006	0.212	0.551
AIV for 3	309,543	0.012	0.315	-0.488	-0.186	0.009	0.206	0.528
AIV for 4	309,534	0.015	0.299	-0.460	-0.174	0.012	0.200	0.497
AIV for Large Size	309,338	0.033	0.275	-0.400	-0.143	0.026	0.200	0.478

Table IA.2
Informed Return Run-ups prior to Earnings Announcements and *AIV*: A Portfolio Approach

This table reports equally weighted average abnormal idiosyncratic volatility (*AIV*) of stock portfolios sorted on the informed return run-ups prior to earnings announcements. Panels A1, A2, A3, and A4 show *AIV* of single-sorted portfolios formed yearly on contemporaneous $SUESign \times RunUp$, $SUESign \times RunUpSign$, $SUE_{FC}Sign \times RunUp$, or $SUE_{FC}Sign \times RunUpSign$. Panels B1, B2, B3, and B4 show *AIV* of double-sorted portfolios sorted yearly first by prior-year market capitalization (*Size*) and then by contemporaneous $SUESign \times RunUp$, $SUESign \times RunUpSign$, $SUE_{FC}Sign \times RunUp$, or $SUE_{FC}Sign \times RunUpSign$. The difference in *AIV* between the high and the low portfolios are also reported, along with *t*-statistics in parentheses. The *t*-statistics reported in parentheses are based on Newey-West standard errors. The sample periods are 1972-2015 for models with $SUESign$, and 1983-2015 for models with $SUESign_{FC}$

Portfolios	Panel A1: Single-Sorted Portfolios	Panel B1: Double-Sorted Portfolios Sort by <i>Size</i> , then $SUESign \times RunUp$				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low $SUESign \times RunUp$	0.042	0.026	0.033	0.051	0.058	0.064
2	-0.049	-0.091	-0.073	-0.052	-0.039	-0.011
3	-0.049	-0.089	-0.062	-0.055	-0.047	-0.019
4	-0.007	-0.022	-0.004	-0.012	-0.008	0.012
High $SUESign \times RunUp$	0.126	0.149	0.149	0.134	0.112	0.114
High-Low	0.083 (6.58)	0.123 (7.87)	0.116 (7.45)	0.083 (5.28)	0.054 (4.25)	0.050 (4.79)

Portfolios	Panel A2: Single-Sorted Portfolios	Panel B2: Double-Sorted Portfolios Sort by <i>Size</i> , then $SUESign \times RunUpSign$				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low $SUESign \times RunUpSign$	-0.021	-0.056	-0.033	-0.007	-0.005	0.007
2	-0.000	-0.024	-0.015	-0.001	-0.001	0.027
3	0.010	-0.004	0.001	0.007	0.011	0.031
4	0.032	0.019	0.023	0.024	0.024	0.040
High $SUESign \times RunUpSign$	0.033	0.018	0.044	0.031	0.036	0.039
High-Low	0.055 (5.63)	0.074 (6.19)	0.077 (5.05)	0.038 (2.28)	0.041 (3.41)	0.033 (2.64)

Portfolios	Panel A3: Single-Sorted Portfolios	Panel B3: Double-Sorted Portfolios Sort by <i>Size</i> , then $SUESign_{FC} \times RunUp$				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low $SUESign_{FC} \times RunUp$	0.029	0.038	0.036	0.044	0.057	0.063
2	-0.031	-0.054	-0.050	-0.036	-0.029	-0.008
3	-0.035	-0.072	-0.064	-0.039	-0.031	-0.007
4	0.004	-0.026	-0.009	-0.011	0.002	0.024
High $SUESign_{FC} \times RunUp$	0.104	0.078	0.113	0.123	0.125	0.141
High-Low	0.060 (8.37)	0.025 (3.11)	0.077 (6.64)	0.079 (5.85)	0.068 (6.77)	0.079 (6.60)

Table IA.2-continued

Portfolios	Panel A4: Single-Sorted Portfolios	Panel B4: Double-Sorted Portfolios				
	<i>AIV</i>	Sort by <i>Size</i> , then $SUESign_{FC} \times RunUpSign$				
		Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low $SUESign_{FC} \times RunUpSign$	-0.021	-0.056	-0.033	-0.007	-0.005	0.007
2	-0.000	-0.024	-0.015	-0.001	-0.001	0.027
3	0.010	-0.004	0.001	0.007	0.011	0.031
4	0.032	0.019	0.023	0.024	0.024	0.040
High $SUESign_{FC} \times RunUpSign$	0.033	0.018	0.044	0.031	0.036	0.039
High-Low	0.055 (5.63)	0.074 (6.19)	0.077 (5.05)	0.038 (2.28)	0.041 (3.41)	0.033 (2.64)

Table IA.3
The AIV of Portfolios Sorted by NEA

This table reports equally weighted average abnormal idiosyncratic volatility (AIV) of double-sorted portfolios sorted monthly first by non-earnings-announcement idiosyncratic volatility (NEA) and then prior-June market capitalization ($Size$). The difference in AIV between the high and the low portfolios are also reported, along with t -statistics in parentheses. The t -statistics reported in parentheses are based on Newey-West standard errors. The sample period is from July 1972 to December 2015.

	Low IV_{NEA}	2	3	4	High IV_{NEA}
Small $Size$	0.065	0.058	0.045	0.015	-0.054
2	0.051	0.045	0.037	0.017	-0.041
3	0.057	0.041	0.030	0.006	-0.050
4	0.066	0.024	0.009	-0.010	-0.064
Large $Size$	0.059	0.013	-0.002	-0.041	-0.110
Large-Small	-0.006 (-1.54)	-0.045 (-12.53)	-0.047 (-11.02)	-0.056 (-15.59)	-0.057 (-11.77)

Table IA.4
Abnormal Illiquidity and AIV

This table reports equally weighted average abnormal idiosyncratic volatility (AIV) of stock portfolios sorted on the abnormal Amihud's illiquidity ($AAmihud$), or abnormal effective spread ($ASpread$). Panels A1 and A2 show AIV of single-sorted portfolios formed yearly on contemporaneous abnormal Amihud's illiquidity ($AAmihud$). Panels B1 and B2 show AIV of double-sorted portfolios sorted yearly first by prior-June market capitalization ($Size$) and then by contemporaneous abnormal Amihud's illiquidity ($AAmihud$), or abnormal effective spread ($ASpread$). $AAmihud$ and $ASpread$ are constructed in the way similar to the way in which AIV is constructed. The daily Amihud measure and effective spread are computed as the averages of transactional Amihud measure and effective spread, respectively. The difference in AIV between the high and the low portfolios are also reported, along with t -statistics in parentheses. The t -statistics reported in parentheses are based on Newey-West standard errors. The sample periods are 1972-2015 for portfolios with $AAmihud$, and 1983-2013 for portfolios with $ASpread$.

Portfolios	Panel A1: Single-Sorted Portfolios	Panel B1: Double-Sorted Portfolios Sort by $Size$, then $AAmihud$				
	AIV	Small $Size$	2	3	4	Large $Size$
Low $AAmihud$	-0.073	-0.112	-0.093	-0.057	-0.047	-0.046
2	-0.023	-0.059	-0.037	-0.028	-0.019	-0.011
3	0.023	-0.019	0.008	0.013	0.021	0.056
4	0.059	0.036	0.038	0.046	0.061	0.075
High $AAmihud$	0.048	0.052	0.067	0.062	0.071	0.101
High-Low	0.121 (14.65)	0.164 (7.33)	0.159 (15.50)	0.119 (17.17)	0.117 (11.35)	0.147 (15.57)

Portfolios	Panel A2: Single-Sorted Portfolios	Panel B2: Double-Sorted Portfolios Sort by $Size$, then $ASpread$				
	AIV	Small $Size$	2	3	4	Large $Size$
Low $ASpread$	-0.149	-0.189	-0.170	-0.155	-0.128	-0.093
2	-0.079	-0.116	-0.096	-0.074	-0.049	-0.021
3	0.018	-0.030	-0.017	0.010	0.026	0.048
4	0.101	0.116	0.093	0.093	0.104	0.099
High $ASpread$	0.189	0.222	0.206	0.186	0.175	0.169
High-Low	0.338 (32.43)	0.412 (25.56)	0.375 (21.26)	0.341 (21.06)	0.303 (18.81)	0.262 (24.06)

Table IA.5
Informed Trading and *AIV*: A Portfolio Approach

This table reports equally weighted average abnormal idiosyncratic volatility (*AIV*) of stock portfolios sorted on the informed trading. Panels A1, A2, and A3 show *AIV* of single-sorted portfolios formed yearly on contemporaneous abnormal insider trading (*AIT*), abnormal short selling (*ASS*), or abnormal institutional trading (*AIN*). Panels B1, B2, and B3 show *AIV* of double-sorted portfolios sorted yearly first by prior-year market capitalization (*Size*) and then by contemporaneous abnormal insider trading (*AIT*), abnormal short selling (*ASS*), or abnormal institutional trading (*AIN*). The difference in *AIV* between the high and the low portfolios are also reported, along with *t*-statistics in parentheses. The *t*-statistics reported in parentheses are based on Newey-West standard errors. The sample periods are 1996-2015 for portfolios with *AIT*, 2007-2015 for portfolios with *ASS*, and 1999-2015 for portfolios with *AIN*.

Portfolios	Panel A1: Single-Sorted Portfolios	Panel B1: Double-Sorted Portfolios Sort by <i>Size</i> , then <i>AIT</i>				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low <i>AIT</i>	-0.031	-0.040	-0.043	-0.037	-0.024	0.041
2	0.010	-0.018	-0.007	0.000	0.011	0.014
3	0.018	-0.000	-0.001	0.017	0.004	0.019
4	0.012	0.024	-0.010	0.019	0.021	0.048
High <i>AIT</i>	0.017	0.004	0.018	0.037	0.014	0.022
High-Low	0.048 (4.07)	0.044 (1.38)	0.061 (3.13)	0.074 (3.26)	0.038 (0.96)	-0.020 (-0.78)

Portfolios	Panel A2: Single-Sorted Portfolios	Panel B2: Double-Sorted Portfolios Sort by <i>Size</i> , then <i>ASS</i>				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low <i>ASS</i>	-0.033	-0.087	-0.058	-0.039	-0.020	-0.019
2	-0.018	-0.046	-0.042	-0.012	-0.003	-0.002
3	-0.013	-0.052	-0.026	-0.004	0.010	0.024
4	-0.017	-0.040	-0.026	0.002	0.017	0.017
High <i>ASS</i>	0.016	0.003	0.005	0.028	0.027	0.021
High-Low	0.049 (20.88)	0.09 (6.15)	0.063 (5.49)	0.067 (3.98)	0.046 (2.90)	0.041 (2.47)

Portfolios	Panel A3: Single-Sorted Portfolios	Panel B3: Double-Sorted Portfolios Sort by <i>Size</i> , then <i>AIN</i>				
	<i>AIV</i>	Small <i>Size</i>	2	3	4	Large <i>Size</i>
Low <i>AIN</i>	-0.060	-0.075	-0.053	-0.060	-0.068	-0.049
2	-0.029	-0.062	-0.039	-0.036	-0.015	-0.006
3	-0.026	-0.047	-0.029	-0.030	0.010	0.009
4	0.003	-0.018	-0.026	0.011	0.016	0.049
High <i>AIN</i>	0.066	0.008	0.025	0.065	0.077	0.115
High-Low	0.126 (12.52)	0.083 (5.29)	0.078 (7.87)	0.125 (7.82)	0.145 (11.76)	0.164 (9.16)

Table IA.6
Informed Return Run-ups prior to Earnings Announcements, Informed Trading, and Negative *AIV*

This table presents panel regression of the negative abnormal idiosyncratic volatility (*AIV*) on informed pre-announcement return run-up (Panel A) or informed trading (Panel B) with control variables and year fixed effects in the following models.

$$\begin{aligned}
 AIV_{it} = & a + b_1 Informed_{it} + b_2 \beta_{Mkt,it} + b_3 Size_{it} + b_4 BM_{it} + b_5 IV_{AHXZ,it} \\
 & + b_6 Illiquidity_{it} + b_7 Accruals_{it} + b_8 AQ_{it} + b_9 Analyst_{it} + b_{10} FDisp_{it} + b_{11} FErr_{it} \\
 & + b_{12} Missing_{Analyst,it} + \varepsilon_{it+1},
 \end{aligned}$$

where *AIV* is abnormal idiosyncratic volatility. The sample used in this table only contains observations with $AIV \leq 0$. In Panel A, *Informed* is one of the four variables from $SUESign \times RunUp$, $SUESign \times RunUpSign$, $SUE_{FC}Sign \times RunUp$, or $SUE_{FC}Sign \times RunUpSign$. In Panel B, *Informed* is one of the four variables from abnormal insider trading (*AIT*), abnormal short selling (*ASS*), or abnormal institutional trading (*AIN*). The control variables are market beta (β_{Mkt}), market capitalization (*Size*), book-to-market ratio (*BM*), AHXZ's idiosyncratic volatility (IV_{AHXZ}), Amihud's (2002) illiquidity (*Illiquidity*), accruals (*Accruals*), earnings quality (*AQ*), number of analysts following (*Analyst*), analyst dispersion (*FDisp*), analyst forecast errors (*FErr*), and missing analyst indicator (*MissingAnalyst*). The *AIV* is multiplied by 100 to scale up the coefficients. The *t*-statistics reported in parentheses are based on robust standard errors adjusted for heteroskedasticity and clustered at both the firm and year level. \bar{R}^2 is adjusted R^2 . Intercept and year fixed effects are not tabulated. The sample periods are 1972-2015 for models with *SUESign*, 1983-2015 for models with *SUESign_{FC}*, 1996-2015 for models with *AIT*, 2007-2015 for models with *ASS*, and 1999-2015 for models with *AIN*.

Panel A: Informed Pre-Announcement Run-ups and Negative <i>AIV</i>								
Variable	M1	M2	M3	M4	M5	M6	M7	M8
<i>SUESign</i> × <i>RunUp</i>	21.649 (5.71)	26.810 (6.57)						
<i>SUESign</i> × <i>RunUpSign</i>			0.753 (4.41)	0.883 (5.25)				
<i>SUESign_{FC}</i> × <i>RunUp</i>					10.755 (2.92)	16.607 (4.20)		
<i>SUESign_{FC}</i> × <i>RunUpSign</i>							0.305 (1.74)	0.360 (1.82)
β_{Mkt}		1.819 (3.95)		1.849 (3.98)		2.126 (3.94)		2.137 (3.97)
<i>Size</i>		0.724 (5.47)		0.717 (5.42)		0.276 (2.10)		0.281 (2.13)
<i>BM</i>		0.294 (2.03)		0.293 (2.02)		0.187 (1.09)		0.181 (1.06)
IV_{AHXZ}		-7.239 (-6.99)		-7.166 (-6.89)		-12.976 (-7.43)		-12.865 (-7.37)
<i>Illiquidity</i>		0.047 (3.14)		0.046 (3.13)		0.089 (2.36)		0.088 (2.35)
<i>Accruals</i>		6.053 (2.49)		6.173 (2.53)		7.057 (1.38)		7.207 (1.40)
<i>AQ</i>		-3.682 (-1.59)		-3.630 (-1.57)		-3.820 (-1.43)		-3.709 (-1.38)
<i>Analyst</i>		0.464 (1.98)		0.467 (1.99)		0.354 (1.63)		0.346 (1.59)
<i>FDisp</i>		0.059 (0.45)		0.053 (0.40)		0.214 (1.44)		0.220 (1.48)
<i>FErr</i>		-0.033 (-0.28)		-0.030 (-0.25)		-0.057 (-0.43)		-0.056 (-0.42)
<i>MissingAnalyst</i>		-1.129 (-2.23)		-1.117 (-2.20)		0.141 (0.27)		0.165 (0.32)
\bar{R}^2	0.9%	3.7%	0.8%	3.6%	0.8%	4.0%	0.8%	3.9%
Firms	1,415	1,277	1,415	1,277	1,067	970	1,067	970
Observations	62,256	56,184	62,256	56,184	35,195	31,999	35,195	31,999

Table IA.6-continued

Panel B: Informed Trading and Negative <i>AIV</i>								
Variable	M1	M2	M3	M4	M5	M6	M7	M8
<i>AIT</i>	0.086 (0.23)	0.069 (0.17)					-2.448 (-0.51)	-2.875 (-0.57)
<i>ASS</i>			1.314 (1.83)	0.295 (0.79)			1.046 (0.43)	0.033 (0.02)
<i>AIN</i>					10.166 (4.43)	5.481 (2.29)	12.616 (2.66)	-1.865 (-0.34)
<i>AVOL</i>		0.037 (5.78)		0.031 (7.70)		0.032 (7.93)		0.031 (4.54)
β_{Mkt}		0.813 (0.88)		1.016 (1.20)		3.201 (3.37)		0.010 (0.01)
<i>Size</i>		-0.061 (-0.17)		0.054 (0.24)		-0.003 (-0.01)		-1.850 (-2.52)
<i>BM</i>		0.199 (0.51)		0.520 (1.54)		0.093 (0.34)		-0.147 (-0.17)
<i>IV_{AHXXZ}</i>		-11.318 (-5.45)		-15.619 (-5.34)		-21.666 (-5.15)		-31.651 (-4.70)
<i>Illiquidity</i>		0.045 (2.70)		0.012 (1.01)		-0.010 (-0.16)		0.417 (.)
<i>Accruals</i>		29.318 (1.21)		12.556 (1.11)		12.157 (1.47)		30.814 (0.39)
<i>AQ</i>		-4.923 (-0.73)		-14.522 (-4.47)		-11.816 (-2.90)		-37.260 (-2.38)
<i>Analyst</i>		0.622 (1.42)		-0.070 (-0.19)		-0.045 (-0.16)		1.247 (0.99)
<i>FDisp</i>		0.434 (0.79)		0.013 (0.06)		0.575 (2.28)		1.608 (2.87)
<i>FErr</i>		-0.506 (-1.40)		-0.188 (-1.02)		-0.410 (-1.70)		-1.405 (-2.22)
<i>MissingAnalyst</i>		-0.554 (-0.61)		0.063 (0.06)		-0.593 (-0.61)		-2.305 (-0.67)
\bar{R}^2	0.2%	5.1%	0.2%	7.7%	0.6%	7.8%	0.2%	10.7%
Firms	212	193	1,500	1,248	799	873	148	136
Observations	4,243	3,859	13,503	11,236	13,576	14,839	1,334	1,228

Table IA.7
Persistence–Serial Correlation of AIV

This table shows Fama-MacBeth cross-sectional regression results for the following models.

$$AIV_{it} = a + b_1 AIV_{i,t-m} + \varepsilon_{it},$$

where AIV is abnormal idiosyncratic volatility, and AIV_{-m} is abnormal idiosyncratic volatility lagged by m months. The t -statistics reported in parentheses are based on Newey-West standard errors. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from June 1972 to December 2015.

Variable	M1	M2	M3	M4
AIV_{-3}	0.737 (258.89)			
AIV_{-6}		0.495 (122.46)		
AIV_{-12}			0.067 (24.40)	
AIV_{-24}				0.032 (11.58)
Intercept	0.003 (1.77)	0.007 (2.06)	0.014 (2.60)	0.016 (2.79)
\bar{R}^2	54.8%	25.0%	0.5%	0.1%
Firms	2,870	2,787	2,645	2,424
Observations	1,489,428	1,438,056	1,348,828	1,207,273

Table IA.8
Persistence–Probability Transition Matrix

This table reports the probability transition matrix of *AIV* over a three-month horizon in Panel A, a six-month horizon in Panel B, a twelve-month horizon in Panel C, and a twenty-four-month horizon in Panel D. The value in each cell is defined as the probability of a stock previously classified into an *AIV* quintile portfolio formed three months, six months, twelve months, or twenty-four months ago and currently classified into another *AIV* quintile portfolio. The sample period is from July 1972 to December 2015.

Panel A: Three-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₃	63.39	21.29	8.29	4.12	2.91
2	20.90	43.56	22.28	9.25	4.00
3	8.33	22.21	40.72	21.69	7.05
4	4.12	9.48	21.88	45.70	18.83
High <i>AIV</i> ₋₃	2.57	3.94	7.21	19.54	66.76

Panel B: Six-Month Interval					
FromState	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₆	44.52	24.39	14.66	9.54	6.88
2	23.55	28.96	23.13	15.43	8.93
3	14.39	23.02	26.96	22.70	12.93
4	9.33	15.55	22.88	30.22	22.02
High <i>AIV</i> ₋₆	6.42	9.03	13.28	22.82	48.45

Panel C: Twelve-Month Interval					
FromState	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₁₂	23.02	20.63	19.44	18.61	18.30
2	19.62	20.97	20.91	20.19	18.31
3	18.49	20.71	21.04	20.62	19.14
4	17.97	20.10	20.54	21.28	20.10
High <i>AIV</i> ₋₁₂	17.86	18.75	19.52	20.55	23.33

Panel D: Twenty-Four-Month Interval					
FromState	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₂₄	21.25	20.20	19.74	19.31	19.49
2	19.14	20.62	20.82	20.55	18.86
3	18.45	20.63	21.00	20.77	19.15
4	18.38	20.19	20.50	20.85	20.07
High <i>AIV</i> ₋₂₄	18.76	19.61	19.66	20.33	21.64

Table IA.9
Persistence–Probability Transition Matrix: A Portfolio Approach

This table reports the probability transition matrix of *AIV* over a three-month, a six-month, a twelve-month, and a twenty-four-month horizons. In Panel A, all stocks are formed into one of the portfolio based on their Fama-French 48 industry classification. In Panel B, all stock are formed into 100 portfolios based on their *Size*. In Panel C, all stock are formed into 100 portfolios based on their *AIV* values. The value in each cell is defined as the probability of a portfolio previously classified into a *AIV* quintile portfolio formed three months, six months, twelve months, or twenty-four months ago and currently classified into another *AIV* quintile portfolio. The sample period is from July 1972 to December 2015.

Panel A: Portfolio Formed by Industry					
Three-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₁	60.42	24.72	15.04	12.40	12.38
2	22.22	39.81	25.71	15.63	11.98
3	13.99	25.85	34.27	25.26	13.95
4	12.00	15.11	25.54	39.42	22.55
High <i>AIV</i> ₋₁	12.36	13.41	15.53	25.56	58.85
Six-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₆	46.49	25.55	16.97	15.79	14.33
2	22.41	31.19	24.83	18.47	14.03
3	15.63	25.26	28.03	24.78	16.54
4	13.51	18.39	24.91	31.44	23.41
High <i>AIV</i> ₋₆	15.03	15.53	18.35	24.98	44.36
Twelve-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₁₂	30.29	23.88	19.01	19.25	20.98
2	20.28	24.57	24.44	23.13	17.34
3	17.66	22.70	25.51	24.38	19.33
4	17.14	22.49	24.39	25.11	20.02
High <i>AIV</i> ₋₁₂	21.06	20.50	21.82	23.14	27.00
Twenty-Four-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₂₄	30.72	22.25	19.58	19.52	21.62
2	20.79	25.26	23.54	22.35	17.73
3	17.22	24.03	23.99	24.68	18.99
4	17.10	22.10	24.93	25.37	20.54
High <i>AIV</i> ₋₂₄	21.03	19.97	21.10	23.01	27.27

Table IA.9-continued

Panel B: Portfolio Formed by Firm Size					
Three-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₃	54.22	25.64	12.56	5.77	1.81
2	25.51	31.07	23.57	14.48	5.37
3	11.26	24.14	28.33	23.91	12.35
4	5.32	14.96	24.16	30.82	24.74
High <i>AIV</i> ₋₃	1.43	5.45	11.99	25.31	55.82
Six-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₆	40.83	25.78	16.75	10.65	5.98
2	25.16	24.31	22.31	17.49	10.73
3	16.10	22.48	22.81	21.90	16.71
4	9.97	17.65	22.27	25.91	24.21
High <i>AIV</i> ₋₆	5.00	11.06	16.70	24.57	42.67
Twelve-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₁₂	26.45	21.45	19.17	17.25	15.68
2	21.29	20.99	20.73	19.16	17.83
3	18.46	20.33	20.53	20.62	20.06
4	16.41	20.26	20.53	21.75	21.04
High <i>AIV</i> ₋₁₂	13.75	18.02	19.99	22.08	26.17
Twenty-Four-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₂₄	25.15	20.93	19.64	17.80	16.49
2	19.86	20.76	20.56	19.95	18.87
3	18.93	20.78	20.49	19.78	20.02
4	18.06	19.69	20.49	20.49	21.27
High <i>AIV</i> ₋₂₄	14.30	18.88	19.79	22.86	24.18

Table IA.9-continued

Panel C: Portfolio Formed by Firm <i>AIV</i>					
Three-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₃	86.82	12.92	0.25	0.01	-
2	13.05	70.31	16.25	0.39	-
3	0.13	16.54	67.97	15.32	0.05
4	-	0.23	15.39	73.98	10.39
High <i>AIV</i> ₋₃	-	-	0.13	10.31	89.56

Six-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₆	75.60	20.52	3.37	0.49	0.01
2	21.26	50.30	23.83	4.40	0.21
3	2.80	24.87	47.37	22.80	2.15
4	0.33	4.06	23.37	54.36	17.88
High <i>AIV</i> ₋₆	0.01	0.24	2.05	17.95	79.75

Twelve-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₁₂	33.33	21.03	18.28	15.01	12.34
2	21.74	23.10	20.75	19.09	15.32
3	17.82	21.03	21.51	21.82	17.81
4	14.92	19.46	21.34	21.76	22.51
High <i>AIV</i> ₋₁₂	12.19	15.38	18.11	22.31	32.01

Twenty-Four-Month Interval					
From State	Low <i>AIV</i>	2	3	4	High <i>AIV</i>
Low <i>AIV</i> ₋₂₄	26.93	20.73	18.21	18.30	15.82
2	21.57	21.08	20.39	19.45	17.51
3	18.95	20.69	21.62	20.30	18.44
4	16.79	19.85	20.75	21.01	21.60
High <i>AIV</i> ₋₂₄	15.77	17.64	19.03	20.93	26.63

Table IA.10
Persistence–Probability Transition Matrix of Other Information Risk Measures

This table reports the probability transition matrix of selected information risk measures over a twelve-month horizon. The value in each cell in Panel A is defined as the probability of a stock previously classified into a *Size* quintile portfolio formed twelve months ago and currently classified into another *Size* quintile portfolio. Panel B, C, and D report the similar probabilities for *PSOS*, *Accruals*, and *FErr*, respectively. The sample periods are 1972-2015 for transition matrix with *Size*, 1984-2005 for those with *PSOS*, 1972-2015 for those with *Accruals*, and 1983-2015 for those with *FErr*.

Panel A: <i>Size</i>					
From State	Low <i>Size</i>	2	3	4	High <i>Size</i>
Low <i>Size</i> ₋₁₂	84.86	14.25	0.93	0.30	0.17
2	15.20	67.66	16.45	0.84	0.57
3	0.79	16.59	68.53	14.13	0.54
4	0.21	0.93	12.62	77.66	9.12
High <i>Size</i> ₋₁₂	-	0.21	0.45	7.20	92.65

Panel B: <i>PSOS</i>					
FromState	Low <i>PSOS</i>	2	3	4	High <i>PSOS</i>
Low <i>PSOS</i> ₋₁₂	37.59	29.39	19.05	10.28	3.68
2	28.87	31.15	24.23	11.57	4.18
3	21.30	24.52	27.17	19.89	7.13
4	10.24	12.88	22.28	32.07	22.53
High <i>PSOS</i> ₋₁₂	4.49	4.46	7.10	22.65	61.34

Panel C: <i>Accruals</i>					
FromState	Low <i>Accruals</i>	2	3	4	High <i>Accruals</i>
Low <i>Accruals</i> ₋₁₂	39.01	18.67	13.35	13.80	15.47
2	19.05	29.69	23.11	17.26	11.19
3	13.04	23.83	30.70	21.33	11.35
4	13.31	17.44	21.85	28.76	19.16
High <i>Accruals</i> ₋₁₂	16.24	12.04	12.10	19.33	40.82

Panel D: <i>FErr</i>					
FromState	Low <i>FErr</i>	2	3	4	High <i>FErr</i>
Low <i>FErr</i> ₋₁₂	38.67	28.09	17.87	11.84	5.89
2	27.28	26.94	21.60	15.98	11.11
3	18.88	23.14	25.08	20.46	15.21
4	10.81	16.41	22.18	26.69	26.33
High <i>FErr</i> ₋₁₂	5.09	7.86	13.01	24.48	51.17

Table IA.11
Persistence–Probability Transition Matrix of IV_{PEA} and IV_{NEA}

This table reports the probability transition matrix of IV_{PEA} in Panel A and IV_{NEA} in Panel B over a three-month, a six-month, a twelve-month, and a twenty-four-month horizons. The value in each cell is defined as the probability of a stock previously classified into a IV_{PEA} (IV_{NEA}) quintile portfolio formed three months, six months, twelve months, or twenty-four months ago and currently classified into another IV_{PEA} (IV_{NEA}) quintile portfolio. The sample period is from July 1972 to December 2015.

Panel A: Stock Level Transition Matrix for IV_{PEA}					
Three-Month Interval					
From State	Low IV_{PEA}	2	3	4	High IV_{PEA}
Low $IV_{PEA,-3}$	81.51	15.26	2.22	0.74	0.45
2	15.76	63.67	16.97	2.81	0.83
3	2.03	18.01	60.72	16.79	2.44
4	0.55	2.74	17.76	65.06	13.96
High $IV_{PEA,-3}$	0.31	0.60	2.29	14.69	82.30
Six-Month Interval					
From State	Low IV_{PEA}	2	3	4	High IV_{PEA}
Low $IV_{PEA,-6}$	71.69	21.18	4.88	1.54	0.76
2	21.89	48.09	22.15	6.07	1.81
3	4.91	23.55	43.98	22.23	5.34
4	1.27	6.37	23.57	48.59	20.20
High $IV_{PEA,-6}$	0.52	1.47	5.51	21.76	70.85
Twelve-Month Interval					
From State	Low IV_{PEA}	2	3	4	High IV_{PEA}
Low $IV_{PEA,-12}$	58.98	25.42	9.95	3.91	1.75
2	26.63	34.06	23.12	11.62	4.56
3	10.65	24.74	29.82	23.50	11.29
4	3.82	13.07	25.12	32.83	25.16
High $IV_{PEA,-12}$	1.39	4.59	12.94	28.21	52.90
Twenty-Four-Month Interval					
From State	Low IV_{PEA}	2	3	4	High IV_{PEA}
Low $IV_{PEA,-24}$	55.80	25.68	11.02	4.97	2.53
2	27.99	31.97	22.06	12.40	5.59
3	12.50	24.58	27.71	22.33	12.88
4	5.35	14.80	25.20	29.89	24.75
High $IV_{PEA,-24}$	2.20	6.92	15.54	28.86	46.48

Table IA.11-continued

Panel B: Stock Level Transition Matrix for IV_{NEA}					
Three-Month Interval					
From State	Low IV_{NEA}	2	3	4	High IV_{NEA}
Low $IV_{NEA,-3}$	89.36	9.93	0.63	0.29	0.20
2	10.30	76.59	12.18	0.85	0.31
3	0.41	13.12	72.89	12.97	0.79
4	0.24	0.56	13.89	74.88	10.70
High $IV_{NEA,-3}$	0.24	0.23	0.50	10.97	88.54

Six-Month Interval					
From State	Low IV_{NEA}	2	3	4	High IV_{NEA}
Low $IV_{NEA,-6}$	83.27	14.82	1.49	0.49	0.30
2	15.78	64.26	17.50	2.09	0.49
3	1.02	19.68	58.72	18.66	2.00
4	0.29	1.58	20.81	61.04	16.42
High $IV_{NEA,-6}$	0.30	0.32	1.46	17.66	80.71

Twelve-Month Interval					
From State	Low IV_{NEA}	2	3	4	High IV_{NEA}
Low $IV_{NEA,-12}$	74.69	19.93	4.00	1.12	0.53
2	22.25	49.82	21.26	5.43	1.27
3	3.30	25.44	43.21	22.57	5.48
4	0.72	5.45	26.73	45.08	22.14
High $IV_{NEA,-12}$	0.40	0.80	5.26	25.83	68.04

Twenty-Four-Month Interval					
From State	Low IV_{NEA}	2	3	4	High IV_{NEA}
Low $IV_{NEA,-24}$	70.06	21.48	5.75	1.94	0.92
2	25.40	43.27	21.27	7.57	2.50
3	5.78	27.33	36.67	22.24	7.99
4	1.48	9.23	27.92	37.63	23.79
High $IV_{NEA,-24}$	0.59	2.07	9.90	29.31	58.37

Table IA.12
Monthly Five-Factor Adjusted Alphas of AIV Portfolios

This table reports equally weighted average monthly excess returns (R) and Fama-French five-factor risk-adjusted portfolio alphas (R_{Adj}) of stock portfolios sorted on the abnormal idiosyncratic volatility (AIV). Panel A shows R and R_{Adj} of single-sorted portfolios formed monthly on prior-month AIV . Panel B shows R_{Adj} of double-sorted portfolios sorted monthly first by prior June market capitalization ($Size$) and then by prior-month AIV . The differences in R and R_{Adj} between the high and the low portfolios are also reported, along with t -statistics in parentheses. The t -statistics reported in parentheses are based on Newey-West standard errors. The sample period is from July 1972 to December 2015.

Portfolios	Panel A: Single-Sorted Portfolios		Panel B: Double-Sorted Portfolios Sort by $Size$, then AIV				
	R	R_{Adj}	Small $Size$	2	3	4	Large $Size$
Low AIV	0.999	-0.132	-0.234	-0.163	-0.169	-0.013	-0.027
2	1.124	-0.054	-0.089	-0.153	-0.122	-0.001	0.033
3	1.151	0.009	-0.029	-0.035	-0.061	-0.023	0.107
4	1.136	-0.041	-0.109	-0.179	0.030	0.028	0.028
High AIV	1.137	-0.031	-0.055	-0.126	-0.042	0.109	0.056
High-Low	0.138 (3.19)	0.101 (2.05)	0.178 (2.30)	0.037 (0.48)	0.126 (1.62)	0.122 (1.67)	0.083 (1.16)

Table IA.13
Long-term Monthly Stock *AIV*: A Portfolio Approach

This table reports equally weighted average future abnormal idiosyncratic volatility (*AIV*) of stock portfolios sorted on the abnormal idiosyncratic volatility (*AIV*). The future values *AIV* in one month, two months, three months, four months, five months, six months, nine months, twelve months, and twenty-four months are reported. The differences in *AIV* between the high and the low portfolios are also reported, along with *t*-statistics in parentheses. The *t*-statistics reported in parentheses are based on Newey-West standard errors. The sample period is from July 1972 to December 2015.

Future Month	AIV_{t+1}	AIV_{t+2}	AIV_{t+3}	AIV_{t+4}	AIV_{t+5}	AIV_{t+6}	AIV_{t+9}	AIV_{t+12}	AIV_{t+24}
Low <i>AIV</i>	-0.430	-0.387	-0.344	-0.303	-0.265	-0.228	-0.129	-0.041	0.001
2	-0.144	-0.132	-0.119	-0.107	-0.094	-0.082	-0.044	-0.007	0.011
3	0.010	0.008	0.007	0.005	0.005	0.005	0.007	0.013	0.016
4	0.164	0.150	0.136	0.122	0.109	0.097	0.062	0.033	0.021
High <i>AIV</i>	0.454	0.417	0.380	0.343	0.308	0.274	0.174	0.075	0.030
High-Low	0.883 (22.78)	0.803 (217.31)	0.724 (193.68)	0.646 (176.81)	0.573 (154.11)	0.502 (135.48)	0.303 (88.08)	0.116 (53.66)	0.028 (19.23)

Table IA.14
Long-term Monthly Stock Returns and *AIV*

This table repeats Fama-MacBeth regression of M2 of Table 7 with long-term expected stock returns in the following models.

$$R_{i,t+m} = a + b_1 AIV_{it} + b_2 \text{Control}_{it} + \varepsilon_{i,t+m},$$

where $R_{i,t+m}$ is the monthly stock excess return of firm i during month $t + m$, AIV is abnormal idiosyncratic volatility. The control variables are as follows. β_{Mkt} is market beta, $Size$ is market capitalization, BM is book-to-market ratio, IV_{AHXZ} is AHXZ's idiosyncratic volatility, $Illiquidity$ is Amihud's (2002) illiquidity, R_{-1} is past one-month stock return, $R_{[-3,-2]}$ is past two-month stock returns, $R_{[-6,-4]}$ is past three-month stock returns, and $R_{[-12,-7]}$ is past six-month stock returns. The t -statistics reported in parentheses are based on Newey-West standard errors. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from July 1972 to December 2015.

Variable	R_{t+2}	R_{t+3}	R_{t+4}	R_{t+5}	R_{t+6}	R_{t+9}	R_{t+12}	R_{t+18}	R_{t+24}
	M1	M2	M3	M4	M5	M6	M7	M8	M9
<i>AIV</i>	0.116 (3.16)	0.061 (1.64)	0.067 (1.75)	0.028 (0.76)	0.054 (1.45)	0.037 (1.00)	0.037 (0.94)	0.038 (0.90)	0.040 (0.93)
β_{Mkt}	0.063 (0.32)	0.037 (0.19)	0.064 (0.32)	0.080 (0.41)	0.044 (0.23)	0.047 (0.25)	0.092 (0.48)	0.042 (0.22)	0.074 (0.38)
<i>Size</i>	-0.050 (-1.80)	-0.045 (-1.60)	-0.034 (-1.20)	-0.030 (-1.08)	-0.037 (-1.32)	-0.009 (-0.32)	-0.005 (-0.20)	-0.016 (-0.56)	-0.011 (-0.40)
<i>BM</i>	0.249 (4.26)	0.250 (4.30)	0.257 (4.40)	0.236 (4.08)	0.232 (4.05)	0.208 (3.63)	0.221 (3.85)	0.184 (3.07)	0.155 (2.67)
IV_{AHXZ}	0.014 (4.43)	0.013 (3.64)	0.011 (3.34)	0.011 (3.02)	0.010 (3.09)	0.008 (2.46)	0.007 (2.32)	0.006 (1.88)	0.003 (0.75)
<i>Illiquidity</i>	-1.527 (-7.19)	-1.249 (-5.87)	-1.061 (-5.12)	-0.921 (-4.29)	-0.827 (-3.64)	-0.477 (-2.21)	-0.544 (-2.57)	-0.292 (-1.35)	-0.258 (-1.28)
R_{-1}	0.427 (1.41)	1.785 (7.12)	0.751 (2.82)	0.992 (3.52)	1.462 (5.28)	1.477 (5.56)	1.400 (5.87)	-0.079 (-0.32)	1.366 (5.92)
$R_{[-3,-2]}$	0.764 (3.36)	0.439 (1.84)	0.838 (3.29)	0.978 (4.50)	0.844 (4.48)	0.871 (4.14)	-0.472 (-2.45)	-0.374 (-2.33)	-0.527 (-2.91)
$R_{[-6,-4]}$	0.672 (2.94)	0.788 (3.88)	0.926 (5.02)	0.972 (4.69)	0.928 (4.70)	0.181 (1.15)	-0.616 (-3.49)	0.060 (0.39)	-0.581 (-3.64)
$R_{[-12,-7]}$	0.650 (4.31)	0.440 (3.09)	0.185 (1.38)	0.095 (0.77)	-0.125 (-1.01)	-0.435 (-3.48)	-0.132 (-1.25)	-0.171 (-1.46)	-0.102 (-0.96)
Intercept	1.182 (4.47)	1.097 (4.19)	1.015 (3.79)	0.993 (3.80)	1.056 (4.09)	0.884 (3.37)	0.850 (3.26)	0.945 (3.64)	0.958 (3.71)
\bar{R}^2	5.8%	5.7%	5.5%	5.4%	5.3%	4.9%	4.6%	4.2%	4.0%
Firms	2,740	2,711	2,683	2,656	2,630	2,558	2,490	2,376	2,272
Observations	1,427,634	1,409,705	1,392,481	1,375,879	1,359,721	1,314,993	1,272,485	1,199,729	1,133,937

Table IA.15
Large and Active Stocks

This table shows Fama-MacBeth cross-sectional regression results for the following model.

$$R_{i,t+1} = a + b_1 AIV_{it} + b_2 \text{Control}_{it} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the monthly stock excess return of firm i at time $t+1$, AIV is abnormal idiosyncratic volatility. The control variables are as follows. β_{Mkt} is market beta, $Size$ is market capitalization, BM is book-to-market ratio, IV_{AHXZ} is AHXZ's idiosyncratic volatility, $Illiquidity$ is Amihud's (2002) illiquidity, R_{-1} is past one-month stock return, $R_{[-3,-2]}$ is past two-month stock returns, $R_{[-6,-4]}$ is past three-month stock returns, and $R_{[-12,-7]}$ is past six-month stock returns. Price>\$5 signifies stocks with price greater than 5 at the end of last June. NYSE signifies stocks traded on the New York Stock Exchange. Active Stocks refer to stocks with at least 100 shares traded in every trading day in the past one year. The t -statistics reported in parentheses are based on Newey-West standard errors. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from July 1972 to December 2015.

Variable	Price>\$5		NYSE		Active Stocks	
	M1	M2	M3	M4	M5	M6
<i>AIV</i>	0.118 (3.42)	0.145 (4.05)	0.081 (1.70)	0.107 (2.36)	0.093 (1.82)	0.124 (2.48)
β_{Mkt}	-0.069 (-0.27)	0.009 (0.04)	-0.099 (-0.39)	-0.074 (-0.37)	-0.175 (-0.66)	0.019 (0.09)
<i>Size</i>	-0.005 (-0.17)	-0.060 (-2.13)	-0.039 (-1.19)	-0.084 (-2.90)	-0.091 (-2.19)	-0.160 (-4.60)
<i>BM</i>	0.245 (3.59)	0.217 (3.41)	0.127 (2.03)	0.145 (2.35)	0.252 (3.40)	0.214 (3.18)
<i>IV_{AHXZ}</i>		-1.747 (-9.23)		-1.708 (-6.76)		-2.406 (-9.90)
<i>Illiquidity</i>		0.007 (0.85)		0.065 (1.29)		0.202 (5.72)
R_{-1}		-4.232 (-9.70)		-3.726 (-7.05)		-3.594 (-7.70)
$R_{[-3,-2]}$		0.414 (1.51)		0.358 (1.20)		0.510 (1.82)
$R_{[-6,-4]}$		0.671 (2.45)		0.325 (0.99)		0.516 (1.82)
$R_{[-12,-7]}$		0.891 (5.01)		0.909 (4.29)		0.912 (4.67)
Intercept	0.889 (2.97)	1.340 (4.59)	1.087 (3.72)	1.507 (5.43)	1.606 (4.85)	2.210 (6.86)
\bar{R}^2	3.7%	6.7%	4.4%	8.5%	4.7%	8.3%
Firms	2,378	2,210	1,160	1,093	1,835	1,766
Observations	1,241,092	1,153,372	605,501	570,491	957,812	921,720

Table IA.16
Alternative AIV Measurement Windows

This table shows Fama-MacBeth cross-sectional regression results for the following model.

$$R_{i,t+1} = a + b_1 AIV_{it} + b_2 \text{Control}_{it} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the monthly stock excess return of firm i at time $t+1$, AIV is abnormal idiosyncratic volatility estimated using alternative measurement windows. AIV is computed as $(IV_{PEA} - IV_{NEA})$, where IV_{PEA} is calculated as the log of the annualized standard deviation of daily residuals based on the Fama-French three-factor model in ten days [-10,-1] ([-3,-1], [-10,-1] [2,10], [-5,-1] [2,5], and [-3,-1] [2,3]) prior quarter and annual earnings announcements over the preceding one year and IV_{NEA} is defined as the log of the annualized standard deviation of daily residuals based on the Fama-French three-factor model excluding days around earnings announcements [-10,10]([-3,3], [-10,10], [-5,5], and [-3,3]) over the preceding one year. The control variables are as follows. β_{Mkt} is market beta, $Size$ is market capitalization, BM is book-to-market ratio, IV_{AHXZ} is AHXZ's idiosyncratic volatility, $Illiquidity$ is Amihud's (2002) illiquidity, R_{-1} is past one-month stock return, $R_{[-3,-2]}$ is past two-month stock returns, $R_{[-6,-4]}$ is past three-month stock returns, and $R_{[-12,-7]}$ is past six-month stock returns. The t -statistics reported in parentheses are based on Newey-West standard errors. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from July 1972 to December 2015.

Variable	[-10,-1]		[-3,-1]		[-10,-1] [2,10]		[-5,-1] [2,5]		[-3,-1] [2,3]	
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
AIV	0.114 (2.60)	0.181 (3.79)	0.144 (4.72)	0.155 (4.61)	0.050 (0.91)	0.147 (2.48)	0.111 (2.49)	0.150 (3.02)	0.113 (2.89)	0.135 (3.08)
β_{Mkt}	-0.091 (-0.34)	0.062 (0.30)	-0.100 (-0.38)	0.053 (0.25)	-0.089 (-0.34)	0.064 (0.31)	-0.089 (-0.34)	0.064 (0.31)	-0.091 (-0.35)	0.061 (0.29)
$Size$	0.012 (0.34)	-0.041 (-1.43)	0.012 (0.34)	-0.042 (-1.44)	0.013 (0.38)	-0.040 (-1.38)	0.013 (0.37)	-0.040 (-1.39)	0.013 (0.37)	-0.040 (-1.40)
BM	0.305 (4.62)	0.284 (4.56)	0.300 (4.56)	0.279 (4.49)	0.305 (4.62)	0.284 (4.56)	0.305 (4.61)	0.284 (4.56)	0.303 (4.60)	0.282 (4.54)
IV_{AHXZ}		-1.605 (-8.09)		-1.602 (-8.05)		-1.607 (-8.09)		-1.608 (-8.10)		-1.607 (-8.11)
$Illiquidity$		0.015 (4.16)		0.015 (4.21)		0.015 (4.14)		0.015 (4.16)		0.015 (4.18)
R_{-1}		-5.436 (-11.21)		-5.456 (-11.27)		-5.437 (-11.21)		-5.436 (-11.22)		-5.443 (-11.22)
$R_{[-3,-2]}$		0.262 (1.03)		0.285 (1.12)		0.259 (1.02)		0.261 (1.03)		0.260 (1.02)
$R_{[-6,-4]}$		0.614 (2.44)		0.627 (2.48)		0.614 (2.43)		0.612 (2.43)		0.616 (2.44)
$R_{[-12,-7]}$		0.915 (5.39)		0.920 (5.41)		0.915 (5.39)		0.915 (5.39)		0.914 (5.39)
Intercept	0.826 (2.96)	1.198 (4.35)	0.837 (2.99)	1.209 (4.38)	0.818 (2.93)	1.188 (4.32)	0.818 (2.92)	1.188 (4.32)	0.819 (2.93)	1.190 (4.32)
\bar{R}^2	3.6%	6.5%	3.6%	6.5%	3.6%	6.5%	3.6%	6.5%	3.6%	6.5%
Firms	2,965	2,772	2,940	2,754	2,965	2,772	2,965	2,772	2,963	2,771
Observations	1,547,696	1,447,235	1,534,523	1,437,780	1,547,696	1,447,235	1,547,696	1,447,235	1,546,519	1,446,400

Table IA.17
Expected Stock Returns and Sign of AIV

This table repeats Fama-MacBeth regression of M2 of Table 7 with long-term expected stock returns in the following models.

$$R_{i,t+1} = a + b_1 AIV_{it} + b_2 \text{Control}_{it} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the monthly stock excess return of firm i at time $t + 1$, AIV is abnormal idiosyncratic volatility. The control variables are as follows. β_{Mkt} is market beta, $Size$ is market capitalization, BM is book-to-market ratio, IV_{AHXZ} is AHXZ's idiosyncratic volatility, $Illiquidity$ is Amihud's (2002) illiquidity, R_{-1} is past one-month stock return, $R_{[-3,-2]}$ is past two-month stock returns, $R_{[-6,-4]}$ is past three-month stock returns, and $R_{[-12,-7]}$ is past six-month stock returns. The t -statistics reported in parentheses are based on Newey-West standard errors. M1-M4 include a step-wise dummy variable, $DAIV$, which takes the value of one if AIV is positive, and 0 otherwise. M5-M6 examine a subsample of the current AIV and its historical means are negative, M7-M8 examine the rest of the subsample. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from July 1972 to December 2015.

Variable	Step-wise Indicator		AIV and Step-wise Indicator		$AIV < 0$		$AIV > 0$	
	M1	M2	M3	M4	M5	M6	M7	M8
AIV			0.164 (3.17)	0.197 (3.67)	0.460 (4.57)	0.505 (4.28)	0.069 (1.63)	0.088 (2.03)
$DAIV$	0.066 (3.21)	0.077 (3.41)	-0.013 (-0.41)	-0.018 (-0.59)				
β_{Mkt}	-0.091 (-0.34)	0.061 (0.29)	-0.093 (-0.35)	0.061 (0.29)	-0.228 (-0.89)	-0.027 (-0.13)	-0.032 (-0.12)	0.097 (0.45)
$Size$	0.013 (0.36)	-0.041 (-1.40)	0.012 (0.33)	-0.042 (-1.44)	-0.007 (-0.18)	-0.051 (-1.48)	0.013 (0.39)	-0.044 (-1.54)
BM	0.305 (4.61)	0.284 (4.56)	0.304 (4.60)	0.283 (4.54)	0.332 (4.79)	0.313 (4.84)	0.286 (4.26)	0.261 (4.04)
IV_{AHXZ}		-1.606 (-8.11)		-1.611 (-8.13)		-1.784 (-7.94)		-1.548 (-7.63)
$Illiquidity$		0.015 (4.15)		0.015 (4.19)		0.018 (3.48)		0.014 (3.89)
R_{-1}		-5.434 (-11.20)		-5.439 (-11.21)		-5.491 (-10.69)		-5.408 (-11.00)
$R_{[-3,-2]}$		0.263 (1.03)		0.265 (1.04)		0.071 (0.24)		0.321 (1.23)
$R_{[-6,-4]}$		0.609 (2.42)		0.612 (2.43)		0.592 (2.20)		0.602 (2.31)
$R_{[-12,-7]}$		0.912 (5.38)		0.913 (5.39)		0.799 (4.12)		0.945 (5.61)
Intercept	0.789 (2.82)	1.156 (4.22)	0.836 (3.01)	1.210 (4.43)	1.201 (4.08)	1.524 (5.07)	0.740 (2.59)	1.143 (4.06)
\bar{R}^2	3.6%	6.4%	3.6%	6.4%	3.5%	6.6%	3.6%	6.6%
Firms/Portfolios	2,965	2,772	2,965	2,772	808	752	2,157	2,020
Observations	1,547,696	1,447,235	1,547,696	1,447,235	421,543	392,589	1,126,153	1,054,646

Table IA.18
Robustness

This table shows Fama-MacBeth cross-sectional regression results for the following model.

$$R_{i,t+1} = a + b_1 AIV_{it} + b_2 \text{Control}_{it} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the monthly stock excess return of firm i at time $t+1$, AIV is abnormal idiosyncratic volatility. The control variables are as follows. β_{Mkt} is market beta, $Size$ is market capitalization, BM is book-to-market ratio, IV_{AHXZ} is AHXZ's idiosyncratic volatility, $Illiquidity$ is Amihud's (2002) illiquidity, R_{-1} is past one-month stock return, $R_{[-3,-2]}$ is past two-month stock returns, $R_{[-6,-4]}$ is past three-month stock returns, and $R_{[-12,-7]}$ is past six-month stock returns. Skip One Month refers to a one-month gap between AIV and $R_{i,t+1}$. Market Model refers to the alternative measure of AIV that is calculated based on the market model instead of the Fama-French three-factor model. Announcement Time refers to the alternative measure of AIV that is calculated based on earnings-announcement windows not adjusted by earnings-announcement time. Raw AIV is calculated without taking the logarithm transformation of idiosyncratic volatility. Return Adjusted AIV is adjusted for non-zero returns during the estimation period. Restricted Sample uses subsample with insider trading, short selling, or institutional trading. The t -statistics reported in parentheses are based on Newey-West standard errors. The table presents time series averages of the estimated slope coefficients from the above regression. \bar{R}^2 is the time-series average of adjusted R^2 in the cross-sectional regression, and Firms denotes the time-series average of the number of firms in the cross-sectional regression. The sample period is from July 1972 to December 2015 for all models except M6 where sample period is 1996-2015.

Variable	Skip One Month M1	Market Model M2	Announcement Time M3	Raw AIV M4	Return Adjusted M5	Restricted Sample M6
AIV	0.096 (2.58)	0.177 (4.62)	0.164 (4.20)	0.269 (3.19)	0.181 (4.82)	0.145 (1.85)
β_{Mkt}	0.062 (0.30)	0.060 (0.29)	0.061 (0.29)	0.063 (0.30)	0.061 (0.29)	0.113 (0.34)
$Size$	-0.040 (-1.39)	-0.042 (-1.45)	-0.041 (-1.43)	-0.040 (-1.39)	-0.041 (-1.43)	-0.101 (-2.26)
BM	0.284 (4.53)	0.283 (4.54)	0.283 (4.54)	0.284 (4.56)	0.282 (4.54)	0.077 (0.82)
IV_{AHXZ}	-1.577 (-7.98)	-1.609 (-8.12)	-1.609 (-8.11)	-1.607 (-8.13)	-1.609 (-8.12)	-1.136 (-3.12)
$Illiquidity$	0.014 (3.96)	0.015 (4.17)	0.015 (4.17)	0.015 (4.14)	0.015 (4.18)	0.015 (2.27)
R_{-1}	-5.447 (-11.25)	-5.436 (-11.21)	-5.436 (-11.21)	-5.437 (-11.22)	-5.436 (-11.21)	-2.732 (-5.08)
$R_{[-3,-2]}$	0.265 (1.04)	0.262 (1.03)	0.262 (1.03)	0.261 (1.03)	0.263 (1.03)	0.557 (1.25)
$R_{[-6,-4]}$	0.614 (2.43)	0.613 (2.43)	0.613 (2.43)	0.611 (2.43)	0.612 (2.43)	0.565 (1.38)
$R_{[-12,-7]}$	0.916 (5.34)	0.913 (5.38)	0.913 (5.38)	0.915 (5.39)	0.913 (5.38)	0.338 (1.36)
Intercept	1.194 (4.34)	1.201 (4.36)	1.198 (4.36)	1.189 (4.32)	1.204 (4.37)	1.536 (2.84)
\bar{R}^2	6.5%	6.4%	6.5%	6.5%	6.5%	6.7%
Firms	2,743	2,772	2,772	2,772	2,772	2,275
Observations	1,429,058	1,447,235	1,447,235	1,447,235	1,447,235	570,993