

Internet Appendix to “Stock Return Asymmetry: Beyond Skewness”

This appendix provides complete results for the robustness checks discussed in the paper. Below, we briefly describe the contents of the appendix tables.

Table IA.1: Fama-MacBeth regressions using alternative measures of skewness suggested by Ghysels, Plazzi, and Valkanov (2016) discussed in footnote 13 of the paper.

Table IA.2: Fama-MacBeth regressions using $E(ISKEW)$ discussed in footnote 14 of the paper.

Table IA.3: Fama-MacBeth regressions using the moving average estimates discussed in footnote 15 of the paper.

Table IA.4: Fama-MacBeth regressions adjusting the standard errors using the Newey and West (1987) correction with 24 lags discussed in footnote 16 of the paper.

Table IA.5: Fama-MacBeth regressions with $ISKEW$, IE_ϕ , and IS_ϕ estimated using 6 months of daily returns discussed in footnote 16 of the paper.

Table IA.6: Fama-MacBeth regressions at portfolio-levels, using $5 \times 5 \times 5$ portfolios by size, book-to-market ratios, and momentum discussed in Section IV.C of the paper.

Table IA.7: Portfolios sorted by $SIZE$ and asymmetry measures discussed in Section IV.D of the paper.

Table IA.8: Fama-MacBeth regressions with $IE_{1.5}^2$ and $IS_{1.5}^2$ for data in the range from 1.5 standard deviation below/above the mean to 2 discussed in footnote 19 of the paper.

Table IA.9: Portfolios sorted by $IE_{1.5}^2$ or $IS_{1.5}^2$ discussed in footnote 19 of the paper.

Table IA.10: Fama-MacBeth regressions controlling for the financial distress measures of O -score or P_CHS discussed in Section V.A of the paper.

Table IA.11: Fama-MacBeth regressions for different market volatility regimes discussed in Section V.B of the paper.

Table IA.12: Fama-MacBeth regressions for stocks with different $IVOL$ levels discussed in footnote 21 of the paper.

Table IA.13: Fama-MacBeth regressions for different sentiment regimes discussed in Section

V.C of the paper.

Table IA.14: Fama-MacBeth regressions controlling for the second term of Equation (19) U_1^I discussed in Appendix A of the paper.

Table IA.15: Fama-MacBeth regressions controlling for the second term of Equation (19) U_2^I discussed in Appendix A of the paper.

Table IA.1: Fama-MacBeth regressions using alternative measures of skewness suggested by Ghysels, Plazzi, and Valkanov (2016)

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess stock returns or risk-adjusted stock returns on various pricing variables (see first column) using monthly data t ($t + 1$) from July (August) 1963 to November (December) 2015. We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. For columns (1)-(6), the dependent variable is excess return. The risk-adjusted return is the dependent variable for columns (7)-(12). Variable definitions are provided in Appendix B. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	R						RA					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>ISK_{0.75}</i>	0.070*** (2.77)	0.019 (1.58)					0.041** (2.39)	0.022* (1.78)				
<i>ISK_{0.99}</i>			0.032 (0.26)	-0.071 (-1.39)	0.105 (1.27)				-0.008 (-0.13)	-0.020 (-0.45)	0.052 (1.15)	
<i>ISK_{INT}</i>						-0.030 (-0.86)						0.021 (0.69)
<i>SIZE</i>		-0.195*** (-4.94)		-0.198*** (-5.02)		-0.197*** (-4.98)		-0.120*** (-9.08)		-0.121*** (-9.07)		-0.121*** (-9.05)
<i>BM</i>		0.212*** (3.90)		0.209*** (3.87)		0.208*** (3.84)		-0.002 (-0.04)		-0.005 (-0.13)		-0.004 (-0.10)
<i>MOM</i>		0.008*** (5.80)		0.008*** (5.90)		0.008*** (5.88)		0.008*** (5.70)		0.008*** (5.73)		0.008*** (5.70)
<i>TURN</i>		-0.007 (-0.19)		-0.005 (-0.15)		-0.005 (-0.15)		0.124*** (3.64)		0.125*** (3.67)		0.124*** (3.67)
<i>ILLIQ</i>		0.030** (2.14)		0.030** (2.13)		0.029** (2.04)		0.046*** (3.10)		0.046*** (3.07)		0.046*** (3.07)
β		0.738*** (3.66)		0.748*** (3.72)		0.743*** (3.68)						
<i>MAX</i>		0.037*** (4.91)		0.039*** (5.12)		0.038*** (4.99)		0.031*** (4.19)		0.031*** (4.24)		0.031*** (4.23)
<i>IVOL</i>		-0.509*** (-16.66)		-0.512*** (-16.62)		-0.509*** (-16.68)		-0.398*** (-13.92)		-0.398*** (-13.85)		-0.398*** (-13.92)
<i>REV</i>		-0.036*** (-9.52)		-0.036*** (-9.49)		-0.036*** (-9.52)						
<i>REVA</i>								-0.045*** (-12.47)		-0.045*** (-12.43)		-0.045*** (-12.49)
Constant	0.619*** (2.68)	2.022*** (7.14)	0.620*** (2.85)	2.052*** (7.24)	0.604*** (2.70)	2.040*** (7.17)	0.034 (1.02)	1.149*** (10.35)	0.042 (1.08)	1.168*** (10.19)	0.029 (0.82)	1.153*** (10.22)
R^2	0.002	0.090	0.006	0.090	0.005	0.090	0.001	0.034	0.002	0.034	0.002	0.034

Table IA.2: Fama-MacBeth regressions using $E(ISKEW)$

The table reports the time-series averages of the slope coefficients and their t -values from Fama-MacBeth regressions of excess stock returns or risk-adjusted stock returns on expected idiosyncratic skewness $E(ISKEW)$ and other control variables from August 1963 to December 2015.

$$(1) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}E(ISKEW_{i,t}) + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return on stock i and the one-month T-bill rate at time $t+1$ or the risk-adjusted return on stock i at $t+1$, which is adjusted for the Fama-French three factors; and $X_{i,t}$ is a set of control variables. We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. For columns (1)-(4), the dependent variable is excess return (R), and risk-adjusted return (RA) is the dependent variable for columns (5)-(8). Significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

	Panel A: $E(ISKEW)$ following Bali, Cakici, and Whitelaw (2011)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R	R	R	R	RA	RA	RA	RA
$E(ISKEW)$	0.085 (0.37)	0.515 (1.06)	1.647*** (2.76)	0.596 (0.18)	0.210* (1.65)	2.303*** (4.88)	2.998*** (5.07)	1.688** (2.32)
$SIZE$		-0.099 (-1.51)	-0.010 (-0.14)	-0.258 (-1.14)		0.106** (1.98)	0.159** (2.44)	0.047 (0.62)
BM		0.246*** (3.73)	0.128* (1.78)	0.226 (1.24)		-0.134** (-2.36)	-0.218*** (-3.33)	-0.189*** (-2.70)
MOM		0.010*** (7.62)	0.012*** (7.31)	0.015 (1.20)		0.010*** (6.96)	0.011*** (6.76)	0.009*** (4.93)
$TURN$		-0.072 (-1.35)	0.032 (0.58)	0.161 (0.42)		0.145*** (3.09)	0.202*** (3.92)	0.148** (2.48)
$ILLIQ$		-0.003 (-0.16)	-0.001 (-0.06)	0.091** (2.06)		-0.032 (-1.25)	-0.032 (-1.06)	-0.028 (-0.91)
β		0.787*** (3.66)	0.693*** (3.10)	0.230 (0.19)				
MAX		-0.127*** (-14.11)	-0.046*** (-3.66)	0.049** (2.76)		-0.135*** (-13.81)	-0.083*** (-6.52)	0.005 (0.39)
$IVOL$			-0.406*** (-10.12)	-0.791*** (-2.87)			-0.263*** (-5.41)	-0.424*** (-8.03)
REV				-0.027* (-1.67)				
$REVA$								-0.043*** (-9.67)
Constant	0.600*** (3.06)	1.191** (2.31)	0.570 (0.95)	2.426 (1.30)	-0.038 (-0.61)	-1.085** (-2.27)	-1.557*** (-2.61)	-0.538 (-0.77)
R^2	0.016	0.084	0.086	0.090	0.006	0.031	0.034	0.039

Table IA.2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R	R	R	R	RA	RA	RA	RA
<i>E(ISKEW)</i>	0.416* (1.85)	1.275*** (3.50)	3.033*** (5.40)	-0.650 (-0.56)	0.461*** (3.64)	1.935*** (5.65)	3.303*** (6.75)	2.172*** (3.41)
<i>SIZE</i>		-0.055 (-1.12)	0.080 (1.25)	-0.191* (-1.67)		0.005 (0.14)	0.168*** (3.27)	0.089 (1.37)
<i>BM</i>		0.157** (2.57)	0.006 (0.09)	0.134 (1.46)		-0.023 (-0.53)	-0.239*** (-3.96)	-0.198*** (-3.14)
<i>MOM</i>		0.010*** (7.56)	0.012*** (8.18)	0.009*** (3.73)		0.010*** (7.74)	0.011*** (7.25)	0.009*** (5.42)
<i>TURN</i>		0.014 (0.27)	0.223*** (3.38)	-0.065 (-0.55)		0.027 (0.50)	0.211*** (4.35)	0.160*** (2.83)
<i>ILLIQ</i>		-0.015 (-0.79)	-0.005 (-0.22)	0.037 (1.32)		-0.009 (-0.52)	-0.023 (-1.01)	0.002 (0.07)
β		0.513*** (2.39)	0.199 (0.81)	0.778** (2.48)		0.341** (2.13)		
<i>MAX</i>		-0.128*** (-14.33)	-0.041*** (-2.86)	0.071*** (3.51)		-0.132*** (-14.82)	-0.065*** (-5.62)	0.012 (1.01)
<i>IVOL</i>			-0.488*** (-9.64)	-0.539*** (-7.50)			-0.364*** (-7.80)	-0.482*** (-9.99)
<i>REV</i>				-0.038*** (-6.09)				
<i>REVA</i>								-0.036*** (-8.37)
Constant	0.572*** (2.87)	0.823*** (2.06)	-0.112 (-0.21)	2.406** (2.18)	-0.083 (-1.33)	-0.375 (-1.24)	-1.468*** (-3.15)	-0.692 (-1.18)
R ²	0.017	0.084	0.087	0.090	0.006	0.041	0.035	0.040

Table IA.3: Fama-MacBeth regressions using moving average estimates

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess stock returns on various pricing variables (see first column) using monthly data t ($t + 1$) from July (August) 1963 to November (December) 2015.

$$(2) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t} IA_{i,t}^{MA} + \lambda_{2,t} ISKEW_{i,t}^{MA} + \lambda_T X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return on stock i and the one-month T-bill rate at time $t + 1$; $IA_{i,t}^{MA}$ is either IE_φ and IS_φ estimated by the moving average method for stock i at t ; $ISKEW_{i,t}^{MA}$ denotes $ISKEW_{i,t}$ estimated by the moving average method for stock i at t ; and $X_{i,t}$ is a set of control variables. We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Variable definitions are provided in Appendix B. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
IE_φ^{MA}	-4.087*** (-2.62)	-3.929** (-2.22)	-5.755*** (-5.85)	-5.863*** (-5.92)	-4.957*** (-4.96)	-0.728*** (-2.89)	-0.651** (-2.29)	-1.008*** (-5.01)	-1.031*** (-5.11)	-0.918*** (-4.58)
IS_φ^{MA}							0.054 (0.74)	-0.073** (-1.77)	-0.061* (-1.64)	-0.057 (-1.64)
$ISKEW^{MA}$		0.051 (0.71)	-0.079** (-2.25)	-0.068* (-1.96)	-0.060* (-1.70)			-0.208*** (-5.27)	-0.207*** (-5.32)	-0.199*** (-5.08)
$SIZE$			-0.207*** (-5.25)	-0.205*** (-5.29)	-0.198*** (-5.06)			0.245** (4.59)	0.247*** (4.62)	0.207*** (3.73)
BM			0.244*** (4.58)	0.246*** (4.61)	0.201*** (3.73)			0.010*** (6.84)	0.010*** (6.75)	0.009*** (5.91)
MOM			0.010*** (6.97)	0.010*** (6.89)	0.009*** (6.03)			-0.016 (-0.47)	-0.030 (-0.85)	-0.001 (-0.03)
$TURN$			-0.016 (-0.47)	-0.030 (-0.86)	-0.001 (-0.03)			0.035** (2.40)	0.026* (1.80)	0.032** (2.25)
$ILLIQ$			0.035** (2.40)	0.026* (1.87)	0.033** (2.34)			0.869*** (4.33)	0.803*** (4.08)	0.728*** (3.62)
β			0.867*** (4.33)	0.800*** (4.06)	0.727*** (3.62)			-0.022** (-2.10)	-0.042*** (-4.10)	0.038*** (4.94)
MAX			-0.019* (-1.80)	-0.039*** (-3.82)	0.040*** (5.24)					
VOL			-0.418*** (-10.28)							
$IVOL$				-0.334*** (-9.27)	-0.511*** (-16.62)					
REV					-0.037*** (-9.70)					
Constant	0.650*** (2.81)	0.632*** (2.88)	2.107*** (7.39)	2.064*** (7.42)	2.048*** (7.24)	0.644*** (2.78)	0.627*** (2.85)	2.120*** (7.44)	2.078*** (7.47)	2.060*** (7.28)
R^2	0.001	0.006	0.086	0.086	0.091	0.001	0.006	0.087	0.086	0.091

Table IA.4: Fama-MacBeth regressions with 24 Newey-West lags

The table reports the time-series averages of the slope coefficients and their t -values from Fama-MacBeth regressions of excess stock returns (Panel A) and risk-adjusted stock returns (Panel B) on various pricing variables (see first column) using monthly data t ($t + 1$) from July (August) 1963 to November (December) 2015.

$$(3) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}ISKREW_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return on stock i and the one-month T-bill rate at time $t + 1$ or the risk-adjusted return on stock i at $t + 1$, which is adjusted for the Fama-French three factors; $IA_{i,t}$ is either $IE_{\varphi,i,t}$ or $IS_{\varphi,i,t}$ at time t for stock i ; and $X_{i,t}$ is a set of control variables. We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with 24 lags. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Excess return											
<i>ISKEW</i>	0.012 (0.36)			0.004 (0.10)	-0.030 (-1.39)	-0.025 (-1.18)	-0.019 (-0.86)	0.012 (0.35)	-0.020 (-0.96)	-0.015 (-0.73)	-0.010 (-0.48)
<i>IE_φ</i>		-3.866*** (-2.87)		-4.102*** (-2.72)	-4.601*** (-5.30)	-4.637*** (-5.26)	-4.003*** (-4.31)				
<i>IS_φ</i>			-0.863*** (-2.48)					-0.894** (-2.56)	-1.032*** (-4.52)	-1.034*** (-4.47)	-0.884*** (-3.66)
<i>SIZE</i>					-0.204*** (-4.64)	-0.203*** (-4.64)	-0.196*** (-4.45)		-0.205*** (-4.65)	-0.204*** (-4.66)	-0.196*** (-4.46)
<i>BM</i>					0.253*** (4.23)	0.254*** (4.25)	0.210*** (3.49)		0.252*** (4.24)	0.254*** (4.26)	0.211*** (3.51)
<i>MOM</i>					0.009*** (6.17)	0.009*** (6.11)	0.009*** (5.43)		0.009*** (6.12)	0.009*** (6.06)	0.009*** (5.39)
<i>TURN</i>					-0.014 (-0.31)	-0.027 (-0.61)	0.001 (0.02)		-0.014 (-0.33)	-0.028 (-0.63)	-0.000 (-0.01)
<i>ILLIQ</i>					0.035* (1.84)	0.027 (1.51)	0.033* (1.85)		0.035* (1.85)	0.027 (1.52)	0.034* (1.85)
β					0.879*** (3.81)	0.813*** (3.58)	0.745*** (3.18)		0.884*** (3.83)	0.818*** (3.60)	0.750*** (3.20)
<i>MAX</i>					-0.019 (-1.37)	-0.039*** (-2.64)	0.037*** (3.93)		-0.022 (-1.58)	-0.041*** (-2.85)	0.035*** (3.74)
<i>VOL</i>					-0.419*** (-8.80)				-0.418*** (-8.79)		
<i>IVOL</i>						-0.337*** (-7.56)	-0.505*** (-12.22)			-0.336*** (-7.59)	-0.504*** (-12.37)
<i>REV</i>							-0.035*** (-7.75)				-0.035*** (-7.69)
Constant	0.644*** (3.23)	0.664*** (3.22)	0.659*** (3.19)	0.657*** (3.32)	2.087*** (7.36)	2.047*** (7.39)	2.028*** (7.20)	0.648*** (3.27)	2.091*** (7.38)	2.052*** (7.41)	2.032*** (7.22)
R^2	0.003	0.002	0.001	0.005	0.086	0.086	0.090	0.004	0.086	0.086	0.090

Table IA.4 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel B: Risk-adjusted return											
<i>ISKEW</i>	-0.020 (-0.89)			-0.027 (-1.13)	-0.024 (-1.20)	-0.025 (-1.24)	-0.023 (-1.10)	-0.022 (-0.92)	-0.018 (-0.91)	-0.019 (-0.95)	-0.018 (-0.88)
<i>IE_φ</i>		-2.862*** (-2.94)		-3.232*** (-3.14)	-3.299*** (-4.32)	-3.305*** (-4.33)	-2.790*** (-3.36)				
<i>IS_φ</i>			-0.695*** (-3.14)					-0.759*** (-3.25)	-0.792*** (-4.37)	-0.788*** (-4.33)	-0.658*** (-3.38)
<i>SIZE</i>					-0.128*** (-9.37)	-0.131*** (-9.35)	-0.123*** (-8.45)		-0.128*** (-9.48)	-0.131*** (-9.45)	-0.123*** (-8.56)
<i>BM</i>					0.052 (1.16)	0.049 (1.11)	-0.005 (-0.11)		0.053 (1.18)	0.050 (1.13)	-0.004 (-0.09)
<i>MOM</i>					0.009*** (5.83)	0.009*** (5.74)	0.008*** (5.08)		0.009*** (5.79)	0.009*** (5.71)	0.008*** (5.06)
<i>TURN</i>					0.124*** (2.86)	0.121*** (2.68)	0.130*** (2.81)		0.124*** (2.87)	0.121*** (2.69)	0.130*** (2.81)
<i>ILLIQ</i>					0.035** (2.09)	0.038** (2.18)	0.048*** (2.85)		0.036** (2.08)	0.038** (2.18)	0.048*** (2.85)
<i>MAX</i>					-0.064*** (-4.28)	-0.062*** (-4.70)	0.032*** (3.71)		-0.066*** (-4.46)	-0.064*** (-4.88)	0.030*** (3.54)
<i>VOL</i>					-0.172*** (-4.44)				-0.170*** (-4.37)		
<i>IVOL</i>						-0.183*** (-4.64)	-0.398*** (-10.75)		-0.397*** (-10.79)	-0.182*** (-4.63)	-0.397*** (-10.79)
<i>REVA</i>							-0.045*** (-10.36)				-0.045*** (-10.30)
Constant	0.056 (1.25)	0.056 (1.34)	0.054 (1.28)	0.066 (1.48)	1.238*** (9.62)	1.262*** (9.83)	1.175*** (8.65)	0.061 (1.37)	1.244*** (9.67)	1.268*** (9.90)	1.183*** (8.73)
<i>R</i> ²	0.002	0.001	0.001	0.003	0.030	0.029	0.035	0.003	0.030	0.029	0.035

Table IA.5: Fama-MacBeth regressions with $ISKEW$, IE_ϕ , and IS_ϕ estimated from 6 months daily returns

The table reports the time-series averages of the slope coefficients and their t -values from Fama-MacBeth regressions of excess stock returns on various pricing variables (see first column) from August 1963 to December 2015.

$$(4) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}ISKEW_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is excess return of stock i at time $t + 1$, $IA_{i,t}$ is either $IE_{\phi,i,t}$ or $IS_{\phi,i,t}$ at time t for stock i , and $X_{i,t}$ is a set of control variables. We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
$ISKEW$	-0.007 (-0.25)			-0.016 (-0.57)	-0.061*** (-3.60)	-0.051*** (-3.08)	-0.042** (-2.50)	-0.011 (-0.40)	-0.052*** (-3.05)	-0.042** (-2.51)	-0.036** (-2.11)
IE_ϕ		-2.417*** (-2.79)		-2.748*** (-2.90)	-3.867*** (-6.77)	-3.878*** (-6.78)	-2.953*** (-5.14)				
IS_ϕ			-0.429** (-2.30)					-0.463** (-2.37)	-0.666*** (-4.52)	-0.665*** (-4.53)	-0.503*** (-3.42)
$SIZE$					-0.206*** (-5.19)	-0.204*** (-5.24)	-0.197*** (-5.01)		-0.209*** (-5.27)	-0.208*** (-5.34)	-0.200*** (-5.10)
BM					0.257*** (4.78)	0.258*** (4.80)	0.215*** (3.96)		0.256*** (4.76)	0.257*** (4.78)	0.214*** (3.95)
MOM					0.010*** (7.07)	0.010*** (6.97)	0.009*** (6.08)		0.010*** (6.93)	0.010*** (6.83)	0.009*** (6.00)
$TURN$					-0.017 (-0.49)	-0.031 (-0.89)	-0.003 (-0.09)		-0.014 (-0.39)	-0.027 (-0.77)	-0.001 (-0.02)
$ILLIQ$					0.036** (2.42)	0.027* (1.91)	0.033** (2.36)		0.036** (2.48)	0.028** (1.98)	0.034** (2.42)
β					0.876*** (4.38)	0.807*** (4.10)	0.740*** (3.68)		0.890*** (4.44)	0.822*** (4.17)	0.754*** (3.75)
MAX					-0.013 (-1.23)	-0.034*** (-3.24)	0.042*** (5.36)		-0.021** (-1.99)	-0.041*** (-3.95)	0.035*** (4.47)
VOL					-0.430*** (-10.53)				-0.428*** (-10.39)		
$IVOL$						-0.345*** (-9.47)	-0.512*** (-16.49)			-0.346*** (-9.42)	-0.512*** (-16.43)
REV							-0.035*** (-9.31)				-0.035*** (-9.22)
Constant	0.653*** (2.86)	0.662*** (2.86)	0.659*** (2.84)	0.662*** (2.91)	2.096*** (7.37)	2.055*** (7.41)	2.036*** (7.22)	0.658*** (2.89)	2.127*** (7.48)	2.091*** (7.54)	2.067*** (7.33)
R^2	629	629	629	629	629	629	629	629	629	629	629

Table IA.6: Portfolios by size, book-to-market ratios, and momentum

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess portfolio returns or risk-adjusted returns on various pricing variables (see first column) using monthly data $t(t+1)$ from July (August) 1963 to November (December) 2015. For columns (1)-(3), the dependent variable is the excess return (R). The risk-adjusted return (RA) is the dependent variable for columns (4)-(6). 125 portfolios are formed by sorting on size, book-to-market ratio, and momentum independently each month. Variable definitions are provided in Appendix B. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	R	R	R	RA	RA	RA
$ISKEW$	-0.017 (-0.14)			-0.085 (-0.83)		
IE_{φ}		-14.282* (-1.81)			-16.969*** (-2.83)	
IS_{φ}			-3.733* (-1.70)			-4.479*** (-2.67)
Constant	0.450** (2.21)	0.529*** (2.67)	0.509** (2.53)	-0.242*** (-3.67)	-0.206*** (-4.04)	-0.228*** (-4.64)
R^2	0.071	0.037	0.030	0.064	0.030	0.024

Table IA.7: Portfolio sorted by *SIZE* and asymmetry measures

The table reports the average returns and their *t*-values for quintile portfolios firstly sorted by *SIZE* and then by *ISKEW*, *IE_φ* or *IS_φ* from August 1963 to December 2015. *SIZE*1 and *SIZE*5 denote the lowest and highest quintiles for *SIZE*, and *P*1 and *P*5 denote the lowest and highest quintiles for *ISKEW*, *IE_φ* and *IS_φ*, respectively. Significance at the 1% and 5% levels is indicated by *** and **, respectively.

Proxy	<i>ISKEW</i>					<i>IE_φ</i>					<i>IS_φ</i>					
	P1	P5	P5-P1	P1	P5	P1	P5	P5-P1	P1	P5	P1	P5	P5-P1	P1	P5	P5-P1
<i>SIZE</i> 1	0.707***	0.474**	-0.232***	0.809***	0.607***	0.835***	0.678***	-0.202***	0.883***	0.678***	0.835***	0.678***	-0.157**	0.835***	0.678***	-0.157**
t-stat	(3.39)	(2.15)	(-2.69)	(3.81)	(2.79)	(3.78)	(3.01)	(-2.77)	(3.78)	(3.01)	(3.78)	(3.01)	(-2.19)	(3.78)	(3.01)	(-2.19)
<i>SIZE</i> 2	0.641***	0.557**	-0.083	0.753***	0.517**	0.836***	0.543**	-0.236***	0.836***	0.543**	0.836***	0.543**	-0.293***	0.836***	0.543**	-0.293***
t-stat	(2.76)	(2.31)	(-0.92)	(3.30)	(2.07)	(3.53)	(2.14)	(-2.91)	(3.53)	(2.14)	(3.53)	(2.14)	(-3.94)	(3.53)	(2.14)	(-3.94)
<i>SIZE</i> 3	0.686***	0.568**	-0.118	0.734***	0.605**	0.760***	0.582**	-0.129	0.760***	0.582**	0.760***	0.582**	-0.178**	0.760***	0.582**	-0.178**
t-stat	(2.97)	(2.33)	(-1.21)	(3.32)	(2.45)	(3.25)	(2.32)	(-1.56)	(3.25)	(2.32)	(3.25)	(2.32)	(-2.27)	(3.25)	(2.32)	(-2.27)
<i>SIZE</i> 4	0.604***	0.649***	0.045	0.732***	0.559**	0.747***	0.571**	-0.173**	0.747***	0.571**	0.747***	0.571**	-0.176**	0.747***	0.571**	-0.176**
t-stat	(2.83)	(2.85)	(0.47)	(3.59)	(2.41)	(3.57)	(2.46)	(-2.16)	(3.57)	(2.46)	(3.57)	(2.46)	(-2.46)	(3.57)	(2.46)	(-2.46)
<i>SIZE</i> 5	0.499***	0.564***	0.065	0.529***	0.502***	0.586***	0.519***	-0.028	0.586***	0.519***	0.586***	0.519***	-0.067	0.586***	0.519***	-0.067
t-stat	(2.65)	(2.89)	(0.79)	(2.89)	(2.59)	(3.15)	(2.67)	(-0.45)	(3.15)	(2.67)	(3.15)	(2.67)	(-1.27)	(3.15)	(2.67)	(-1.27)
Avg(<i>SIZE</i> 1- <i>SIZE</i> 5)	0.627***	0.562***	-0.065	0.711***	0.558**	0.753***	0.579***	-0.154***	0.753***	0.579***	0.753***	0.579***	-0.174***	0.753***	0.579***	-0.174***
t-stat	(3.07)	(2.61)	(-0.95)	(3.57)	(2.56)	(3.64)	(2.62)	(-2.97)	(3.64)	(2.62)	(3.64)	(2.62)	(-4.01)	(3.64)	(2.62)	(-4.01)

Table IA.8: Asymmetries and expected returns

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess stock returns or risk-adjusted stock returns on various pricing variables (listed in the first column) using monthly data t ($t + 1$) from July (August) 1963 to November (December) 2015.

$$(5) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}ISKREW_{i,t} + \Lambda_1 X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return and the one-month T-bill rate at time $t + 1$, or the risk-adjusted return, which is adjusted for the Fama-French three factors on stock i at time $t + 1$; $IA_{i,t}$ is either $IS^2_{1,5}$ or $IE^2_{1,5}$ for stock i at time t (using the observations from 1.5 to 2 standard deviations above and below the mean); and $X_{i,t}$ is a set of control variables. For columns (1)-(6), the dependent variable is the excess return (R). The risk-adjusted return (RA) is the dependent variable for columns (7)-(12). We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Variable definitions are provided in the Appendix of the paper. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	R	R	R	R	R	R	RA	RA	RA	RA	RA	RA
<i>ISKEW</i>			0.010 (0.33)	-0.012 (-0.69)	0.012 (0.33)	-0.024 (-1.27)			-0.022 (-1.15)	-0.018 (-1.07)	-0.027 (-1.25)	-0.023 (-1.24)
$IE^2_{1,5}$	-2.722** (-2.07)		-2.753* (-1.95)	-2.651*** (-3.01)			-1.861* (-1.81)		-2.107** (-2.02)	-1.531* (-1.83)		
$IS^2_{1,5}$		-0.063* (-1.89)			-0.062* (-1.74)	-0.066*** (-2.94)		-0.038 (-1.46)			-0.043 (-1.61)	-0.034 (-1.55)
<i>SIZE</i>				-0.194*** (-4.95)		-0.205*** (-5.17)				-0.122*** (-9.06)		-0.127*** (-9.50)
<i>BM</i>				0.212*** (3.92)		0.206*** (3.80)				-0.003 (-0.07)		-0.007 (-0.18)
<i>MOM</i>				0.009*** (5.89)		0.009*** (5.75)				0.008*** (5.83)		0.008*** (5.71)
<i>TURN</i>				-0.003 (-0.09)		0.005 (0.15)				0.126*** (3.73)		0.135*** (3.96)
<i>ILLIQ</i>				0.033*** (2.32)		0.035*** (2.30)				0.047*** (3.20)		0.050*** (3.15)
β				0.745*** (3.71)		0.767*** (3.80)						
<i>MAX</i>				0.037*** (4.93)		0.028*** (3.66)				0.032*** (4.31)		0.025*** (3.18)
<i>IVOL</i>				-0.506*** (-16.59)		-0.515*** (-16.56)				-0.399*** (-13.79)		-0.404*** (-13.74)
<i>REV</i>				-0.035*** (-9.39)		-0.035*** (-9.29)						
<i>REVA</i>										-0.045*** (-12.31)		-0.045*** (-12.12)
Constant	0.655*** (2.83)	0.658*** (2.84)	0.644*** (2.85)	2.019*** (7.14)	0.648*** (2.88)	2.109*** (7.40)	0.050 (1.54)	0.048 (1.47)	0.057 (1.62)	1.171*** (10.31)	0.058 (1.63)	1.230*** (10.63)
R^2	0.001	0.001	0.004	0.090	0.004	0.091	0.001	0.001	0.002	0.035	0.002	0.036

Table IA.9: Quintile portfolios

The table reports the equal-weighted averages of monthly stock returns, the CAPM alpha, and Fama-French 3-factor alpha, as well as their t-values, for quintile portfolios sorted by $IE_{1.5}^2$ and $IS_{1.5}^2$ in the previous month based on data t ($t + 1$) from July (August) 1963 to November (December) 2015 (using the observations from 1.5 to 2 standard deviations above and below the mean). Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Portfolio	$IE_{1.5}^2$			$IS_{1.5}^2$		
	Excess return (%)	CAPM alpha (%)	FF3 alpha (%)	Excess return (%)	CAPM alpha (%)	FF3 alpha (%)
1(lowest)	0.686*** (3.39)	0.172* (1.92)	-0.034 (-0.75)	0.695*** (3.38)	0.169* (1.94)	-0.031 (-0.72)
2	0.675*** (3.26)	0.141* (1.66)	-0.042 (-1.06)	0.698*** (3.36)	0.162* (1.89)	-0.030 (-0.70)
3	0.658*** (3.12)	0.115 (1.32)	-0.068* (-1.83)	0.614*** (2.93)	0.075 (0.86)	-0.105*** (-2.77)
4	0.648*** (3.02)	0.095 (1.07)	-0.080** (-2.02)	0.655*** (3.07)	0.103 (1.19)	-0.073* (-1.88)
5(highest)	0.586*** (2.70)	0.033 (0.35)	-0.134*** (-3.30)	0.613*** (2.78)	0.049 (0.52)	-0.120*** (-2.89)
5-1 spread	-0.100** (-2.45)	-0.139*** (-3.58)	-0.100*** (-2.83)	-0.081** (-2.16)	-0.120*** (-3.41)	-0.090*** (-2.80)

Table IA.10: Fama-MacBeth regressions controlling for the financial distress measures

The table reports the time-series averages of the slope coefficients and their t-values from Fama-MacBeth regressions on various pricing variables (see first column) using monthly data $t(t+1)$ from January 1975 to December 2013.

$$(6) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}ISKREW_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return of stock i at time $t+1$, $IA_{i,t}$ is either $IE_{\varphi,i,t}$ or $IS_{\varphi,i,t}$ at time t for stock i , and $X_{i,t}$ is a set of control variables including $Oscore$ and P_CHS . We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Variable definitions are provided in Appendix B. Significance at the 1% and 5% levels is indicated by *** and **, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Oscore</i>	-0.090** (-2.31)	-0.095** (-2.41)	-0.215*** (-6.57)	-0.094** (-2.38)	-0.214*** (-6.38)					
<i>P_CHS</i>						-2.092*** (-4.50)	-1.855*** (-3.53)	-3.027*** (-6.45)	-1.942*** (-3.76)	-3.051*** (-6.24)
<i>ISKREW</i>			-0.033* (-1.74)		-0.030 (-1.54)			-0.032* (-1.66)		-0.028 (-1.40)
<i>IE_φ</i>		-5.121*** (-3.14)	-4.749*** (-4.49)				-5.223*** (-3.33)	-5.082*** (-4.92)		
<i>IS_φ</i>				-1.006** (-2.23)	-0.888*** (-3.01)				-0.947** (-2.22)	-0.983*** (-3.30)
<i>SIZE</i>			-0.291*** (-6.03)		-0.294*** (-6.05)			-0.250*** (-5.44)		-0.254*** (-5.51)
<i>BM</i>			0.352*** (5.84)		0.350*** (5.83)			0.275*** (4.53)		0.272*** (4.49)
<i>MOM</i>			0.009*** (5.27)		0.009*** (5.26)			0.008*** (4.74)		0.008*** (4.72)
<i>TURN</i>			-0.032 (-0.81)		-0.032 (-0.80)			-0.014 (-0.36)		-0.016 (-0.40)
<i>ILLIQ</i>			-0.001 (-0.17)		-0.001 (-0.21)			-0.000 (-0.01)		-0.000 (-0.01)
β			0.969*** (3.65)		0.980*** (3.68)			1.008*** (3.84)		1.023*** (3.89)
<i>MAX</i>			0.046*** (4.26)		0.040*** (3.76)			0.041*** (3.90)		0.038*** (3.66)
<i>IVOL</i>			-0.454*** (-11.70)		-0.450*** (-11.68)			-0.421*** (-10.86)		-0.423*** (-11.09)
<i>REV</i>			-0.032*** (-7.85)		-0.031*** (-7.79)			-0.033*** (-8.20)		-0.032*** (-8.14)
Constant	0.781*** (2.75)	0.785*** (2.81)	2.506*** (7.17)	0.777*** (2.77)	2.519*** (7.21)	0.988*** (3.71)	0.989*** (3.80)	2.469*** (7.06)	0.984*** (3.76)	2.488*** (7.13)
R^2	0.006	0.008	0.086	0.008	0.086	0.005	0.007	0.086	0.007	0.087

Table IA.11: Fama-MacBeth regressions in different market volatility regimes

The table reports the time-series averages of the slope coefficients and their t -values from Fama-MacBeth regressions of excess stock returns on $ISKEW$ (Panel A), IE_φ (Panel B), IS_φ (Panel C), and other firm characteristics (see first column) from August 1963 to December 2014 in high and low market volatility periods.

$$(7) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return of stock i at time $t+1$, $IA_{i,t}$ is $ISKEW$ (Panel A), IE_φ (Panel B), or IS_φ (Panel C) at time t for stock i and $X_{i,t}$ is a set of control variables. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>ISKEW</i>	-0.145*** (-2.70)	-0.077** (-2.46)	-0.078** (-2.38)	-0.073** (-2.31)	0.066** (2.21)	0.040** (2.33)	0.003 (0.19)	0.009 (0.52)
<i>SIZE</i>		-0.174** (-2.20)	-0.208*** (-2.65)	-0.204*** (-2.69)		-0.154*** (-4.13)	-0.209*** (-5.65)	-0.208*** (-5.69)
<i>BM</i>		0.262** (2.25)	0.254** (2.17)	0.256** (2.19)		0.292*** (6.34)	0.275*** (5.95)	0.276*** (5.98)
<i>MOM</i>		0.002 (0.64)	0.003 (0.83)	0.003 (0.85)		0.011*** (8.37)	0.012*** (8.80)	0.011*** (8.66)
<i>TURN</i>		0.212*** (3.01)	0.217*** (3.02)	0.208*** (2.93)		-0.153*** (-4.75)	-0.099*** (-3.09)	-0.114*** (-3.55)
<i>ILLIQ</i>		-0.062*** (-4.36)	-0.051*** (-3.20)	-0.056*** (-3.49)		0.005 (0.36)	0.067*** (4.11)	0.057*** (3.54)
β		0.778* (1.66)	0.890* (1.88)	0.838* (1.77)		0.776*** (4.65)	0.935*** (5.54)	0.865*** (5.14)
<i>MAX</i>		-0.116*** (-10.61)	-0.084*** (-4.55)	-0.097*** (-5.10)		-0.118*** (-18.68)	0.002 (0.17)	-0.020** (-1.98)
<i>VOL</i>			-0.165*** (-2.27)				-0.512*** (-13.09)	
<i>IVOL</i>				-0.110 (-1.65)				-0.420*** (-11.25)
Constant	1.218** (2.58)	2.328*** (4.42)	2.591*** (4.94)	2.549*** (5.08)	0.468** (2.05)	1.369*** (5.08)	1.922*** (7.12)	1.881*** (7.09)
R^2	0.003	0.106	0.109	0.109	0.003	0.074	0.077	0.077

Table IA.11 (continued)

	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>IE_φ</i>	-4.940 (-1.31)	-6.349*** (-3.38)	-5.884*** (-3.12)	-5.844*** (-3.10)	-3.464*** (-3.01)	-4.191*** (-5.64)	-3.500*** (-4.70)	-3.632*** (-4.85)
<i>SIZE</i>		-0.173** (-2.17)	-0.200** (-2.55)	-0.197** (-2.59)		-0.159*** (-4.21)	-0.210*** (-5.65)	-0.209*** (-5.69)
<i>BM</i>		0.263** (2.26)	0.257** (2.19)	0.259** (2.21)		0.290*** (6.28)	0.271*** (5.88)	0.273*** (5.91)
<i>MOM</i>		0.002 (0.52)	0.003 (0.72)	0.003 (0.73)		0.011*** (8.72)	0.012*** (8.99)	0.012*** (8.87)
<i>TURN</i>		0.221*** (3.12)	0.228*** (3.19)	0.220*** (3.11)		-0.153*** (-4.73)	-0.094*** (-2.95)	-0.110*** (-3.42)
<i>ILLIQ</i>		-0.063*** (-4.36)	-0.050*** (-3.11)	-0.054*** (-3.39)		0.008 (0.51)	0.065*** (4.06)	0.055*** (3.49)
<i>β</i>		0.776 (1.64)	0.863* (1.82)	0.823* (1.74)		0.788*** (4.69)	0.936*** (5.54)	0.867*** (5.14)
<i>MAX</i>		-0.118*** (-10.74)	-0.092*** (-5.10)	-0.104*** (-5.48)		-0.117*** (-18.50)	-0.001 (-0.07)	-0.022** (-2.21)
<i>VOL</i>			-0.139* (-1.96)				-0.504*** (-13.11)	
<i>IVOL</i>			-0.090 (-1.36)					-0.414*** (-11.21)
Constant	1.177** (2.51)	2.309*** (4.39)	2.510*** (4.83)	2.475*** (4.96)	0.510** (2.19)	1.400*** (5.17)	1.926*** (7.12)	1.887*** (7.09)
<i>R</i> ²	0.002	0.106	0.109	0.109	0.001	0.074	0.076	0.076

Table IA.11 (continued)

	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>IS_φ</i>	-1.575* (-1.66)	-1.557*** (-3.08)	-1.489*** (-2.88)	-1.466*** (-2.82)	-0.600** (-2.27)	-0.908*** (-4.40)	-0.811*** (-3.93)	-0.828*** (-4.00)
<i>SIZE</i>		-0.175** (-2.20)	-0.202** (-2.59)	-0.200*** (-2.63)		-0.160*** (-4.25)	-0.211*** (-5.68)	-0.211*** (-5.72)
<i>BM</i>		0.261** (2.24)	0.255** (2.17)	0.257** (2.19)		0.290*** (6.27)	0.271*** (5.87)	0.273*** (5.89)
<i>MOM</i>		0.002 (0.52)	0.003 (0.73)	0.003 (0.74)		0.011*** (8.74)	0.012*** (9.01)	0.012*** (8.89)
<i>TURN</i>		0.218*** (3.04)	0.225*** (3.12)	0.217*** (3.05)		-0.153*** (-4.73)	-0.094*** (-2.92)	-0.109*** (-3.39)
<i>ILLIQ</i>		-0.063*** (-4.32)	-0.050*** (-3.12)	-0.055*** (-3.39)		0.008 (0.52)	0.066*** (4.10)	0.056*** (3.53)
<i>β</i>		0.791* (1.68)	0.875* (1.85)	0.834* (1.76)		0.793*** (4.71)	0.939*** (5.56)	0.870*** (5.16)
<i>MAX</i>		-0.121*** (-10.82)	-0.094*** (-5.22)	-0.106*** (-5.60)		-0.119*** (-18.80)	-0.003 (-0.25)	-0.023** (-2.37)
<i>VOL</i>			-0.139* (-1.95)				-0.505*** (-13.16)	
<i>IVOL</i>			-0.091 (-1.37)					-0.415*** (-11.27)
Constant	1.172** (2.49)	2.323*** (4.42)	2.530*** (4.87)	2.495*** (5.02)	0.505** (2.17)	1.409*** (5.20)	1.936*** (7.16)	1.899*** (7.13)
<i>R</i> ²	0.002	0.106	0.109	0.109	0.001	0.074	0.077	0.076

Table IA.12: Fama-MacBeth regressions for stocks with different *IVOL*

The table reports the time-series averages of the slope coefficients and their *t*-values from Fama-MacBeth regressions of excess stock returns on *ISKEW* (Panel A), *IE_φ* (Panel B), and *IS_φ* (Panel C) and other firm characteristics (see first column) from August 1963 to December 2015 for high and low *IVOL* stocks separately.

$$(8) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is excess return of stock i at time $t + 1$, $IA_{i,t}$ is *ISKEW* (Panel A), IE_{φ} (Panel B), or IS_{φ} (Panel C) at time t for stock i , and $X_{i,t}$ is a set of control variables. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>ISKEW</i>	-0.045* (-1.73)	-0.127*** (-5.60)	-0.005 (-0.24)	0.022 (0.96)	0.105*** (4.64)	-0.007 (-0.45)	0.004 (0.25)	0.003 (0.22)
<i>SIZE</i>		-0.176*** (-4.14)	-0.184*** (-4.30)	-0.169*** (-4.06)		-0.164*** (-5.00)	-0.184*** (-5.59)	-0.153*** (-4.81)
<i>BM</i>		0.344*** (6.71)	0.319*** (6.24)	0.290*** (5.81)		0.231*** (5.07)	0.205*** (4.53)	0.169*** (3.76)
<i>MOM</i>		0.012*** (9.20)	0.011*** (7.81)	0.010*** (7.21)		0.008*** (5.15)	0.008*** (4.76)	0.007*** (4.59)
<i>TURN</i>		-0.268*** (-7.08)	-0.149*** (-3.82)	-0.155*** (-4.11)		-0.011 (-0.37)	0.040 (1.40)	0.048* (1.70)
<i>ILLIQ</i>		-0.037** (-2.57)	-0.026* (-1.89)	-0.025* (-1.83)		0.024 (1.20)	0.035* (1.68)	0.027 (1.31)
β		0.822*** (4.88)	0.853*** (5.06)	0.831*** (4.98)		0.608*** (3.35)	0.757*** (4.09)	0.591*** (3.26)
<i>MAX</i>			-0.083*** (-13.89)	-0.069*** (-11.52)			-0.135*** (-13.43)	-0.043*** (-4.17)
<i>REV</i>				-0.016*** (-5.00)				-0.051*** (-12.82)
Constant	0.378 (1.48)	0.972*** (3.48)	1.406*** (4.96)	1.254*** (4.56)	0.822*** (4.48)	1.307*** (5.59)	1.736*** (7.23)	1.373*** (5.93)
R^2	0.003	0.071	0.074	0.080	0.003	0.084	0.086	0.092

Table IA.12 (continued)

Panel B: IE_φ	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IE_φ	-5.280*** (-3.58)	-6.292*** (-5.12)	-7.059*** (-5.70)	-6.944*** (-5.66)	-0.975 (-1.03)	-2.633*** (-3.61)	-2.501*** (-3.44)	-2.060*** (-2.86)
$SIZE$		-0.161*** (-3.75)	-0.184*** (-4.26)	-0.171*** (-4.07)		-0.164*** (-5.00)	-0.185*** (-5.60)	-0.154*** (-4.83)
BM		0.348*** (6.71)	0.319*** (6.19)	0.290*** (5.77)		0.230*** (5.03)	0.205*** (4.51)	0.169*** (3.75)
MOM		0.012*** (8.80)	0.011*** (7.96)	0.010*** (7.62)		0.008*** (5.14)	0.008*** (4.80)	0.007*** (4.63)
$TURN$		-0.264*** (-6.84)	-0.145*** (-3.65)	-0.155*** (-4.05)		-0.010 (-0.33)	0.040 (1.42)	0.048* (1.71)
$ILLIQ$		-0.036** (-2.42)	-0.025* (-1.79)	-0.024* (-1.76)		0.024 (1.17)	0.034* (1.67)	0.026 (1.27)
β		0.823*** (4.83)	0.859*** (5.05)	0.840*** (4.98)		0.611*** (3.37)	0.760*** (4.11)	0.592*** (3.27)
MAX			-0.083*** (-14.39)	-0.068*** (-11.65)			-0.134*** (-13.26)	-0.041*** (-4.02)
REV				-0.016*** (-4.87)				-0.051*** (-12.83)
Constant	0.368 (1.45)	0.865*** (3.08)	1.435*** (5.00)	1.299*** (4.66)	0.868*** (4.72)	1.301*** (5.58)	1.734*** (7.24)	1.371*** (5.94)
R^2	0.002	0.071	0.074	0.080	0.001	0.083	0.085	0.092

Table IA.12 (continued)

Panel C: IS_φ	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>IS$_\varphi$</i>	-1.219*** (-3.33)	-1.537*** (-4.69)	-1.611*** (-4.88)	-1.541*** (-4.71)	-0.019 (-0.07)	-0.439*** (-2.06)	-0.394* (-1.84)	-0.324 (-1.53)
<i>SIZE</i>		-0.163*** (-3.79)	-0.186*** (-4.31)	-0.174*** (-4.13)		-0.164*** (-4.98)	-0.185*** (-5.59)	-0.154*** (-4.82)
<i>BM</i>		0.345*** (6.65)	0.316*** (6.12)	0.288*** (5.71)		0.231*** (5.06)	0.206*** (4.54)	0.169*** (3.77)
<i>MOM</i>		0.012*** (8.84)	0.011*** (7.99)	0.010*** (7.66)		0.008*** (5.13)	0.008*** (4.80)	0.007*** (4.63)
<i>TURN</i>		-0.269*** (-6.93)	-0.148*** (-3.71)	-0.159*** (-4.14)		-0.011 (-0.39)	0.039 (1.36)	0.046* (1.65)
<i>ILLIQ</i>		-0.035*** (-2.38)	-0.024* (-1.75)	-0.024* (-1.73)		0.023 (1.14)	0.034 (1.64)	0.026 (1.26)
β		0.831*** (4.88)	0.868*** (5.09)	0.849*** (5.03)		0.609*** (3.35)	0.759*** (4.10)	0.591*** (3.27)
<i>MAX</i>			-0.085*** (-14.66)	-0.070*** (-11.91)			-0.135*** (-13.32)	-0.042*** (-4.10)
<i>REV</i>				-0.016*** (-4.77)				-0.051*** (-12.80)
Constant	0.360 (1.41)	0.865*** (3.08)	1.448*** (5.04)	1.313*** (4.70)	0.866*** (4.71)	1.301*** (5.57)	1.737*** (7.24)	1.374*** (5.95)
R^2	0.002	0.071	0.074	0.080	0.001	0.083	0.085	0.092

Table IA.13: Different sentiment regimes

The table reports the time-series averages of the slope coefficients and their t -values from Fama-MacBeth regressions of excess stock returns on $ISKEW$, IE_ϕ , or IS_ϕ , and other firm characteristics (see first column) from August 1965 to September 2015 in high and low sentiment periods.

$$(9) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is excess return of stock i at time $t + 1$, $IA_{i,t}$ is $ISKEW$, IE_ϕ , or IS_ϕ at time t for stock i and $X_{i,t}$ is a set of control variables. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	High						Low					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$ISKEW$	-0.238*** (-2.72)	-0.095* (-1.73)	-9.532** (-2.38)	-3.960* (-1.91)	-2.820*** (-3.07)	-1.544*** (-2.82)	0.185** (2.12)	0.127*** (2.95)	-0.062 (-0.02)	-3.188 (-1.53)	-0.172 (-0.24)	-0.854 (-1.55)
IE_ϕ												-0.438*** (-4.47)
IS_ϕ												-0.439*** (-4.48)
$SIZE$		-0.051 (-0.59)		-0.040 (-0.45)				-0.427*** (-4.38)				0.399*** (2.55)
BM		0.452*** (3.49)		0.456*** (3.52)		0.453*** (3.49)		0.401** (2.55)				0.007 (1.63)
MOM		0.013*** (3.00)		0.013*** (2.93)		0.013*** (2.94)		0.006 (1.41)				0.007 (1.63)
$TURN$		0.193** (2.26)		0.201** (2.35)		0.202** (2.37)		-0.130 (-1.27)				-0.130 (-1.28)
$ILLIQ$		0.024 (0.49)		0.023 (0.48)		0.024 (0.49)		-0.046 (-1.22)				-0.039 (-1.04)
β		-0.407 (-0.78)		-0.414 (-0.79)		-0.411 (-0.78)		1.522*** (3.60)				1.522*** (3.60)
MAX		-0.107*** (-3.97)		-0.115*** (-4.54)		-0.116*** (-4.58)		-0.128*** (-4.30)				-0.119*** (-4.23)
$IVOL$		-0.235** (-2.26)		-0.218** (-2.16)		-0.217** (-2.16)		-0.154 (-1.40)				-0.165 (-1.52)
Constant	-0.335 (-0.51)	1.633** (2.60)	-0.426 (-0.64)	1.533** (2.44)	-0.426 (-0.64)	1.548** (2.46)	0.940 (1.50)	2.448*** (3.61)	1.037 (1.60)	2.522*** (3.72)	1.041 (1.60)	2.534*** (3.73)
R^2	0.004	0.112	0.002	0.111	0.001	0.111	0.005	0.109	0.002	0.108	0.002	0.108

Table IA.14: Asymmetries and expected returns with the second term of this decomposition

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess stock returns or risk-adjusted stock returns on various pricing variables (listed in the first column) using monthly data t ($t+1$) from July (August) 1963 to November (December) 2015.

$$(10) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}U_1^i i,t + \Lambda_i X_{i,t} + \epsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return and the one-month T-bill rate at time $t+1$, or the risk-adjusted return, which is adjusted for the Fama-French three factors on stock i at time $t+1$; $IA_{i,t}$ is either IE_φ or IS_φ for stock i at time t ; U_1^i is defined due to the utility specification $u_1(W_1)$; and $X_{i,t}$ is a set of control variables. For columns (1)-(4), the dependent variable is the excess return (R). The risk-adjusted return (RA) is the dependent variable for columns (5)-(8). We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Variable definitions are provided in the Appendix of the paper. U_1^i are scaled by 10^{16} for ease of reading. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R	R	R	R	RA	RA	RA	RA
IE_φ	-4.134*** (-3.51)	-4.109*** (-5.08)	-0.904*** (-3.11)	-0.879*** (-4.10)	-3.003*** (-3.42)	-3.015*** (-3.94)	-0.706*** (-3.41)	-0.685*** (-3.40)
IS_φ			0.292 (0.57)	-0.017 (-0.06)	0.192 (0.51)	0.337 (1.01)	0.109 (0.30)	0.226 (0.70)
U_1^i	0.451 (0.88)	0.174 (0.54)		-0.010 (-0.02)		-0.026 (-1.56)		-0.020 (-1.19)
$ISKEW$		-0.196*** (-1.18)		-0.196*** (-4.99)		-0.122*** (-9.02)		-0.123*** (-9.05)
$SIZE$		-0.196*** (-4.98)		0.210*** (3.88)		-0.005 (-0.13)		-0.004 (-0.11)
BM		0.210*** (3.88)		0.009*** (5.92)		0.008*** (5.86)		0.008*** (5.84)
MOM		0.009*** (5.95)		-0.001 (-0.02)		0.129*** (3.81)		0.129*** (3.81)
$TURN$		0.000 (0.00)		0.034** (2.36)		0.048*** (3.22)		0.048*** (3.23)
$ILLIQ$		0.033** (2.34)		0.750*** (3.73)				
β		0.745*** (3.71)		0.035*** (4.67)		0.032*** (4.34)		0.030*** (4.06)
MAX		0.037*** (4.97)		-0.504*** (-16.63)		-0.398*** (-13.86)		-0.397*** (-13.85)
$IVOL$		-0.505*** (-16.63)		-0.035*** (-9.39)				
REV		-0.035*** (-9.39)						
$REVA$				2.034*** (7.19)		-0.045*** (-12.34)		-0.045*** (-12.27)
Constant	0.658*** (2.89)	2.029*** (7.17)	0.655*** (2.88)	2.034*** (7.19)	0.052 (1.59)	1.173*** (10.24)	0.051 (1.54)	1.180*** (10.31)
R^2	0.003	0.091	0.003	0.091	0.002	0.036	0.002	0.036

Table IA.15: Asymmetries and expected returns with the second term of this decomposition

The table reports the time-series averages of the slope coefficients and their t -values from the Fama-MacBeth regressions of excess stock returns or risk-adjusted stock returns on various pricing variables (listed in the first column) using monthly data t ($t + 1$) from July (August) 1963 to November (December) 2015.

$$(11) \quad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t}IA_{i,t} + \lambda_{2,t}U_2^i i,t + \Lambda_i X_{i,t} + \epsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return and the one-month T-bill rate at time $t + 1$, or the risk-adjusted return, which is adjusted for the Fama-French three factors on stock i at time $t + 1$; $IA_{i,t}$ is either IE_φ or IS_φ for stock i at time t ; U_2^i is defined due to the utility specification $u_2(W_1)$; and $X_{i,t}$ is a set of control variables. For columns (1)-(4), the dependent variable is the excess return (R). The risk-adjusted return (RA) is the dependent variable for columns (5)-(8). We adjust the Fama-MacBeth standard errors using the Newey and West (1987) correction with three lags. Variable definitions are provided in the Appendix of the paper. Significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R	R	R	R	RA	RA	RA	RA
IE_φ	-2.149** (-2.23)	-1.832** (-2.29)	-0.402* (-1.70)	-0.397* (-1.85)	-1.882** (-2.31)	-1.585** (-2.06)	-0.464** (-2.33)	-0.406* (-1.94)
IS_φ								
U_2^i	0.465** (2.55)	0.860*** (5.97)	0.477*** (2.60)	0.867*** (6.06)	0.406*** (3.16)	0.569*** (3.79)	0.420*** (3.16)	0.567*** (3.80)
$ISKEW$		0.017 (1.02)		0.020 (1.24)		-0.003 (-0.17)		-0.001 (-0.04)
$SIZE$		-0.216*** (-5.51)		-0.217*** (-5.53)		-0.131*** (-9.59)		-0.132*** (-9.62)
BM		0.197*** (3.62)		0.197*** (3.62)		-0.011 (-0.29)		-0.011 (-0.29)
MOM		0.011*** (7.24)		0.011*** (7.26)		0.009*** (6.36)		0.009*** (6.37)
$TURN$		0.009 (0.27)		0.009 (0.26)		0.141*** (4.23)		0.141*** (4.24)
$ILLIQ$		0.038*** (2.65)		0.038*** (2.65)		0.049*** (3.35)		0.049*** (3.36)
β		0.792*** (3.95)		0.797*** (3.98)		0.031*** (4.24)		0.030*** (4.04)
MAX		0.035*** (4.72)		0.033*** (4.49)		-0.374*** (-13.34)		-0.373*** (-13.30)
$IVOL$		-0.463*** (-15.67)		-0.461*** (-15.67)				
REV		-0.035*** (-9.16)		-0.034*** (-9.10)				
$REVA$						-0.045*** (-12.24)		-0.045*** (-12.21)
Constant	0.738*** (3.39)	2.053*** (7.26)	0.736*** (3.38)	2.061*** (7.29)	0.097*** (2.72)	1.195*** (10.31)	0.096*** (2.70)	1.204*** (10.37)
R^2	0.009	0.092	0.009	0.092	0.005	0.037	0.004	0.037