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 5×5×5 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)
$ISK_{0.75}$	0.070***	0.019					0.041**	0.022*				
	(2.77)	(1.58)					(2.39)	(1.78)				
$ISK_{0.99}$			0.032	-0.071					-0.008	-0.020		
			(0.26)	(-1.39)					(-0.13)	(-0.45)		
ISK_{INT}					0.105	-0.030					0.052	0.021
					(1.27)	(-0.86)					(1.15)	(0.69)
SIZE		-0.195***		-0.198***		-0.197***		-0.120***		-0.121***		-0.121***
		(-4.94)		(-5.02)		(-4.98)		(-9.08)		(-9.07)		(-9.05)
BM		0.212***		0.209***		0.208***		-0.002		-0.005		-0.004
		(3.90)		(3.87)		(3.84)		(-0.04)		(-0.13)		(-0.10)
MOM		0.008***		0.008***		0.008***		0.008***		0.008***		0.008***
		(5.80)		(5.90)		(5.88)		(5.70)		(5.73)		(5.70)
TURN		-0.007		-0.005		-0.005		0.124***		0.125***		0.124***
		(-0.19)		(-0.15)		(-0.15)		(3.64)		(3.67)		(3.67)
ILLIQ		0.030**		0.030**		0.029**		0.046***		0.046***		0.046***
		(2.14)		(2.13)		(2.04)		(3.10)		(3.07)		(3.07)
β		0.738***		0.748***		0.743***						
		(3.66)		(3.72)		(3.68)						
MAX		0.037***		0.039***		0.038***		0.031***		0.031***		0.031***
		(4.91)		(5.12)		(4.99)		(4.19)		(4.24)		(4.23)
IVOL		-0.509***		-0.512***		-0.509***		-0.398***		-0.399***		-0.398***
		(-16.66)		(-16.62)		(-16.68)		(-13.92)		(-13.85)		(-13.92)
REV		-0.036***		-0.036***		-0.036***						
		(-9.52)		(-9.49)		(-9.52)						
REVA								-0.045***		-0.045***		-0.045***
								(-12.47)		(-12.43)		(-12.49)
Constant	0.619***	2.022***	0.620***	2.052***	0.604***	2.040***	0.034	1.149***	0.042	1.168***	0.029	1.153***
	(2.68)	(7.14)	(2.85)	(7.24)	(2.70)	(7.17)	(1.02)	(10.35)	(1.08)	(10.19)	(0.82)	(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

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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.

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

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

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Table IA.2 (continued)

Panel B: $E(ISKEW)$ following Boyer, Mitton, and Vorkink (2010)

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

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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.

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

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***	-3.929**	-5.755***	-5.863***	-4.957***					
	(-2.62)	(-2.22)	(-5.85)	(-5.92)	(-4.96)					
IS_φ^{MA}						-0.728***	-0.651**	-1.008***	-1.031***	-0.918***
						(-2.89)	(-2.29)	(-5.01)	(-5.11)	(-4.58)
$ISKEW^{MA}$		0.051	-0.079**	-0.068*	-0.060*		0.054	-0.073**	-0.061*	-0.057
		(0.71)	(-2.25)	(-1.96)	(-1.70)		(0.74)	(-2.07)	(-1.77)	(-1.64)
SIZE			-0.207***	-0.205***	-0.198***			-0.208***	-0.207***	-0.199***
			(-5.25)	(-5.29)	(-5.06)			(-5.27)	(-5.32)	(-5.08)
BM			0.244***	0.246***	0.201***			0.245***	0.247***	0.202***
			(4.58)	(4.61)	(3.73)			(4.59)	(4.62)	(3.73)
MOM			0.010***	0.010***	0.009***			0.010***	0.010***	0.009***
			(6.97)	(6.89)	(6.03)			(6.84)	(6.75)	(5.91)
TURN			-0.016	-0.030	-0.001			-0.016	-0.030	-0.001
			(-0.47)	(-0.86)	(-0.03)			(-0.47)	(-0.85)	(-0.03)
ILLIQ			0.035**	0.026*	0.033**			0.035**	0.026*	0.032**
			(2.40)	(1.87)	(2.34)			(2.33)	(1.80)	(2.25)
β			0.867***	0.800***	0.727***			0.869***	0.803***	0.728***
			(4.33)	(4.06)	(3.62)			(4.33)	(4.08)	(3.62)
MAX			-0.019*	-0.039***	0.040***			-0.022**	-0.042***	0.038***
			(-1.80)	(-3.82)	(5.24)			(-2.10)	(-4.10)	(4.94)
VOL			-0.418***					-0.420***		
			(-10.28)					(-10.29)		
IVOL				-0.334***	-0.511***				-0.336***	-0.514***
				(-9.27)	(-16.62)				(-9.32)	(-16.81)
REV					-0.037***					-0.037***
					(-9.70)					(-9.68)
Constant	0.650***	0.632***	2.107***	2.064***	2.048***	0.644***	0.627***	2.120***	2.078***	2.060***
	(2.81)	(2.88)	(7.39)	(7.42)	(7.24)	(2.78)	(2.85)	(7.44)	(7.47)	(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.

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

where $R_{i,t+1}$ is 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.

Panel A: Excess return

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

Panel B: Risk-adjusted return

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

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

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

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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			-0.085		
	(-0.14)			(-0.83)		
IE_φ		-14.282*			-16.969***	
		(-1.81)			(-2.83)	
IS_φ			-3.733*			-4.479***
			(-1.70)			(-2.67)
Constant	0.450**	0.529***	0.509**	-0.242***	-0.206***	-0.228***
	(2.21)	(2.67)	(2.53)	(-3.67)	(-4.04)	(-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	ISKEW			IE_φ			IS_φ		
	P1	P5	P5-P1	P1	P5	P5-P1	P1	P5	P5-P1
*SIZE*1	0.707***	0.474**	-0.232***	0.809***	0.607***	-0.202***	0.835***	0.678***	-0.157**
t-stat	(3.39)	(2.15)	(-2.69)	(3.81)	(2.79)	(-2.77)	(3.78)	(3.01)	(-2.19)
*SIZE*2	0.641***	0.557**	-0.083	0.753***	0.517**	-0.236***	0.836***	0.543**	-0.293***
t-stat	(2.76)	(2.31)	(-0.92)	(3.30)	(2.07)	(-2.91)	(3.53)	(2.14)	(-3.94)
*SIZE*3	0.686***	0.568**	-0.118	0.734***	0.605**	-0.129	0.760***	0.582**	-0.178**
t-stat	(2.97)	(2.33)	(-1.21)	(3.32)	(2.45)	(-1.56)	(3.25)	(2.32)	(-2.27)
*SIZE*4	0.604***	0.649***	0.045	0.732***	0.559**	-0.173**	0.747***	0.571**	-0.176**
t-stat	(2.83)	(2.85)	(0.47)	(3.59)	(2.41)	(-2.16)	(3.57)	(2.46)	(-2.46)
*SIZE*5	0.499***	0.564***	0.065	0.529***	0.502***	-0.028	0.586***	0.519***	-0.067
t-stat	(2.65)	(2.89)	(0.79)	(2.89)	(2.59)	(-0.45)	(3.15)	(2.67)	(-1.27)
Avg(S1-S5)	0.627***	0.562***	-0.065	0.711***	0.558**	-0.154***	0.753***	0.579***	-0.174***
t-stat	(3.07)	(2.61)	(-0.95)	(3.57)	(2.56)	(-2.97)	(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)
$$R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t} IA_{i,t} + \lambda_{2,t} ISKEW_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is 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
ISKEW			0.010	-0.012	0.012	-0.024			-0.022	-0.018	-0.027	-0.023
			(0.33)	(-0.69)	(0.33)	(-1.27)			(-1.15)	(-1.07)	(-1.25)	(-1.24)
$IE^2_{1.5}$	-2.722**		-2.753*	-2.651***			-1.861*		-2.107**	-1.531*		
	(-2.07)		(-1.95)	(-3.01)			(-1.81)		(-2.02)	(-1.83)		
$IS^2_{1.5}$		-0.063*			-0.062*	-0.066***		-0.038			-0.043	-0.034
		(-1.89)			(-1.74)	(-2.94)		(-1.46)			(-1.61)	(-1.55)
SIZE				-0.194***		-0.205***				-0.122***		-0.127***
				(-4.95)		(-5.17)				(-9.06)		(-9.50)
BM				0.212***		0.206***				-0.003		-0.007
				(3.92)		(3.80)				(-0.07)		(-0.18)
MOM				0.009***		0.009***				0.008***		0.008***
				(5.89)		(5.75)				(5.83)		(5.71)
TURN				-0.003		0.005				0.126***		0.135***
				(-0.09)		(0.15)				(3.73)		(3.96)
ILLIQ				0.033**		0.035**				0.047***		0.050***
				(2.32)		(2.30)				(3.20)		(3.15)
β				0.745***		0.767***						
				(3.71)		(3.80)						
MAX				0.037***		0.028***				0.032***		0.025***
				(4.93)		(3.66)				(4.31)		(3.18)
IVOL				-0.506***		-0.515***				-0.399***		-0.404***
				(-16.59)		(-16.56)				(-13.79)		(-13.74)
REV				-0.035***		-0.035***						
				(-9.39)		(-9.29)						
REVA										-0.045***		-0.045***
										(-12.31)		(-12.12)
Constant	0.655***	0.658***	0.644***	2.019***	0.648***	2.109***	0.050	0.048	0.057	1.171***	0.058	1.230***
	(2.83)	(2.84)	(2.85)	(7.14)	(2.88)	(7.40)	(1.54)	(1.47)	(1.62)	(10.31)	(1.63)	(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 $IE^2_{1.5}$ and $IS^2_{1.5}$ 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 | $IE^2_{1.5}$ | | | $IS^2_{1.5}$ | | |
	Excess return (%)	CAPM alpha (%)	FF3 alpha (%)	Excess return (%)	CAPM alpha (%)	FF3 alpha (%)
1(lowest)	0.686***	0.172*	-0.034	0.695***	0.169*	-0.031
	(3.39)	(1.92)	(-0.75)	(3.38)	(1.94)	(-0.72)
2	0.675***	0.141*	-0.042	0.698***	0.162*	-0.030
	(3.26)	(1.66)	(-1.06)	(3.36)	(1.89)	(-0.70)
3	0.658***	0.115	-0.068*	0.614***	0.075	-0.105***
	(3.12)	(1.32)	(-1.83)	(2.93)	(0.86)	(-2.77)
4	0.648***	0.095	-0.080**	0.655***	0.103	-0.073*
	(3.02)	(1.07)	(-2.02)	(3.07)	(1.19)	(-1.88)
5(highest)	0.586***	0.033	-0.134***	0.613***	0.049	-0.120***
	(2.70)	(0.35)	(-3.30)	(2.78)	(0.52)	(-2.89)
5-1 spread	-0.100**	-0.139***	-0.100***	-0.081**	-0.120***	-0.090***
	(-2.45)	(-3.58)	(-2.83)	(-2.16)	(-3.41)	(-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.

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

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

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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.

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

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.

Panel A: $ISKEW$

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

Panel B: IE_φ

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

Panel C: IS_φ

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

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

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.

Panel A: *ISKEW*

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

Panel B: IE_φ

	High				Low			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IE_φ	-5.280***	-6.292***	-7.059***	-6.944***	-0.975	-2.633***	-2.501***	-2.060***
	(-3.58)	(-5.12)	(-5.70)	(-5.66)	(-1.03)	(-3.61)	(-3.44)	(-2.86)
SIZE		-0.161***	-0.184***	-0.171***		-0.164***	-0.185***	-0.154***
		(-3.75)	(-4.26)	(-4.07)		(-5.00)	(-5.60)	(-4.83)
BM		0.348***	0.319***	0.290***		0.230***	0.205***	0.169***
		(6.71)	(6.19)	(5.77)		(5.03)	(4.51)	(3.75)
MOM		0.012***	0.011***	0.010***		0.008***	0.008***	0.007***
		(8.80)	(7.96)	(7.62)		(5.14)	(4.80)	(4.63)
TURN		-0.264***	-0.145***	-0.155***		-0.010	0.040	0.048*
		(-6.84)	(-3.65)	(-4.05)		(-0.33)	(1.42)	(1.71)
ILLIQ		-0.036**	-0.025*	-0.024*		0.024	0.034*	0.026
		(-2.42)	(-1.79)	(-1.76)		(1.17)	(1.67)	(1.27)
β		0.823***	0.859***	0.840***		0.611***	0.760***	0.592***
		(4.83)	(5.05)	(4.98)		(3.37)	(4.11)	(3.27)
MAX			-0.083***	-0.068***			-0.134***	-0.041***
			(-14.39)	(-11.65)			(-13.26)	(-4.02)
REV				-0.016***				-0.051***
				(-4.87)				(-12.83)
Constant	0.368	0.865***	1.435***	1.299***	0.868***	1.301***	1.734***	1.371***
	(1.45)	(3.08)	(5.00)	(4.66)	(4.72)	(5.58)	(7.24)	(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)
IS_φ	-1.219***	-1.537***	-1.611***	-1.541***	-0.019	-0.439**	-0.394*	-0.324
	(-3.33)	(-4.69)	(-4.88)	(-4.71)	(-0.07)	(-2.06)	(-1.84)	(-1.53)
SIZE		-0.163***	-0.186***	-0.174***		-0.164***	-0.185***	-0.154***
		(-3.79)	(-4.31)	(-4.13)		(-4.98)	(-5.59)	(-4.82)
BM		0.345***	0.316***	0.288***		0.231***	0.206***	0.169***
		(6.65)	(6.12)	(5.71)		(5.06)	(4.54)	(3.77)
MOM		0.012***	0.011***	0.010***		0.008***	0.008***	0.007***
		(8.84)	(7.99)	(7.66)		(5.13)	(4.80)	(4.63)
TURN		-0.269***	-0.148***	-0.159***		-0.011	0.039	0.046*
		(-6.93)	(-3.71)	(-4.14)		(-0.39)	(1.36)	(1.65)
ILLIQ		-0.035**	-0.024*	-0.024*		0.023	0.034	0.026
		(-2.38)	(-1.75)	(-1.73)		(1.14)	(1.64)	(1.26)
β		0.831***	0.868***	0.849***		0.609***	0.759***	0.591***
		(4.88)	(5.09)	(5.03)		(3.35)	(4.10)	(3.27)
MAX			-0.085***	-0.070***			-0.135***	-0.042***
			(-14.66)	(-11.91)			(-13.32)	(-4.10)
REV				-0.016***				-0.051***
				(-4.77)				(-12.80)
Constant	0.360	0.865***	1.448***	1.313***	0.866***	1.301***	1.737***	1.374***
	(1.41)	(3.08)	(5.04)	(4.70)	(4.71)	(5.57)	(7.24)	(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)
$$R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t} IA_{i,t} + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is excess return of stock i at time $t+1$, $IA_{i,t}$ is $ISKEW$, 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***	-0.095*					0.185**	0.127***				
	(-2.72)	(-1.73)					(2.12)	(2.95)				
IE_φ		-9.532**		-3.960*					-0.062	-3.188		
		(-2.38)		(-1.91)					(-0.02)	(-1.53)		
IS_φ					-2.820***	-1.544***					-0.172	-0.854
					(-3.07)	(-2.82)					(-0.24)	(-1.55)
SIZE		-0.051		-0.040		-0.042		-0.427***		-0.438***		-0.439***
		(-0.59)		(-0.45)		(-0.48)		(-4.38)		(-4.47)		(-4.48)
BM		0.452***		0.456***		0.453***		0.401**		0.400**		0.399**
		(3.49)		(3.52)		(3.49)		(2.55)		(2.55)		(2.55)
MOM		0.013***		0.013***		0.013***		0.006		0.007		0.007
		(3.00)		(2.93)		(2.94)		(1.41)		(1.63)		(1.63)
TURN		0.193**		0.201**		0.202**		-0.130		-0.133		-0.130
		(2.26)		(2.35)		(2.37)		(-1.27)		(-1.33)		(-1.28)
ILLIQ		0.024		0.023		0.024		-0.046		-0.040		-0.039
		(0.49)		(0.48)		(0.49)		(-1.22)		(-1.08)		(-1.04)
β		-0.407		-0.414		-0.411		1.522***		1.515***		1.522***
		(-0.78)		(-0.79)		(-0.78)		(3.60)		(3.59)		(3.60)
MAX		-0.107***		-0.115***		-0.116***		-0.128***		-0.117***		-0.119***
		(-3.97)		(-4.54)		(-4.58)		(-4.30)		(-4.10)		(-4.23)
IVOL		-0.235**		-0.218**		-0.217**		-0.154		-0.165		-0.165
		(-2.26)		(-2.16)		(-2.16)		(-1.40)		(-1.52)		(-1.52)
Constant	-0.335	1.633**	-0.426	1.533**	-0.426	1.548**	0.940	2.448***	1.037	2.522***	1.041	2.534***
	(-0.51)	(2.60)	(-0.64)	(2.44)	(-0.64)	(2.46)	(1.50)	(3.61)	(1.60)	(3.72)	(1.60)	(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)
$$R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t} IA_{i,t} + \lambda_{2,t} U_1^I i,t + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

where $R_{i,t+1}$ is the excess return, which is the difference between the monthly stock return 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***	-4.109***			-3.003***	-3.015***		
	(-3.51)	(-5.08)			(-3.42)	(-3.94)		
IS_φ			-0.904***	-0.879***			-0.706***	-0.685***
			(-3.11)	(-4.10)			(-3.41)	(-3.40)
U_1^I	0.451	0.174	0.292	-0.017	0.192	0.337	0.109	0.226
	(0.88)	(0.54)	(0.57)	(-0.06)	(0.51)	(1.01)	(0.30)	(0.70)
ISKEW		-0.020		-0.010		-0.026		-0.020
		(-1.18)		(-0.62)		(-1.56)		(-1.19)
SIZE		-0.196***		-0.196***		-0.122***		-0.123***
		(-4.98)		(-4.99)		(-9.02)		(-9.05)
BM		0.210***		0.210***		-0.005		-0.004
		(3.88)		(3.88)		(-0.13)		(-0.11)
MOM		0.009***		0.009***		0.008***		0.008***
		(5.95)		(5.92)		(5.86)		(5.84)
TURN		0.000		-0.001		0.129***		0.129***
		(0.00)		(-0.02)		(3.81)		(3.81)
ILLIQ		0.033**		0.034**		0.048***		0.048***
		(2.34)		(2.36)		(3.22)		(3.23)
β		0.745***		0.750***				
		(3.71)		(3.73)				
MAX		0.037***		0.035***		0.032***		0.030***
		(4.97)		(4.67)		(4.34)		(4.06)
IVOL		-0.505***		-0.504***		-0.398***		-0.397***
		(-16.63)		(-16.69)		(-13.86)		(-13.85)
REV		-0.035***		-0.035***				
		(-9.39)		(-9.32)				
REVA						-0.045***		-0.045***
						(-12.34)		(-12.27)
Constant	0.658***	2.029***	0.655***	2.034***	0.052	1.173***	0.051	1.180***
	(2.89)	(7.17)	(2.88)	(7.19)	(1.59)	(10.24)	(1.54)	(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.

$$(11) \qquad R_{i,t+1} = \lambda_{0,t} + \lambda_{1,t} IA_{i,t} + \lambda_{2,t} U_2^I i,t + \Lambda_t X_{i,t} + \varepsilon_{i,t+1},$$

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