

Online Appendix

An Economic Specification Test of Asset Pricing Models with A Large Number of Assets

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

- **Table A1:** Average returns of PE decile portfolios: 24-month rolling window.
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Table A1 Average returns of PE decile portfolios: 24-month rolling window

This table reports average returns of PE decile portfolios (Newey-West t -values in parentheses), where PE is based on the CAPM, FF3 (Fama and French, 1993), FF5 (Fama and French, 2015), HXZ (Hou, Xue, and Zhang, 2015), SY (Stambaugh and Yuan, 2017), and DHS (Daniel, Hirshleifer, and Sun, 2020) model, respectively. Given a factor model, each month we calculate the PE of a firm as its realized return minus its expected return that is explained by the model and estimated with its past 60-month returns, normalized by its standard deviation (i.e., equation (11)), and form value-weighted decile portfolios in an ascending order of PE.

	PE1 (Low)	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10 (High)	PE1-10
PE _{CAPM}	0.88 (4.71)	0.89 (4.86)	0.75 (4.11)	0.74 (4.08)	0.75 (4.07)	0.68 (3.70)	0.73 (4.11)	0.56 (3.18)	0.52 (2.94)	0.16 (0.86)	0.72 (5.90)
PE _{FF3}	0.95 (4.98)	0.88 (4.74)	0.76 (4.42)	0.79 (4.30)	0.71 (3.88)	0.67 (3.71)	0.68 (3.64)	0.58 (3.33)	0.52 (2.90)	0.15 (0.82)	0.80 (6.56)
PE _{FF5}	0.81 (3.65)	0.85 (4.12)	0.82 (4.01)	0.64 (3.09)	0.56 (2.80)	0.48 (2.51)	0.54 (2.72)	0.44 (2.31)	0.34 (1.81)	0.13 (0.74)	0.68 (4.36)
PE _{HXZ}	0.83 (3.62)	0.78 (3.57)	0.73 (3.47)	0.67 (3.03)	0.55 (2.77)	0.49 (2.40)	0.55 (2.65)	0.46 (2.27)	0.36 (1.82)	0.15 (0.82)	0.68 (4.26)
PE _{SY}	0.78 (3.55)	0.89 (4.27)	0.70 (3.59)	0.69 (3.33)	0.54 (2.76)	0.54 (2.89)	0.53 (2.73)	0.45 (2.40)	0.35 (1.87)	0.14 (0.78)	0.64 (4.23)
PE _{DHS}	0.92 (3.73)	0.94 (4.39)	0.85 (3.76)	0.84 (4.02)	0.68 (3.18)	0.79 (3.90)	0.70 (3.42)	0.65 (3.21)	0.54 (2.63)	0.29 (1.49)	0.63 (3.34)

Table A2 Alphas of decile portfolios formed by PEs of PCA factor models

This table reports alphas of PE decile portfolios (Newey-West t -values in parentheses), where PE is based on PCA factor models. With 105 anomalies, we extract PCA factors by using the [Balvers and Stivers \(2018\)](#) method with a zero mispricing constraint. PE_{PCA1} refers to the PE of PCA 1-factor model and PE_{PCA3} to the PE of PCA 3-factor model, etc.

	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	PE1-10
Panel A: portfolio sorted by PE_{PCA1}											
CAPM alpha	0.26 (1.85)	0.26 (2.83)	0.20 (2.61)	0.13 (1.63)	0.12 (1.79)	0.08 (0.97)	0.04 (0.53)	0.04 (0.61)	-0.04 (-0.44)	-0.27 (-2.80)	0.52 (2.83)
FF3 alpha	0.17 (1.27)	0.20 (2.17)	0.18 (2.41)	0.07 (0.88)	0.10 (1.43)	0.04 (0.54)	0.01 (0.08)	0.07 (0.94)	-0.05 (-0.58)	-0.28 (-2.90)	0.45 (2.37)
FF5 alpha	0.17 (1.18)	0.16 (1.68)	0.17 (2.19)	0.01 (0.12)	0.08 (1.03)	-0.02 (-0.26)	-0.06 (-0.74)	0.04 (0.58)	-0.09 (-0.91)	-0.32 (-2.88)	0.49 (2.29)
HXZ alpha	0.29 (1.81)	0.27 (2.34)	0.24 (2.63)	0.03 (0.30)	0.05 (0.64)	-0.01 (-0.08)	-0.09 (-1.09)	0.01 (0.19)	-0.12 (-1.16)	-0.37 (-3.08)	0.66 (2.73)
SY alpha	0.38 (2.89)	0.32 (3.06)	0.28 (3.25)	0.09 (1.08)	0.03 (0.33)	0.01 (0.09)	-0.16 (-1.88)	0.01 (0.09)	-0.14 (-1.44)	-0.47 (-4.00)	0.85 (4.21)
DHS alpha	0.58 (3.85)	0.42 (4.05)	0.36 (3.70)	0.14 (1.66)	0.07 (0.84)	0.03 (0.33)	-0.09 (-1.09)	-0.10 (-1.37)	-0.26 (-2.58)	-0.63 (-5.51)	1.21 (5.31)
Panel B: portfolio sorted by PE_{PCA3}											
CAPM alpha	0.27 (2.15)	0.22 (2.51)	0.26 (3.24)	0.21 (2.87)	-0.01 (-0.13)	0.15 (2.06)	0.00 (0.03)	0.07 (0.97)	-0.05 (-0.66)	-0.25 (-2.52)	0.53 (2.95)
FF3 alpha	0.21 (1.65)	0.17 (1.99)	0.25 (3.26)	0.17 (2.33)	-0.03 (-0.49)	0.14 (1.71)	-0.02 (-0.26)	0.05 (0.77)	-0.07 (-0.89)	-0.28 (-2.73)	0.50 (2.60)
FF5 alpha	0.23 (1.62)	0.18 (1.83)	0.22 (2.83)	0.15 (2.08)	-0.11 (-1.59)	0.10 (1.09)	-0.06 (-0.74)	-0.00 (-0.06)	-0.11 (-1.33)	-0.34 (-2.94)	0.56 (2.64)
HXZ alpha	0.35 (2.29)	0.28 (2.38)	0.25 (2.78)	0.17 (2.25)	-0.10 (-1.30)	0.08 (0.79)	-0.09 (-1.05)	-0.01 (-0.16)	-0.14 (-1.59)	-0.39 (-3.16)	0.73 (3.12)
SY alpha	0.44 (3.41)	0.33 (3.31)	0.31 (3.43)	0.19 (2.21)	-0.06 (-0.84)	0.07 (0.81)	-0.16 (-2.02)	0.01 (0.16)	-0.17 (-2.05)	-0.47 (-3.85)	0.91 (4.42)
DHS alpha	0.62 (4.28)	0.41 (3.97)	0.37 (3.58)	0.26 (2.97)	-0.05 (-0.80)	0.10 (1.18)	-0.10 (-1.20)	-0.08 (-1.07)	-0.29 (-3.40)	-0.62 (-5.18)	1.24 (5.45)
Panel C: portfolio sorted by PE_{PCA5}											
CAPM alpha	0.38 (3.25)	0.22 (2.58)	0.14 (1.96)	0.15 (2.04)	0.08 (1.27)	0.07 (1.04)	0.05 (0.62)	-0.01 (-0.09)	-0.04 (-0.51)	-0.25 (-2.64)	0.63 (3.73)
FF3 alpha	0.29 (2.45)	0.17 (2.04)	0.10 (1.54)	0.13 (1.72)	0.08 (1.10)	0.05 (0.64)	0.05 (0.65)	-0.01 (-0.15)	-0.07 (-0.83)	-0.27 (-2.78)	0.56 (3.16)
FF5 alpha	0.30 (2.34)	0.13 (1.56)	0.05 (0.76)	0.08 (1.16)	0.08 (1.14)	-0.02 (-0.24)	0.02 (0.26)	-0.10 (-1.43)	-0.08 (-0.93)	-0.31 (-2.83)	0.62 (3.03)
HXZ alpha	0.41 (2.76)	0.20 (1.98)	0.08 (0.99)	0.10 (1.30)	0.07 (0.87)	-0.02 (-0.26)	-0.01 (-0.19)	-0.12 (-1.47)	-0.09 (-0.99)	-0.35 (-2.97)	0.76 (3.28)
SY alpha	0.52 (4.49)	0.24 (2.43)	0.11 (1.36)	0.16 (1.90)	0.05 (0.61)	-0.03 (-0.41)	0.01 (0.09)	-0.12 (-1.68)	-0.15 (-1.68)	-0.46 (-3.94)	0.98 (5.16)
DHS alpha	0.67 (4.82)	0.35 (3.43)	0.19 (2.08)	0.20 (2.33)	0.05 (0.67)	-0.02 (-0.26)	0.01 (0.15)	-0.18 (-2.40)	-0.25 (-2.76)	-0.59 (-5.01)	1.26 (5.72)

Table A2 (continued)

	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	PE1-10
Panel D: portfolio sorted by PE_{PCA10}											
CAPM alpha	0.35 (2.89)	0.20 (2.26)	0.08 (1.18)	0.06 (0.88)	0.05 (0.87)	0.11 (1.69)	0.08 (1.13)	0.12 (1.53)	-0.14 (-1.72)	-0.16 (-1.72)	0.52 (2.90)
FF3 alpha	0.27 (2.16)	0.15 (1.75)	0.07 (0.87)	0.03 (0.40)	0.02 (0.38)	0.10 (1.35)	0.07 (0.85)	0.12 (1.47)	-0.16 (-2.04)	-0.19 (-1.95)	0.46 (2.45)
FF5 alpha	0.27 (2.02)	0.08 (0.96)	0.04 (0.49)	-0.00 (-0.01)	-0.01 (-0.23)	0.02 (0.31)	0.02 (0.28)	0.10 (1.14)	-0.21 (-2.59)	-0.21 (-1.82)	0.48 (2.22)
HXZ alpha	0.37 (2.37)	0.15 (1.59)	0.11 (1.07)	-0.00 (-0.00)	-0.00 (-0.01)	-0.01 (-0.18)	0.01 (0.10)	0.06 (0.61)	-0.21 (-2.47)	-0.24 (-1.98)	0.61 (2.48)
SY alpha	0.48 (3.77)	0.21 (2.24)	0.14 (1.56)	0.06 (0.74)	0.00 (0.05)	-0.03 (-0.39)	-0.02 (-0.22)	0.04 (0.51)	-0.24 (-2.83)	-0.36 (-3.21)	0.85 (4.10)
DHS alpha	0.65 (4.44)	0.32 (3.23)	0.17 (1.79)	0.12 (1.40)	0.07 (0.91)	-0.04 (-0.63)	-0.00 (-0.05)	-0.03 (-0.37)	-0.34 (-3.96)	-0.49 (-4.23)	1.14 (4.93)

Table A3 Average returns of decile portfolios sorted by PEs of alternative PCA factor models

This table reports average returns of PE decile portfolios (Newey-West t -values in parentheses), where PE is based on PCA factors, which are extracted from 105 anomalies. Panel A is about the standard PCA and Panel B is about the risk-premium PCA in [Lettau and Pelger \(2020\)](#).

Model	PE1	PE2	PE3	PE4	PE5	PE6	PE7	PE8	PE9	PE10	PE1-10
Panel A: Standard PCA											
PE _{PCA1}	0.85 (3.34)	0.88 (4.04)	0.85 (3.70)	0.83 (3.67)	0.63 (2.89)	0.68 (3.35)	0.64 (2.92)	0.58 (2.84)	0.55 (2.51)	0.26 (1.29)	0.59 (3.11)
PE _{PCA3}	0.86 (3.35)	0.90 (4.16)	0.85 (3.66)	0.77 (3.42)	0.72 (3.33)	0.66 (3.10)	0.62 (2.86)	0.61 (3.08)	0.56 (2.58)	0.26 (1.29)	0.59 (3.11)
PE _{PCA5}	0.84 (3.39)	0.91 (3.93)	0.85 (3.82)	0.81 (3.69)	0.68 (3.06)	0.65 (3.06)	0.62 (2.90)	0.60 (2.94)	0.51 (2.38)	0.27 (1.32)	0.57 (3.09)
PE _{PCA10}	0.91 (3.70)	0.88 (3.97)	0.81 (3.53)	0.79 (3.42)	0.69 (3.14)	0.68 (3.20)	0.58 (2.66)	0.65 (3.23)	0.50 (2.34)	0.28 (1.40)	0.63 (3.47)
Panel B: Risk-premium PCA											
PE _{PCA1}	0.84 (3.36)	0.82 (3.58)	0.73 (3.24)	0.69 (3.12)	0.66 (3.10)	0.56 (2.54)	0.57 (2.78)	0.53 (2.59)	0.45 (2.07)	0.19 (0.96)	0.65 (3.50)
PE _{PCA3}	0.88 (3.58)	0.78 (3.23)	0.77 (3.42)	0.70 (3.27)	0.61 (2.77)	0.66 (3.14)	0.55 (2.50)	0.50 (2.53)	0.46 (2.21)	0.20 (0.99)	0.68 (3.73)
PE _{PCA5}	0.96 (4.01)	0.75 (3.23)	0.66 (3.19)	0.63 (2.74)	0.67 (3.08)	0.61 (2.86)	0.62 (2.85)	0.49 (2.45)	0.41 (1.97)	0.23 (1.16)	0.73 (4.05)
PE _{PCA10}	0.84 (3.39)	0.85 (3.82)	0.81 (3.57)	0.65 (2.91)	0.65 (3.01)	0.52 (2.45)	0.62 (2.93)	0.56 (2.83)	0.42 (2.00)	0.22 (1.09)	0.62 (3.41)

Table A4 Alpha difference between PE spread portfolios

This table reports the difference in alpha between PE spread portfolios, with p -value in parenthesis. The value in (i, j) corresponds to the difference between the PE_i spread portfolio and the PE_j spread portfolio, where i and j denote factor models i and j . PE_{CAPM} refers to the CAPM's PE, and PE_{FF3} to the FF3's PE, etc. The sample period is 1977:08–2018:12 for all portfolios.

Panel A: Difference in CAPM alpha										
	PE_{CAPM}	PE_{FF3}	PE_{FF5}	PE_{HXZ}	PE_{SY}	PE_{DHS}	PE_{PCA1}	PE_{PCA3}	PE_{PCA5}	PE_{PCA10}
PE_{CAPM}	–	0.00 (0.95)	–0.03 (0.54)	–0.04 (0.40)	–0.00 (0.97)	–0.04 (0.37)	0.06 (0.29)	0.05 (0.38)	–0.05 (0.56)	0.07 (0.47)
PE_{FF3}		–	–0.03 (0.37)	–0.04 (0.32)	–0.00 (0.90)	–0.05 (0.33)	0.06 (0.31)	0.05 (0.40)	–0.06 (0.50)	0.07 (0.44)
PE_{FF5}			–	–0.01 (0.74)	0.03 (0.49)	–0.02 (0.72)	0.08 (0.13)	0.08 (0.21)	–0.03 (0.74)	0.10 (0.27)
PE_{HXZ}				–	0.04 (0.29)	–0.00 (0.93)	0.10 (0.08)	0.09 (0.14)	–0.02 (0.86)	0.11 (0.22)
PE_{SY}					–	–0.04 (0.40)	0.06 (0.33)	0.06 (0.40)	–0.05 (0.55)	0.07 (0.40)
PE_{DHS}						–	0.10 (0.06)	0.10 (0.12)	–0.01 (0.89)	0.12 (0.23)
PE_{PCA1}							–	–0.00 (0.95)	–0.11 (0.17)	0.01 (0.88)
PE_{PCA3}								–	–0.11 (0.12)	0.02 (0.84)
PE_{PCA5}									–	0.13 (0.09)
PE_{PCA10}										–
Panel B: Difference in FF5 alpha										
	PE_{CAPM}	PE_{FF3}	PE_{FF5}	PE_{HXZ}	PE_{SY}	PE_{DHS}	PE_{PCA1}	PE_{PCA3}	PE_{PCA5}	PE_{PCA10}
PE_{CAPM}	–	0.04 (0.38)	0.02 (0.65)	0.00 (0.98)	0.07 (0.08)	–0.04 (0.41)	0.07 (0.22)	–0.00 (0.96)	–0.06 (0.49)	0.10 (0.30)
PE_{FF3}		–	–0.02 (0.61)	–0.03 (0.41)	0.04 (0.32)	–0.07 (0.09)	0.03 (0.56)	–0.04 (0.52)	–0.10 (0.23)	0.06 (0.47)
PE_{FF5}			–	–0.02 (0.63)	0.05 (0.13)	–0.06 (0.18)	0.05 (0.38)	–0.02 (0.73)	–0.08 (0.32)	0.08 (0.36)
PE_{HXZ}				–	0.07 (0.04)	–0.04 (0.32)	0.07 (0.22)	–0.00 (0.95)	–0.06 (0.46)	0.10 (0.28)
PE_{SY}					–	–0.11 (0.01)	–0.00 (0.95)	–0.07 (0.25)	–0.13 (0.12)	0.03 (0.75)
PE_{DHS}						–	0.11 (0.04)	0.04 (0.55)	–0.02 (0.77)	0.14 (0.13)
PE_{PCA1}							–	–0.07 (0.17)	–0.13 (0.11)	0.03 (0.74)
PE_{PCA3}								–	–0.06 (0.37)	0.10 (0.24)
PE_{PCA5}									–	0.16 (0.03)
PE_{PCA10}										–

Table A4 (continued)

Panel C: Difference in HXZ alpha										
	PE _{CAPM}	PE _{FF3}	PE _{FF5}	PE _{HXZ}	PE _{SY}	PE _{DHS}	PE _{PCA1}	PE _{PCA3}	PE _{PCA5}	PE _{PCA10}
PE _{CAPM}	–	0.05 (0.25)	0.03 (0.42)	0.03 (0.47)	0.08 (0.08)	–0.02 (0.67)	0.07 (0.21)	–0.00 (0.94)	–0.03 (0.76)	0.14 (0.15)
PE _{FF3}		–	–0.01 (0.66)	–0.02 (0.67)	0.03 (0.45)	–0.07 (0.13)	0.02 (0.70)	–0.05 (0.39)	–0.08 (0.36)	0.09 (0.31)
PE _{FF5}			–	–0.00 (0.94)	0.04 (0.25)	–0.05 (0.21)	0.04 (0.53)	–0.04 (0.54)	–0.06 (0.45)	0.10 (0.25)
PE _{HXZ}				–	0.04 (0.21)	–0.05 (0.21)	0.04 (0.48)	–0.04 (0.55)	–0.06 (0.50)	0.11 (0.24)
PE _{SY}					–	–0.09 (0.04)	–0.01 (0.92)	–0.08 (0.22)	–0.10 (0.24)	0.06 (0.48)
PE _{DHS}						–	0.09 (0.09)	0.01 (0.80)	–0.01 (0.92)	0.16 (0.08)
PE _{PCA1}							–	–0.07 (0.15)	–0.10 (0.23)	0.07 (0.47)
PE _{PCA3}								–	–0.02 (0.73)	0.14 (0.10)
PE _{PCA5}									–	0.16 (0.03)
PE _{PCA10}										–
Panel D: Difference in SY alpha										
	PE _{CAPM}	PE _{FF3}	PE _{FF5}	PE _{HXZ}	PE _{SY}	PE _{DHS}	PE _{PCA1}	PE _{PCA3}	PE _{PCA5}	PE _{PCA10}
PE _{CAPM}	–	0.02 (0.62)	0.01 (0.84)	–0.02 (0.73)	0.04 (0.31)	–0.06 (0.17)	0.07 (0.23)	0.01 (0.84)	–0.06 (0.51)	0.08 (0.43)
PE _{FF3}		–	–0.01 (0.70)	–0.04 (0.37)	0.02 (0.51)	–0.08 (0.07)	0.04 (0.42)	–0.01 (0.88)	–0.08 (0.32)	0.06 (0.52)
PE _{FF5}			–	–0.02 (0.50)	0.04 (0.31)	–0.07 (0.10)	0.06 (0.30)	0.00 (0.96)	–0.07 (0.39)	0.07 (0.44)
PE _{HXZ}				–	0.06 (0.08)	–0.05 (0.26)	0.08 (0.14)	0.03 (0.65)	–0.05 (0.60)	0.09 (0.30)
PE _{SY}					–	–0.11 (0.02)	0.02 (0.73)	–0.03 (0.62)	–0.11 (0.22)	0.03 (0.71)
PE _{DHS}						–	0.13 (0.01)	0.07 (0.19)	0.00 (0.99)	0.14 (0.13)
PE _{PCA1}							–	–0.05 (0.29)	–0.13 (0.12)	0.01 (0.90)
PE _{PCA3}								–	–0.07 (0.28)	0.07 (0.47)
PE _{PCA5}									–	0.14 (0.06)
PE _{PCA10}										–

Table A4 (continued)

Panel E: Difference in DHS alpha										
	PE _{CAPM}	PE _{FF3}	PE _{FF5}	PE _{HXZ}	PE _{SY}	PE _{DHS}	PE _{PCA1}	PE _{PCA3}	PE _{PCA5}	PE _{PCA10}
PE _{CAPM}	–	0.04 (0.28)	0.04 (0.35)	0.01 (0.84)	0.05 (0.24)	–0.03 (0.57)	0.05 (0.39)	0.02 (0.78)	0.01 (0.93)	0.13 (0.18)
PE _{FF3}		–	–0.01 (0.88)	–0.04 (0.40)	0.01 (0.87)	–0.07 (0.13)	0.00 (0.95)	–0.03 (0.65)	–0.04 (0.67)	0.09 (0.33)
PE _{FF5}			–	–0.03 (0.42)	0.01 (0.76)	–0.07 (0.14)	0.01 (0.88)	–0.02 (0.73)	–0.03 (0.71)	0.09 (0.30)
PE _{HXZ}				–	0.04 (0.25)	–0.04 (0.39)	0.04 (0.49)	0.01 (0.90)	–0.00 (0.99)	0.12 (0.18)
PE _{SY}					–	–0.08 (0.11)	–0.00 (0.96)	–0.03 (0.61)	–0.04 (0.63)	0.08 (0.35)
PE _{DHS}						–	0.07 (0.16)	0.04 (0.47)	0.04 (0.68)	0.16 (0.09)
PE _{PCA1}							–	–0.03 (0.55)	–0.04 (0.63)	0.08 (0.38)
PE _{PCA3}								–	–0.01 (0.90)	0.12 (0.20)
PE _{PCA5}									–	0.12 (0.10)
PE _{PCA10}										–

Table A5 FF3 alphas of portfolios sorted by short-term reversal and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by short-term reversal (STR) and PE, where STR is measured by the prior (1-1) return.

	Panel A: Sort on STR and PE_{CAPM}						Panel B: Sort on STR and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
STR1	0.44 (3.73)	0.20 (1.74)	0.16 (1.62)	0.06 (0.61)	-0.22 (-1.77)	0.66 (4.23)	0.45 (3.81)	0.25 (2.19)	0.13 (1.33)	0.10 (1.01)	-0.21 (-1.69)	0.67 (4.30)
STR2	0.40 (4.90)	0.20 (2.57)	0.08 (0.94)	-0.13 (-1.72)	-0.19 (-1.68)	0.59 (4.10)	0.45 (5.63)	0.22 (2.64)	0.11 (1.26)	-0.26 (-3.04)	-0.11 (-0.91)	0.56 (3.58)
STR3	0.18 (1.99)	0.01 (0.12)	0.07 (0.97)	-0.02 (-0.22)	-0.03 (-0.28)	0.20 (1.35)	0.24 (2.65)	0.16 (2.05)	0.04 (0.60)	-0.01 (-0.15)	-0.11 (-1.27)	0.35 (2.38)
STR4	0.15 (1.45)	0.02 (0.23)	-0.08 (-0.97)	-0.09 (-1.29)	-0.04 (-0.44)	0.19 (1.30)	0.20 (1.98)	-0.00 (-0.02)	-0.02 (-0.25)	-0.13 (-1.78)	-0.06 (-0.67)	0.27 (1.94)
STR5	-0.15 (-1.21)	-0.15 (-1.43)	-0.38 (-4.32)	-0.40 (-3.97)	-0.61 (-5.43)	0.46 (2.77)	-0.22 (-1.81)	-0.15 (-1.54)	-0.36 (-4.29)	-0.43 (-4.42)	-0.60 (-5.45)	0.39 (2.35)
All stocks	0.24 (4.91)	0.05 (1.18)	-0.01 (-0.20)	-0.11 (-2.70)	-0.08 (-1.32)	0.32 (3.54)	0.28 (5.70)	0.09 (2.34)	0.01 (0.21)	-0.16 (-3.41)	-0.11 (-1.90)	0.39 (4.43)
	Panel C: Sort on STR and PE_{FF5}						Panel D: Sort on STR and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
STR1	0.23 (1.48)	0.00 (0.02)	0.08 (0.66)	-0.02 (-0.13)	-0.25 (-1.52)	0.48 (2.25)	0.26 (1.64)	0.10 (0.66)	-0.06 (-0.48)	-0.01 (-0.06)	-0.20 (-1.23)	0.47 (2.15)
STR2	0.60 (6.53)	0.12 (1.31)	0.16 (1.47)	-0.30 (-2.63)	-0.23 (-1.31)	0.83 (3.83)	0.52 (5.58)	0.24 (2.68)	0.12 (1.11)	-0.06 (-0.54)	-0.32 (-1.98)	0.84 (4.18)
STR3	0.41 (4.09)	0.18 (1.70)	0.01 (0.17)	-0.06 (-0.65)	-0.15 (-1.55)	0.56 (3.60)	0.33 (3.51)	0.25 (2.64)	-0.02 (-0.26)	-0.08 (-0.82)	-0.16 (-1.63)	0.50 (3.30)
STR4	0.34 (2.71)	0.23 (2.26)	-0.10 (-0.98)	-0.02 (-0.28)	0.01 (0.07)	0.33 (2.16)	0.32 (2.68)	0.18 (1.56)	0.13 (1.18)	-0.08 (-0.95)	-0.10 (-0.93)	0.42 (2.83)
STR5	-0.01 (-0.10)	-0.08 (-0.66)	-0.15 (-1.53)	-0.32 (-3.22)	-0.41 (-3.26)	0.40 (2.21)	0.06 (0.41)	-0.04 (-0.33)	-0.18 (-1.69)	-0.31 (-2.96)	-0.37 (-2.84)	0.43 (2.39)
All stocks	0.41 (6.49)	0.10 (2.02)	-0.01 (-0.14)	-0.15 (-3.52)	-0.11 (-1.65)	0.52 (4.81)	0.36 (5.90)	0.15 (2.97)	-0.02 (-0.47)	-0.15 (-3.22)	-0.15 (-2.13)	0.51 (4.59)
	Panel E: Sort on STR and PE_{SY}						Panel F: Sort on STR and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
STR1	0.26 (1.75)	0.01 (0.08)	0.19 (1.56)	-0.11 (-0.89)	-0.27 (-1.50)	0.53 (2.44)	0.12 (0.69)	-0.12 (-0.70)	0.06 (0.41)	-0.09 (-0.61)	-0.17 (-0.86)	0.29 (1.16)
STR2	0.49 (4.96)	0.35 (3.70)	0.16 (1.62)	-0.24 (-2.35)	-0.25 (-1.57)	0.74 (3.63)	0.57 (5.52)	0.17 (1.53)	0.19 (1.67)	-0.24 (-1.87)	-0.15 (-0.98)	0.71 (3.69)
STR3	0.29 (2.69)	0.32 (3.07)	0.04 (0.41)	-0.05 (-0.47)	-0.16 (-1.71)	0.44 (2.82)	0.35 (3.23)	-0.00 (-0.00)	0.19 (1.76)	0.06 (0.49)	-0.22 (-1.73)	0.57 (3.07)
STR4	0.28 (2.33)	0.22 (2.10)	-0.02 (-0.20)	-0.10 (-1.20)	0.01 (0.14)	0.26 (1.89)	0.28 (2.31)	0.29 (2.61)	-0.01 (-0.10)	-0.15 (-1.56)	0.06 (0.53)	0.21 (1.29)
STR5	0.01 (0.04)	-0.03 (-0.25)	-0.12 (-1.26)	-0.33 (-3.31)	-0.39 (-3.05)	0.39 (2.21)	0.02 (0.12)	-0.13 (-0.91)	-0.19 (-1.77)	-0.31 (-2.84)	-0.43 (-2.98)	0.45 (2.24)
All stocks	0.33 (5.06)	0.18 (3.58)	0.04 (0.90)	-0.16 (-3.99)	-0.12 (-1.92)	0.46 (4.21)	0.31 (4.74)	0.09 (1.67)	0.05 (0.92)	-0.20 (-3.54)	-0.12 (-1.42)	0.43 (3.37)

Table A6 FF3 alphas of portfolios sorted by PE and short-term reversal

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by PE and short-term reversal (STR), where STR is measured by the prior (1-1) return.

	Panel A: Sort on PE_{CAPM} and STR						Panel B: Sort on PE_{FF3} and STR					
	STR1	STR2	STR3	STR4	STR5	STR1-5	STR1	STR2	STR3	STR4	STR5	STR1-5
PE1	0.14 (0.87)	0.15 (1.37)	0.22 (2.09)	0.41 (4.95)	0.30 (3.86)	-0.16 (-0.88)	0.13 (0.85)	0.15 (1.30)	0.24 (2.29)	0.42 (5.01)	0.35 (4.56)	-0.22 (-1.20)
PE2	-0.07 (-0.54)	0.01 (0.13)	-0.14 (-1.67)	0.14 (1.63)	0.22 (2.57)	-0.29 (-1.69)	-0.05 (-0.36)	-0.01 (-0.12)	-0.09 (-1.15)	0.23 (3.01)	0.27 (2.91)	-0.32 (-1.80)
PE3	-0.26 (-2.28)	-0.20 (-2.21)	0.04 (0.46)	0.15 (1.84)	0.20 (2.00)	-0.46 (-2.65)	-0.32 (-2.68)	-0.13 (-1.49)	-0.01 (-0.09)	0.12 (1.44)	0.18 (1.89)	-0.50 (-2.83)
PE4	-0.11 (-1.10)	-0.08 (-1.08)	-0.06 (-0.69)	0.01 (0.08)	-0.11 (-0.89)	0.00 (0.02)	-0.10 (-0.97)	-0.03 (-0.36)	-0.00 (-0.01)	-0.02 (-0.19)	-0.14 (-1.16)	0.04 (0.21)
PE5	-0.05 (-0.51)	-0.36 (-4.60)	-0.33 (-4.01)	-0.44 (-4.44)	-0.66 (-4.48)	0.61 (3.51)	-0.04 (-0.44)	-0.35 (-4.63)	-0.32 (-3.96)	-0.45 (-4.54)	-0.66 (-4.48)	0.62 (3.59)
All stocks	-0.02 (-0.26)	-0.10 (-2.54)	-0.03 (-0.80)	0.07 (1.68)	0.06 (1.18)	-0.08 (-0.78)	-0.04 (-0.73)	-0.09 (-2.14)	-0.02 (-0.41)	0.09 (2.05)	0.08 (1.53)	-0.12 (-1.30)
	Panel C: Sort on PE_{FF5} and STR						Panel D: Sort on PE_{HXZ} and STR					
	STR1	STR2	STR3	STR4	STR5	STR1-5	STR1	STR2	STR3	STR4	STR5	STR1-5
PE1	-0.21 (-0.95)	-0.04 (-0.26)	0.09 (0.67)	0.38 (3.44)	0.40 (4.21)	-0.60 (-2.46)	-0.22 (-0.94)	-0.09 (-0.52)	0.09 (0.61)	0.35 (3.03)	0.42 (4.44)	-0.63 (-2.50)
PE2	-0.14 (-0.88)	-0.07 (-0.59)	0.00 (0.00)	0.26 (3.09)	0.40 (4.04)	-0.55 (-2.65)	-0.00 (-0.02)	-0.15 (-1.24)	-0.00 (-0.04)	0.27 (2.92)	0.36 (3.63)	-0.36 (-1.84)
PE3	-0.35 (-2.30)	-0.06 (-0.48)	-0.01 (-0.14)	0.16 (1.66)	0.31 (2.47)	-0.65 (-2.75)	-0.37 (-2.42)	0.04 (0.31)	-0.06 (-0.66)	0.24 (2.56)	0.28 (2.28)	-0.65 (-2.84)
PE4	-0.16 (-1.44)	-0.06 (-0.59)	-0.01 (-0.12)	0.08 (0.79)	0.03 (0.23)	-0.19 (-0.95)	-0.12 (-1.06)	-0.05 (-0.49)	0.01 (0.12)	0.10 (1.02)	0.17 (1.20)	-0.29 (-1.45)
PE5	-0.03 (-0.36)	-0.34 (-3.79)	-0.18 (-1.76)	-0.30 (-2.46)	-0.19 (-1.11)	0.16 (0.81)	-0.01 (-0.09)	-0.36 (-3.61)	-0.18 (-1.68)	-0.29 (-2.28)	-0.16 (-0.93)	0.16 (0.76)
All stocks	-0.09 (-1.23)	-0.17 (-4.17)	-0.04 (-0.84)	0.14 (2.81)	0.24 (4.25)	-0.33 (-3.02)	-0.10 (-1.33)	-0.19 (-3.83)	-0.02 (-0.45)	0.13 (2.42)	0.24 (4.35)	-0.33 (-3.15)
	Panel E: Sort on PE_{SY} and STR						Panel F: Sort on PE_{DHS} and STR					
	STR1	STR2	STR3	STR4	STR5	STR1-5	STR1	STR2	STR3	STR4	STR5	STR1-5
PE1	-0.22 (-0.99)	-0.02 (-0.13)	0.08 (0.55)	0.38 (3.49)	0.40 (4.24)	-0.62 (-2.55)	-0.40 (-1.56)	-0.14 (-0.70)	-0.00 (-0.02)	0.35 (2.90)	0.47 (4.74)	-0.87 (-3.27)
PE2	-0.21 (-1.28)	-0.06 (-0.54)	0.06 (0.54)	0.32 (3.40)	0.36 (3.51)	-0.57 (-2.76)	-0.08 (-0.46)	-0.04 (-0.27)	0.01 (0.04)	0.13 (1.38)	0.35 (3.31)	-0.44 (-1.96)
PE3	-0.37 (-2.61)	-0.10 (-0.98)	0.01 (0.13)	0.21 (2.11)	0.21 (1.68)	-0.58 (-2.56)	-0.47 (-3.21)	-0.00 (-0.01)	0.02 (0.25)	0.21 (2.26)	0.33 (2.79)	-0.79 (-3.55)
PE4	-0.20 (-2.09)	-0.05 (-0.54)	-0.05 (-0.51)	0.01 (0.10)	-0.02 (-0.15)	-0.18 (-1.04)	-0.27 (-2.08)	0.02 (0.15)	0.06 (0.52)	0.05 (0.44)	0.06 (0.40)	-0.33 (-1.45)
PE5	-0.07 (-0.75)	-0.31 (-3.49)	-0.17 (-1.68)	-0.31 (-2.58)	-0.22 (-1.27)	0.15 (0.76)	0.09 (0.79)	-0.32 (-3.02)	-0.25 (-2.08)	-0.31 (-2.21)	-0.19 (-1.04)	0.28 (1.30)
All stocks	-0.14 (-2.10)	-0.15 (-3.46)	-0.02 (-0.43)	0.15 (2.90)	0.22 (3.72)	-0.36 (-3.43)	-0.14 (-1.77)	-0.14 (-2.46)	-0.03 (-0.71)	0.11 (2.00)	0.24 (4.52)	-0.39 (-3.44)

Table A7 Average returns of portfolios sorted by long-term reversal and PE_{CAPM}

This table reports average returns of 25 value-weighted portfolios sequentially sorted by long-term reversal (LTR) and PE (Newey-West t -values in parentheses), where LTR is measured by the prior (13-60) return. The sample period is 1931:08–2018:12.

	PE1	PE2	PE3	PE4	PE5	PE1-5
LTR1	1.15 (4.99)	1.07 (5.19)	0.96 (4.64)	0.63 (3.19)	0.39 (2.10)	0.76 (5.03)
LTR2	1.06 (5.34)	1.01 (5.87)	0.86 (4.68)	0.67 (3.76)	0.39 (2.17)	0.67 (5.38)
LTR3	1.10 (5.81)	0.82 (4.73)	0.65 (3.70)	0.77 (4.78)	0.40 (2.22)	0.71 (5.30)
LTR4	1.10 (5.81)	0.73 (3.92)	0.81 (4.50)	0.60 (3.37)	0.27 (1.46)	0.83 (6.53)
LTR5	0.87 (4.03)	0.85 (3.78)	0.71 (3.33)	0.65 (2.96)	0.48 (2.35)	0.39 (2.45)
All stocks	0.96 (5.57)	0.82 (4.87)	0.73 (4.19)	0.63 (3.79)	0.39 (2.32)	0.56 (5.44)

Table A8 FF3 alphas of portfolios sorted by long-term reversal and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by long-term reversal (LTR) and PE, where LTR is measured by the prior (13-60) return.

	Panel A: Sort on LTR and PE_{CAPM}						Panel B: Sort on LTR and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTR1	0.28 (1.99)	0.21 (2.23)	0.12 (1.23)	-0.20 (-2.02)	-0.33 (-3.45)	0.61 (3.94)	0.28 (2.00)	0.21 (2.31)	0.11 (1.13)	-0.17 (-1.71)	-0.33 (-3.39)	0.61 (3.89)
LTR2	0.32 (3.45)	0.27 (3.66)	0.13 (1.72)	0.00 (0.04)	-0.26 (-2.67)	0.58 (4.80)	0.35 (3.89)	0.23 (3.21)	0.07 (1.00)	0.04 (0.49)	-0.26 (-2.64)	0.61 (5.11)
LTR3	0.42 (4.71)	0.18 (2.22)	0.02 (0.22)	0.12 (1.75)	-0.26 (-2.87)	0.68 (5.08)	0.45 (4.91)	0.23 (2.83)	-0.02 (-0.26)	0.08 (1.03)	-0.25 (-2.84)	0.70 (5.17)
LTR4	0.46 (4.98)	0.05 (0.58)	0.16 (1.93)	-0.03 (-0.45)	-0.38 (-4.29)	0.83 (6.16)	0.48 (5.28)	0.04 (0.47)	0.13 (1.63)	-0.05 (-0.74)	-0.37 (-4.33)	0.85 (6.37)
LTR5	0.22 (2.00)	0.10 (1.03)	0.01 (0.18)	-0.07 (-0.81)	-0.15 (-1.56)	0.38 (2.39)	0.26 (2.29)	0.05 (0.57)	0.00 (0.02)	-0.07 (-0.80)	-0.16 (-1.68)	0.42 (2.69)
All stocks	0.32 (5.01)	0.16 (3.63)	0.08 (1.80)	-0.01 (-0.28)	-0.24 (-3.83)	0.55 (5.39)	0.35 (5.50)	0.14 (3.26)	0.06 (1.37)	-0.02 (-0.49)	-0.24 (-3.89)	0.58 (5.78)
	Panel C: Sort on LTR and PE_{FF5}						Panel D: Sort on LTR and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTR1	0.11 (0.52)	0.18 (1.47)	0.13 (1.03)	-0.11 (-1.04)	-0.29 (-2.72)	0.39 (1.77)	0.11 (0.53)	0.13 (1.03)	0.13 (0.96)	-0.08 (-0.68)	-0.28 (-2.69)	0.39 (1.77)
LTR2	0.26 (2.28)	0.28 (3.45)	0.03 (0.41)	0.09 (0.78)	-0.28 (-2.56)	0.54 (3.55)	0.28 (2.42)	0.23 (2.66)	0.10 (1.13)	0.05 (0.41)	-0.22 (-1.97)	0.50 (3.29)
LTR3	0.51 (4.55)	0.25 (2.50)	0.03 (0.34)	0.11 (1.02)	-0.18 (-1.82)	0.70 (4.28)	0.45 (3.86)	0.13 (1.46)	-0.04 (-0.42)	0.15 (1.45)	-0.21 (-1.89)	0.65 (3.72)
LTR4	0.43 (3.64)	0.09 (0.81)	0.20 (1.84)	0.01 (0.10)	-0.32 (-3.20)	0.75 (4.81)	0.51 (4.20)	0.10 (0.82)	0.22 (1.90)	-0.07 (-0.90)	-0.31 (-2.94)	0.82 (5.03)
LTR5	0.22 (1.83)	0.19 (1.49)	0.14 (1.33)	-0.22 (-2.11)	-0.09 (-0.74)	0.31 (1.70)	0.26 (1.96)	0.22 (1.76)	0.14 (1.26)	-0.11 (-1.05)	-0.10 (-0.83)	0.36 (1.85)
All stocks	0.31 (3.86)	0.15 (2.73)	0.05 (0.88)	-0.04 (-0.90)	-0.21 (-3.12)	0.52 (4.23)	0.32 (3.64)	0.11 (1.95)	0.06 (1.11)	-0.03 (-0.61)	-0.21 (-2.96)	0.53 (4.01)
	Panel E: Sort on LTR and PE_{SY}						Panel F: Sort on LTR and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTR1	0.15 (0.76)	0.14 (1.11)	0.15 (1.18)	-0.11 (-1.00)	-0.34 (-3.21)	0.49 (2.29)	-0.03 (-0.13)	0.15 (1.12)	0.22 (1.49)	-0.14 (-1.12)	-0.31 (-2.42)	0.27 (1.06)
LTR2	0.27 (2.45)	0.23 (2.82)	0.05 (0.54)	0.03 (0.31)	-0.29 (-2.62)	0.56 (3.77)	0.24 (1.87)	0.27 (3.20)	0.08 (0.79)	0.06 (0.50)	-0.15 (-1.27)	0.39 (2.46)
LTR3	0.43 (3.89)	0.27 (2.47)	-0.05 (-0.59)	0.10 (0.97)	-0.15 (-1.46)	0.58 (3.47)	0.33 (2.84)	0.16 (1.69)	0.08 (0.76)	0.25 (2.27)	-0.17 (-1.36)	0.49 (2.66)
LTR4	0.40 (3.45)	0.12 (1.01)	0.22 (2.03)	0.01 (0.07)	-0.32 (-3.29)	0.72 (4.74)	0.47 (3.41)	0.16 (1.31)	0.18 (1.33)	-0.03 (-0.35)	-0.35 (-2.91)	0.81 (4.37)
LTR5	0.25 (2.01)	0.13 (1.16)	0.05 (0.46)	-0.11 (-0.97)	-0.12 (-1.01)	0.37 (2.00)	0.30 (2.14)	0.18 (1.29)	0.20 (1.71)	-0.14 (-1.11)	-0.13 (-0.95)	0.43 (2.04)
All stocks	0.31 (3.87)	0.14 (2.52)	0.01 (0.19)	-0.01 (-0.28)	-0.22 (-3.24)	0.54 (4.31)	0.29 (3.10)	0.12 (1.93)	0.11 (1.68)	-0.04 (-0.64)	-0.20 (-2.48)	0.49 (3.37)

Table A9 FF3 alphas of portfolios sorted by IVOL and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by IVOL and PE, where IVOL is estimated as [Ang, Hodrick, Xing, and Zhang \(2006\)](#).

	Panel A: Sort on IVOL and PE_{CAPM}						Panel B: Sort on IVOL and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.46 (6.27)	0.16 (2.63)	0.13 (1.79)	0.19 (2.73)	-0.11 (-1.35)	0.57 (5.09)	0.49 (6.49)	0.17 (2.58)	0.19 (2.78)	0.10 (1.48)	-0.08 (-0.97)	0.57 (4.98)
IVOL2	0.36 (4.22)	0.17 (2.46)	-0.06 (-1.00)	-0.09 (-1.40)	-0.17 (-2.34)	0.52 (4.47)	0.37 (4.44)	0.18 (2.58)	-0.02 (-0.23)	-0.15 (-2.42)	-0.16 (-2.14)	0.53 (4.56)
IVOL3	0.34 (3.49)	0.04 (0.51)	-0.07 (-1.05)	-0.11 (-1.48)	-0.40 (-4.60)	0.74 (5.27)	0.32 (3.26)	0.08 (1.08)	-0.07 (-0.92)	-0.10 (-1.33)	-0.42 (-4.83)	0.74 (5.22)
IVOL4	0.11 (0.92)	-0.10 (-1.12)	-0.12 (-1.33)	-0.22 (-2.39)	-0.41 (-3.75)	0.51 (2.89)	0.13 (1.16)	-0.07 (-0.82)	-0.13 (-1.48)	-0.22 (-2.31)	-0.44 (-3.97)	0.57 (3.24)
IVOL5	-0.11 (-0.66)	-0.40 (-3.22)	-0.41 (-3.26)	-0.67 (-5.95)	-0.90 (-5.50)	0.79 (3.11)	-0.08 (-0.51)	-0.42 (-3.36)	-0.42 (-3.41)	-0.68 (-6.04)	-0.89 (-5.45)	0.80 (3.19)
All stocks	0.32 (5.58)	0.12 (2.88)	0.03 (0.81)	-0.02 (-0.44)	-0.20 (-3.67)	0.53 (5.53)	0.33 (5.61)	0.12 (2.73)	0.09 (2.03)	-0.06 (-1.61)	-0.20 (-3.57)	0.53 (5.52)
	Panel C: Sort on IVOL and PE_{FF5}						Panel D: Sort on IVOL and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.55 (6.67)	0.24 (2.86)	0.18 (1.86)	-0.06 (-0.70)	-0.17 (-1.90)	0.72 (6.12)	0.55 (6.44)	0.23 (2.54)	0.17 (1.63)	0.03 (0.33)	-0.20 (-2.16)	0.74 (5.98)
IVOL2	0.37 (3.39)	0.09 (1.10)	0.02 (0.23)	-0.12 (-1.57)	-0.12 (-1.43)	0.50 (3.60)	0.35 (3.04)	0.10 (1.22)	-0.00 (-0.05)	-0.09 (-1.13)	-0.13 (-1.46)	0.48 (3.31)
IVOL3	0.17 (1.30)	0.09 (0.93)	0.07 (0.74)	-0.02 (-0.18)	-0.26 (-2.19)	0.42 (2.16)	0.10 (0.74)	0.08 (0.77)	0.13 (1.25)	-0.06 (-0.60)	-0.25 (-2.00)	0.35 (1.68)
IVOL4	-0.02 (-0.10)	-0.07 (-0.54)	-0.10 (-0.83)	-0.10 (-0.89)	-0.06 (-0.49)	0.04 (0.19)	-0.04 (-0.22)	-0.09 (-0.70)	-0.10 (-0.79)	-0.02 (-0.16)	-0.06 (-0.51)	0.02 (0.09)
IVOL5	-0.62 (-3.20)	-0.55 (-3.61)	-0.58 (-3.51)	-0.53 (-3.84)	-0.39 (-2.42)	-0.23 (-0.91)	-0.58 (-2.98)	-0.64 (-3.88)	-0.54 (-3.12)	-0.42 (-2.91)	-0.31 (-1.83)	-0.27 (-1.05)
All stocks	0.32 (4.21)	0.09 (1.61)	0.10 (1.84)	-0.10 (-1.89)	-0.16 (-2.56)	0.47 (4.12)	0.29 (3.79)	0.07 (1.26)	0.10 (1.67)	-0.04 (-0.76)	-0.18 (-2.77)	0.47 (3.85)
	Panel E: Sort on IVOL and PE_{SY}						Panel F: Sort on IVOL and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.48 (5.81)	0.28 (3.13)	0.16 (1.72)	-0.00 (-0.02)	-0.20 (-2.33)	0.68 (5.89)	0.51 (5.53)	0.36 (3.92)	0.20 (1.85)	0.18 (1.72)	-0.24 (-2.19)	0.75 (5.15)
IVOL2	0.36 (3.18)	0.08 (0.98)	0.01 (0.15)	-0.14 (-1.83)	-0.09 (-1.06)	0.46 (3.27)	0.39 (3.05)	0.00 (0.00)	0.00 (0.00)	-0.08 (-0.83)	-0.12 (-1.21)	0.51 (3.27)
IVOL3	0.14 (1.09)	0.19 (1.79)	0.10 (1.12)	-0.04 (-0.36)	-0.26 (-2.14)	0.40 (2.01)	0.07 (0.50)	0.07 (0.60)	0.07 (0.65)	-0.02 (-0.13)	-0.26 (-2.10)	0.33 (1.65)
IVOL4	-0.04 (-0.25)	-0.04 (-0.36)	-0.14 (-1.14)	-0.01 (-0.08)	-0.11 (-0.86)	0.06 (0.27)	-0.12 (-0.57)	-0.21 (-1.40)	-0.02 (-0.14)	-0.10 (-0.83)	-0.06 (-0.42)	-0.06 (-0.22)
IVOL5	-0.56 (-3.02)	-0.67 (-4.12)	-0.51 (-3.34)	-0.61 (-4.46)	-0.36 (-2.26)	-0.19 (-0.81)	-0.80 (-3.72)	-0.64 (-3.34)	-0.50 (-2.89)	-0.48 (-3.06)	-0.37 (-2.04)	-0.43 (-1.53)
All stocks	0.29 (3.86)	0.14 (2.60)	0.09 (1.77)	-0.09 (-1.72)	-0.16 (-2.52)	0.45 (3.77)	0.27 (3.20)	0.09 (1.61)	0.10 (1.72)	0.01 (0.18)	-0.18 (-2.38)	0.45 (3.28)

Table A10 Alphas of portfolios sorted by IVOL and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sequentially sorted by IVOL and PE_{CAPM} (Newey-West t -values in parentheses), where IVOL is estimated as [Ang, Hodrick, Xing, and Zhang \(2006\)](#).

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.44 (6.03)	0.17 (2.49)	0.12 (1.51)	0.18 (2.57)	-0.09 (-1.16)	0.53 (5.07)	0.46 (6.27)	0.16 (2.63)	0.13 (1.79)	0.19 (2.73)	-0.11 (-1.35)	0.57 (5.09)
IVOL2	0.38 (4.32)	0.20 (2.92)	-0.04 (-0.58)	-0.07 (-1.03)	-0.17 (-2.35)	0.55 (4.75)	0.36 (4.22)	0.17 (2.46)	-0.06 (-1.00)	-0.09 (-1.40)	-0.17 (-2.34)	0.52 (4.47)
IVOL3	0.37 (3.77)	0.08 (0.99)	-0.02 (-0.21)	-0.07 (-0.90)	-0.37 (-4.37)	0.75 (5.43)	0.34 (3.49)	0.04 (0.51)	-0.07 (-1.05)	-0.11 (-1.48)	-0.40 (-4.60)	0.74 (5.27)
IVOL4	0.17 (1.45)	-0.02 (-0.19)	-0.08 (-0.78)	-0.15 (-1.52)	-0.36 (-3.35)	0.53 (3.04)	0.11 (0.92)	-0.10 (-1.12)	-0.12 (-1.33)	-0.22 (-2.39)	-0.41 (-3.75)	0.51 (2.89)
IVOL5	0.04 (0.22)	-0.27 (-1.75)	-0.28 (-1.90)	-0.60 (-4.80)	-0.80 (-4.91)	0.84 (3.31)	-0.11 (-0.66)	-0.40 (-3.22)	-0.41 (-3.26)	-0.67 (-5.95)	-0.90 (-5.50)	0.79 (3.11)
All stocks	0.32 (5.63)	0.12 (3.02)	0.03 (0.59)	-0.01 (-0.30)	-0.20 (-3.72)	0.51 (5.86)	0.32 (5.58)	0.12 (2.88)	0.03 (0.81)	-0.02 (-0.44)	-0.20 (-3.67)	0.53 (5.53)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.39 (4.89)	0.11 (1.30)	-0.03 (-0.33)	0.13 (1.10)	-0.39 (-5.24)	0.79 (7.23)	0.40 (4.39)	0.10 (1.07)	-0.05 (-0.43)	0.08 (0.64)	-0.43 (-4.48)	0.82 (6.80)
IVOL2	0.22 (2.12)	0.05 (0.53)	-0.16 (-1.78)	-0.23 (-2.60)	-0.23 (-2.67)	0.45 (3.12)	0.21 (1.76)	0.00 (0.04)	-0.25 (-2.32)	-0.27 (-2.61)	-0.24 (-2.53)	0.46 (2.86)
IVOL3	0.09 (0.70)	0.08 (0.86)	0.00 (0.00)	-0.03 (-0.37)	-0.32 (-2.85)	0.41 (2.16)	0.19 (1.24)	0.15 (1.40)	-0.04 (-0.42)	-0.06 (-0.67)	-0.35 (-2.93)	0.54 (2.46)
IVOL4	-0.01 (-0.06)	-0.07 (-0.61)	0.03 (0.29)	-0.00 (-0.03)	-0.02 (-0.14)	0.01 (0.04)	0.18 (0.91)	0.03 (0.22)	0.03 (0.26)	-0.04 (-0.39)	-0.06 (-0.44)	0.25 (0.88)
IVOL5	-0.42 (-2.19)	-0.25 (-1.61)	-0.38 (-2.56)	-0.26 (-2.03)	-0.19 (-1.20)	-0.23 (-0.86)	-0.32 (-1.54)	-0.15 (-0.87)	-0.32 (-1.82)	-0.11 (-0.79)	-0.14 (-0.77)	-0.19 (-0.61)
All stocks	0.22 (2.90)	0.11 (2.12)	-0.01 (-0.17)	-0.02 (-0.50)	-0.25 (-3.86)	0.46 (3.76)	0.30 (3.20)	0.14 (2.24)	-0.03 (-0.43)	-0.07 (-1.19)	-0.26 (-3.47)	0.56 (3.73)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IVOL1	0.43 (4.83)	0.10 (1.14)	-0.06 (-0.58)	-0.03 (-0.36)	-0.47 (-5.77)	0.90 (7.69)	0.53 (4.58)	0.05 (0.57)	-0.13 (-1.24)	-0.05 (-0.41)	-0.55 (-6.04)	1.08 (7.12)
IVOL2	0.36 (3.03)	0.05 (0.48)	-0.19 (-1.60)	-0.23 (-2.24)	-0.28 (-3.27)	0.64 (4.48)	0.54 (3.88)	0.09 (0.74)	-0.14 (-1.32)	-0.16 (-1.64)	-0.41 (-3.83)	0.94 (5.25)
IVOL3	0.32 (2.55)	0.25 (2.35)	-0.01 (-0.14)	-0.02 (-0.17)	-0.39 (-3.28)	0.72 (3.68)	0.53 (3.33)	0.32 (2.57)	0.17 (1.62)	-0.03 (-0.23)	-0.50 (-3.57)	1.03 (4.31)
IVOL4	0.25 (1.49)	0.06 (0.53)	0.09 (0.77)	0.06 (0.53)	-0.09 (-0.76)	0.35 (1.52)	0.42 (1.89)	0.32 (2.31)	0.34 (2.33)	0.12 (0.83)	-0.15 (-1.16)	0.57 (2.13)
IVOL5	-0.02 (-0.12)	-0.05 (-0.28)	-0.33 (-1.97)	-0.06 (-0.43)	-0.25 (-1.49)	0.23 (0.95)	0.18 (0.86)	0.29 (1.31)	0.14 (0.67)	0.18 (0.94)	-0.10 (-0.47)	0.28 (1.03)
All stocks	0.36 (4.73)	0.19 (3.29)	-0.03 (-0.50)	-0.08 (-1.56)	-0.33 (-5.33)	0.69 (5.61)	0.51 (5.03)	0.18 (2.92)	0.02 (0.31)	-0.11 (-1.99)	-0.44 (-5.65)	0.95 (5.99)

Table A11 FF3 alphas of portfolios sorted by IO and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by institutional ownership (IO) and PE, where IO is calculated as [Nagel \(2005\)](#). The sample period is 1980:03–2015:12.

	Panel A: Sort on IO and PE_{CAPM}						Panel B: Sort on IO and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.29 (1.51)	-0.24 (-1.40)	0.14 (0.91)	0.11 (0.78)	-0.22 (-1.28)	0.51 (2.01)	0.27 (1.38)	-0.24 (-1.45)	0.21 (1.45)	0.07 (0.46)	-0.23 (-1.38)	0.50 (2.00)
IO2	0.33 (1.69)	0.12 (0.86)	0.29 (2.40)	0.13 (1.05)	-0.26 (-1.64)	0.58 (2.26)	0.32 (1.70)	0.22 (1.63)	0.22 (1.82)	0.09 (0.73)	-0.27 (-1.71)	0.59 (2.28)
IO3	0.28 (1.98)	0.31 (2.57)	-0.01 (-0.08)	0.14 (1.20)	-0.16 (-1.22)	0.43 (2.19)	0.35 (2.49)	0.12 (1.06)	0.15 (1.11)	0.18 (1.49)	-0.22 (-1.75)	0.58 (2.82)
IO4	0.21 (1.57)	0.18 (1.76)	0.08 (0.87)	0.12 (1.48)	-0.14 (-1.27)	0.35 (1.78)	0.22 (1.75)	0.22 (2.16)	0.09 (0.89)	0.10 (1.13)	-0.19 (-1.73)	0.41 (2.16)
IO5	-0.13 (-0.76)	0.08 (0.73)	-0.02 (-0.22)	-0.04 (-0.42)	-0.13 (-1.11)	0.01 (0.03)	-0.10 (-0.61)	0.09 (0.89)	-0.04 (-0.33)	-0.07 (-0.69)	-0.12 (-0.98)	0.02 (0.08)
All stocks	0.20 (1.94)	0.18 (2.82)	0.07 (0.93)	0.06 (0.87)	-0.16 (-1.80)	0.37 (2.25)	0.23 (2.20)	0.17 (2.74)	0.10 (1.54)	0.06 (0.88)	-0.20 (-2.30)	0.43 (2.66)
	Panel C: Sort on IO and PE_{FF5}						Panel D: Sort on IO and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.30 (1.47)	-0.16 (-1.02)	0.22 (1.42)	0.04 (0.28)	-0.20 (-1.14)	0.50 (1.88)	0.30 (1.48)	-0.27 (-1.65)	0.17 (1.12)	0.04 (0.28)	-0.20 (-1.21)	0.50 (1.91)
IO2	0.43 (2.21)	0.23 (1.67)	0.10 (0.91)	0.06 (0.42)	-0.27 (-1.71)	0.70 (2.71)	0.36 (1.87)	0.25 (1.68)	0.15 (1.17)	0.00 (0.02)	-0.22 (-1.40)	0.58 (2.17)
IO3	0.33 (2.48)	0.13 (1.21)	0.10 (0.85)	0.18 (1.53)	-0.26 (-2.10)	0.58 (3.11)	0.33 (2.30)	0.23 (2.09)	0.10 (0.76)	0.18 (1.42)	-0.20 (-1.58)	0.53 (2.72)
IO4	0.25 (1.94)	0.20 (1.95)	0.02 (0.27)	0.13 (1.51)	-0.21 (-1.84)	0.45 (2.39)	0.23 (1.82)	0.20 (1.97)	0.06 (0.59)	0.13 (1.50)	-0.19 (-1.79)	0.42 (2.26)
IO5	-0.09 (-0.52)	0.07 (0.69)	0.00 (0.03)	-0.10 (-1.01)	-0.14 (-1.10)	0.05 (0.21)	-0.11 (-0.63)	0.12 (1.10)	-0.02 (-0.21)	-0.09 (-0.91)	-0.14 (-1.08)	0.04 (0.15)
All stocks	0.24 (2.47)	0.17 (2.51)	0.07 (1.26)	0.04 (0.59)	-0.20 (-2.27)	0.45 (2.81)	0.23 (2.24)	0.20 (2.91)	0.07 (1.12)	0.05 (0.78)	-0.20 (-2.32)	0.43 (2.69)
	Panel E: Sort on IO and PE_{SY}						Panel F: Sort on IO and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.31 (1.53)	-0.20 (-1.24)	0.21 (1.35)	-0.03 (-0.21)	-0.17 (-0.93)	0.48 (1.78)	0.24 (1.21)	-0.13 (-0.76)	0.08 (0.53)	0.07 (0.51)	-0.18 (-1.01)	0.43 (1.59)
IO2	0.39 (2.09)	0.25 (1.66)	0.12 (1.01)	0.02 (0.13)	-0.23 (-1.42)	0.62 (2.40)	0.35 (1.88)	0.14 (0.99)	0.17 (1.35)	0.09 (0.72)	-0.31 (-1.93)	0.66 (2.55)
IO3	0.34 (2.55)	0.29 (2.31)	0.02 (0.17)	0.24 (2.02)	-0.22 (-1.78)	0.56 (2.91)	0.32 (2.29)	0.23 (1.79)	0.10 (0.94)	0.20 (1.69)	-0.21 (-1.65)	0.53 (2.61)
IO4	0.21 (1.64)	0.18 (1.86)	0.08 (0.81)	0.11 (1.32)	-0.16 (-1.40)	0.37 (1.91)	0.23 (1.84)	0.14 (1.49)	0.09 (0.99)	0.12 (1.36)	-0.17 (-1.52)	0.40 (2.14)
IO5	-0.11 (-0.62)	0.09 (0.81)	-0.02 (-0.21)	-0.09 (-0.98)	-0.15 (-1.16)	0.04 (0.18)	-0.09 (-0.55)	0.03 (0.27)	0.00 (0.03)	-0.04 (-0.38)	-0.18 (-1.37)	0.08 (0.35)
All stocks	0.23 (2.24)	0.21 (3.02)	0.05 (0.75)	0.05 (0.78)	-0.19 (-2.14)	0.42 (2.59)	0.22 (2.11)	0.16 (2.59)	0.07 (1.13)	0.07 (1.02)	-0.21 (-2.28)	0.43 (2.58)

Table A12 Alphas of portfolios sorted by IO and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sequentially sorted by institutional ownership (IO) and PE_{CAPM} (Newey-West *t*-values in parentheses), where IO is calculated as Nagel (2005) and PE_{CAPM} is the CAPM's estimated with the past 60-month returns with a requirement of at least 50 observations.

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.39	-0.14	0.26	0.16	-0.17	0.56	0.29	-0.24	0.14	0.11	-0.22	0.51
	(2.00)	(-0.72)	(1.51)	(1.03)	(-0.97)	(2.38)	(1.51)	(-1.40)	(0.91)	(0.78)	(-1.28)	(2.01)
IO2	0.47	0.19	0.34	0.23	-0.21	0.69	0.33	0.12	0.29	0.13	-0.26	0.58
	(2.23)	(1.25)	(2.95)	(1.71)	(-1.51)	(2.76)	(1.69)	(0.86)	(2.40)	(1.05)	(-1.64)	(2.26)
IO3	0.35	0.32	0.03	0.17	-0.11	0.46	0.28	0.31	-0.01	0.14	-0.16	0.43
	(2.45)	(2.52)	(0.21)	(1.43)	(-0.87)	(2.33)	(1.98)	(2.57)	(-0.08)	(1.20)	(-1.22)	(2.19)
IO4	0.28	0.23	0.13	0.15	-0.11	0.39	0.21	0.18	0.08	0.12	-0.14	0.35
	(1.97)	(2.12)	(1.47)	(1.89)	(-0.92)	(2.03)	(1.57)	(1.76)	(0.87)	(1.48)	(-1.27)	(1.78)
IO5	-0.01	0.14	0.03	0.00	-0.14	0.13	-0.13	0.08	-0.02	-0.04	-0.13	0.01
	(-0.06)	(1.33)	(0.31)	(0.02)	(-1.23)	(0.60)	(-0.76)	(0.73)	(-0.22)	(-0.42)	(-1.11)	(0.03)
All stocks	0.27	0.20	0.09	0.06	-0.16	0.42	0.20	0.18	0.07	0.06	-0.16	0.37
	(2.38)	(2.92)	(1.34)	(0.99)	(-1.74)	(2.66)	(1.94)	(2.82)	(0.93)	(0.87)	(-1.80)	(2.25)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.23	-0.19	0.05	0.04	-0.13	0.36	0.36	-0.13	0.04	-0.05	-0.27	0.63
	(1.21)	(-0.98)	(0.35)	(0.27)	(-0.71)	(1.27)	(1.70)	(-0.61)	(0.24)	(-0.33)	(-1.40)	(1.98)
IO2	0.30	0.05	0.25	0.02	-0.28	0.58	0.36	0.05	0.23	-0.02	-0.30	0.65
	(1.56)	(0.37)	(1.89)	(0.16)	(-1.37)	(1.82)	(1.43)	(0.33)	(1.66)	(-0.12)	(-1.49)	(1.77)
IO3	0.28	0.38	-0.06	0.11	-0.14	0.42	0.44	0.37	-0.05	0.09	-0.11	0.56
	(1.86)	(3.09)	(-0.43)	(0.85)	(-1.00)	(1.92)	(2.60)	(2.71)	(-0.33)	(0.80)	(-0.74)	(2.19)
IO4	0.14	0.09	0.02	0.07	-0.25	0.39	0.27	0.16	0.01	0.04	-0.26	0.54
	(1.01)	(0.88)	(0.17)	(0.79)	(-2.19)	(1.90)	(1.80)	(1.41)	(0.06)	(0.38)	(-2.30)	(2.51)
IO5	-0.22	0.01	-0.10	-0.04	-0.14	-0.09	-0.11	-0.01	-0.12	-0.08	-0.20	0.09
	(-1.20)	(0.06)	(-0.91)	(-0.36)	(-0.79)	(-0.29)	(-0.53)	(-0.09)	(-0.95)	(-0.60)	(-1.19)	(0.27)
All stocks	0.17	0.13	-0.01	0.03	-0.22	0.38	0.28	0.13	-0.02	-0.02	-0.24	0.52
	(1.41)	(2.02)	(-0.16)	(0.36)	(-2.05)	(1.93)	(1.87)	(1.79)	(-0.30)	(-0.20)	(-2.18)	(2.26)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
IO1	0.42	-0.21	0.08	-0.18	-0.47	0.89	0.58	0.13	0.28	0.02	-0.27	0.86
	(2.21)	(-1.09)	(0.51)	(-1.20)	(-2.62)	(3.59)	(2.83)	(0.63)	(1.39)	(0.13)	(-1.55)	(3.23)
IO2	0.47	0.02	0.11	-0.10	-0.53	1.00	0.66	0.16	0.20	0.00	-0.47	1.13
	(2.48)	(0.15)	(0.78)	(-0.74)	(-3.24)	(3.71)	(2.50)	(0.98)	(1.49)	(0.02)	(-3.04)	(3.38)
IO3	0.51	0.40	0.01	0.12	-0.19	0.70	0.63	0.34	-0.02	0.05	-0.42	1.04
	(3.24)	(3.09)	(0.10)	(0.97)	(-1.34)	(2.96)	(3.60)	(2.67)	(-0.15)	(0.37)	(-2.88)	(4.07)
IO4	0.40	0.19	0.01	0.08	-0.24	0.65	0.53	0.25	0.09	0.03	-0.41	0.94
	(2.93)	(1.40)	(0.07)	(0.82)	(-2.19)	(3.32)	(4.08)	(2.00)	(0.77)	(0.28)	(-3.22)	(5.04)
IO5	0.01	0.11	-0.05	-0.11	-0.33	0.34	0.24	0.25	0.00	0.03	-0.28	0.52
	(0.10)	(0.83)	(-0.45)	(-0.82)	(-2.48)	(1.56)	(1.33)	(2.17)	(0.03)	(0.26)	(-1.90)	(2.05)
All stocks	0.37	0.19	-0.01	-0.04	-0.31	0.68	0.50	0.20	0.02	-0.06	-0.44	0.94
	(3.56)	(2.28)	(-0.07)	(-0.51)	(-3.04)	(3.84)	(3.97)	(2.40)	(0.20)	(-0.86)	(-4.23)	(4.80)

Table A13 FF3 alphas of portfolios sorted by MAX and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by MAX and PE, where MAX measures the lottery demand and is defined as the average of the 5 highest daily returns in the portfolio formation month (Bali, Cakici, and Whitelaw, 2011).

	Panel A: Sort on MAX and PE_{CAPM}						Panel B: Sort on MAX and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.60 (7.14)	0.29 (4.20)	0.16 (2.30)	0.13 (1.58)	-0.06 (-0.79)	0.66 (5.98)	0.59 (7.07)	0.35 (5.09)	0.13 (1.80)	0.13 (1.68)	-0.05 (-0.65)	0.65 (5.69)
MAX2	0.33 (3.74)	0.24 (3.50)	0.11 (1.37)	0.06 (0.93)	-0.09 (-1.24)	0.42 (3.56)	0.35 (4.05)	0.21 (2.95)	0.12 (1.46)	0.06 (1.00)	-0.10 (-1.44)	0.45 (3.94)
MAX3	0.26 (2.61)	0.10 (1.28)	0.02 (0.28)	-0.09 (-1.28)	-0.23 (-2.83)	0.48 (3.76)	0.26 (2.68)	0.15 (1.83)	-0.04 (-0.57)	-0.09 (-1.30)	-0.21 (-2.66)	0.47 (3.72)
MAX4	0.12 (1.00)	-0.19 (-2.07)	-0.08 (-0.95)	-0.18 (-1.77)	-0.36 (-3.70)	0.48 (2.88)	0.14 (1.16)	-0.14 (-1.55)	-0.12 (-1.29)	-0.11 (-1.09)	-0.38 (-3.94)	0.52 (3.06)
MAX5	-0.30 (-1.92)	-0.44 (-3.78)	-0.25 (-2.04)	-0.47 (-4.34)	-0.84 (-5.49)	0.54 (2.26)	-0.28 (-1.77)	-0.43 (-3.55)	-0.28 (-2.46)	-0.40 (-3.67)	-0.86 (-5.71)	0.58 (2.45)
All stocks	0.29 (4.59)	0.12 (2.95)	0.09 (2.11)	0.01 (0.35)	-0.18 (-3.21)	0.47 (4.69)	0.30 (4.80)	0.13 (3.25)	0.06 (1.37)	0.03 (0.83)	-0.18 (-3.32)	0.49 (4.90)
	Panel C: Sort on MAX and PE_{FF5}						Panel D: Sort on MAX and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.53 (5.36)	0.26 (3.05)	0.16 (1.55)	0.01 (0.10)	-0.25 (-2.58)	0.77 (5.54)	0.55 (5.42)	0.25 (2.80)	0.09 (0.87)	0.02 (0.21)	-0.21 (-2.11)	0.76 (5.20)
MAX2	0.36 (3.33)	0.22 (2.39)	0.17 (1.79)	0.05 (0.62)	-0.25 (-3.31)	0.61 (4.07)	0.28 (2.45)	0.28 (3.05)	0.20 (1.89)	-0.00 (-0.04)	-0.23 (-2.75)	0.50 (3.15)
MAX3	0.23 (1.70)	0.30 (2.68)	-0.12 (-1.39)	-0.02 (-0.19)	-0.13 (-1.39)	0.35 (2.09)	0.23 (1.71)	0.26 (2.27)	0.00 (0.00)	-0.07 (-0.73)	-0.12 (-1.24)	0.35 (2.02)
MAX4	0.05 (0.26)	-0.04 (-0.33)	-0.02 (-0.14)	0.05 (0.45)	-0.12 (-1.06)	0.17 (0.72)	0.07 (0.35)	-0.11 (-0.81)	-0.03 (-0.30)	0.13 (1.10)	-0.14 (-1.15)	0.21 (0.86)
MAX5	-0.59 (-2.65)	-0.53 (-3.51)	-0.12 (-0.77)	-0.32 (-2.50)	-0.33 (-2.51)	-0.26 (-0.98)	-0.59 (-2.54)	-0.48 (-2.93)	-0.14 (-0.88)	-0.19 (-1.37)	-0.27 (-2.05)	-0.32 (-1.16)
All stocks	0.26 (3.15)	0.15 (3.08)	0.06 (1.12)	0.04 (0.88)	-0.20 (-3.10)	0.46 (3.51)	0.24 (2.65)	0.17 (3.40)	0.07 (1.24)	0.02 (0.36)	-0.18 (-2.72)	0.42 (3.00)
	Panel E: Sort on MAX and PE_{SY}						Panel F: Sort on MAX and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.50 (4.95)	0.31 (3.95)	0.07 (0.69)	0.03 (0.32)	-0.26 (-2.73)	0.75 (5.36)	0.51 (4.64)	0.30 (3.28)	0.21 (2.00)	0.11 (0.96)	-0.18 (-1.68)	0.69 (4.24)
MAX2	0.32 (2.99)	0.24 (2.61)	0.20 (2.02)	-0.02 (-0.29)	-0.22 (-2.83)	0.54 (3.61)	0.30 (2.45)	0.20 (2.22)	0.27 (2.39)	0.07 (0.74)	-0.18 (-2.00)	0.49 (2.71)
MAX3	0.24 (1.86)	0.21 (1.95)	-0.02 (-0.24)	-0.05 (-0.56)	-0.11 (-1.21)	0.35 (2.09)	0.24 (1.62)	0.14 (1.21)	-0.03 (-0.32)	-0.05 (-0.49)	-0.13 (-1.19)	0.37 (1.98)
MAX4	0.05 (0.30)	-0.03 (-0.22)	-0.02 (-0.17)	0.09 (0.73)	-0.19 (-1.61)	0.24 (1.09)	0.01 (0.03)	-0.30 (-2.20)	0.07 (0.53)	0.07 (0.52)	-0.20 (-1.52)	0.20 (0.79)
MAX5	-0.57 (-2.54)	-0.57 (-3.85)	-0.10 (-0.64)	-0.28 (-2.11)	-0.33 (-2.50)	-0.24 (-0.89)	-0.89 (-3.44)	-0.47 (-2.87)	-0.14 (-0.84)	-0.30 (-2.01)	-0.29 (-1.99)	-0.60 (-1.95)
All stocks	0.25 (2.96)	0.17 (3.43)	0.06 (1.07)	0.03 (0.55)	-0.20 (-3.11)	0.45 (3.40)	0.20 (2.06)	0.11 (2.09)	0.12 (2.05)	0.03 (0.51)	-0.17 (-2.19)	0.37 (2.36)

Table A14 Alphas of portfolios sorted by MAX and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sequentially sorted by MAX and PE_{CAPM} (Newey-West t -values in parentheses), where MAX measures the lottery demand and is defined as the average of the 5 highest daily returns in the portfolio formation month (Bali, Cakici, and Whitelaw, 2011).

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.57 (7.22)	0.29 (4.11)	0.16 (2.22)	0.12 (1.48)	-0.05 (-0.67)	0.63 (5.89)	0.60 (7.14)	0.29 (4.20)	0.16 (2.30)	0.13 (1.58)	-0.06 (-0.79)	0.66 (5.98)
MAX2	0.36 (4.12)	0.24 (3.23)	0.12 (1.53)	0.06 (1.02)	-0.10 (-1.28)	0.46 (3.89)	0.33 (3.74)	0.24 (3.50)	0.11 (1.37)	0.06 (0.93)	-0.09 (-1.24)	0.42 (3.56)
MAX3	0.29 (2.90)	0.14 (1.67)	0.08 (1.04)	-0.04 (-0.59)	-0.19 (-2.43)	0.48 (3.97)	0.26 (2.61)	0.10 (1.28)	0.02 (0.28)	-0.09 (-1.28)	-0.23 (-2.83)	0.48 (3.76)
MAX4	0.19 (1.56)	-0.13 (-1.25)	0.00 (0.02)	-0.12 (-1.29)	-0.35 (-3.58)	0.55 (3.28)	0.12 (1.00)	-0.19 (-2.07)	-0.08 (-0.95)	-0.18 (-1.77)	-0.36 (-3.70)	0.48 (2.88)
MAX5	-0.20 (-1.14)	-0.34 (-2.43)	-0.18 (-1.26)	-0.42 (-3.74)	-0.75 (-5.00)	0.54 (2.23)	-0.30 (-1.92)	-0.44 (-3.78)	-0.25 (-2.04)	-0.47 (-4.34)	-0.84 (-5.49)	0.54 (2.26)
All stocks	0.30 (4.88)	0.12 (3.04)	0.09 (2.16)	0.01 (0.23)	-0.17 (-3.18)	0.47 (5.00)	0.29 (4.59)	0.12 (2.95)	0.09 (2.11)	0.01 (0.35)	-0.18 (-3.21)	0.47 (4.69)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.35 (3.60)	0.12 (1.39)	-0.07 (-0.70)	-0.15 (-1.42)	-0.31 (-3.74)	0.66 (4.88)	0.37 (3.36)	0.19 (1.86)	-0.10 (-0.78)	-0.18 (-1.37)	-0.34 (-3.25)	0.71 (4.85)
MAX2	0.20 (1.91)	0.23 (2.55)	0.01 (0.11)	-0.14 (-1.71)	-0.34 (-4.16)	0.54 (3.49)	0.26 (2.03)	0.22 (2.30)	-0.01 (-0.08)	-0.18 (-1.83)	-0.37 (-4.08)	0.63 (3.47)
MAX3	0.19 (1.43)	0.16 (1.51)	-0.06 (-0.72)	-0.08 (-1.02)	-0.23 (-2.41)	0.43 (2.27)	0.37 (2.09)	0.22 (1.73)	-0.10 (-1.05)	-0.10 (-1.15)	-0.28 (-2.79)	0.65 (2.85)
MAX4	0.15 (0.82)	0.01 (0.10)	0.06 (0.65)	0.06 (0.55)	-0.16 (-1.36)	0.31 (1.39)	0.26 (1.23)	0.07 (0.50)	0.03 (0.28)	-0.01 (-0.10)	-0.20 (-1.60)	0.46 (1.83)
MAX5	-0.35 (-1.67)	-0.31 (-2.36)	0.11 (0.76)	-0.17 (-1.46)	-0.22 (-1.68)	-0.13 (-0.47)	-0.19 (-0.86)	-0.27 (-1.87)	0.15 (0.92)	-0.10 (-0.81)	-0.18 (-1.18)	-0.01 (-0.04)
All stocks	0.19 (2.14)	0.15 (2.99)	0.02 (0.48)	-0.03 (-0.53)	-0.25 (-3.83)	0.44 (3.11)	0.30 (2.77)	0.20 (3.36)	-0.00 (-0.06)	-0.05 (-0.67)	-0.29 (-3.83)	0.59 (3.54)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
MAX1	0.46 (4.20)	0.13 (1.39)	-0.06 (-0.53)	-0.23 (-2.08)	-0.42 (-4.49)	0.88 (5.99)	0.57 (5.24)	0.17 (1.69)	-0.07 (-0.49)	-0.19 (-1.69)	-0.49 (-4.98)	1.06 (6.83)
MAX2	0.34 (2.82)	0.24 (2.26)	-0.02 (-0.15)	-0.18 (-1.67)	-0.43 (-5.06)	0.76 (5.04)	0.50 (3.72)	0.31 (2.68)	0.04 (0.42)	-0.19 (-1.88)	-0.51 (-5.29)	1.01 (5.58)
MAX3	0.45 (3.49)	0.29 (2.73)	-0.05 (-0.54)	-0.11 (-1.19)	-0.35 (-3.80)	0.80 (4.50)	0.72 (3.89)	0.46 (3.62)	0.05 (0.50)	-0.07 (-0.72)	-0.39 (-3.73)	1.11 (4.72)
MAX4	0.44 (2.70)	0.14 (1.07)	0.10 (0.81)	0.01 (0.10)	-0.22 (-1.91)	0.67 (3.10)	0.60 (2.85)	0.32 (2.11)	0.21 (1.70)	-0.01 (-0.10)	-0.37 (-2.63)	0.98 (3.96)
MAX5	-0.07 (-0.36)	-0.16 (-1.06)	0.25 (1.53)	-0.07 (-0.60)	-0.31 (-2.05)	0.24 (0.89)	0.11 (0.44)	0.22 (1.16)	0.40 (2.13)	0.01 (0.05)	-0.31 (-1.93)	0.41 (1.43)
All stocks	0.38 (4.63)	0.21 (4.04)	0.03 (0.56)	-0.09 (-1.50)	-0.36 (-5.83)	0.75 (5.76)	0.53 (5.10)	0.29 (4.77)	0.03 (0.48)	-0.08 (-1.11)	-0.47 (-6.18)	1.00 (6.33)

Table A15 FF3 alphas of portfolios sorted by prospect theory value and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by TK and PE, where TK is prospect theory value and defined as [Barberis, Mukherjee, and Wang \(2016\)](#).

	Panel A: Sort on TK and PE_{CAPM}						Panel B: Sort on TK and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	0.11 (0.66)	0.12 (1.03)	-0.04 (-0.39)	-0.30 (-2.25)	-0.59 (-4.86)	0.70 (3.60)	0.10 (0.60)	0.11 (0.97)	-0.07 (-0.60)	-0.27 (-1.99)	-0.60 (-4.71)	0.70 (3.56)
TK2	0.48 (3.91)	0.06 (0.62)	0.06 (0.67)	-0.17 (-1.76)	-0.47 (-5.03)	0.94 (5.91)	0.47 (3.88)	0.06 (0.62)	0.17 (1.95)	-0.17 (-1.84)	-0.49 (-5.22)	0.96 (6.06)
TK3	0.31 (3.35)	0.18 (2.46)	-0.11 (-1.53)	-0.04 (-0.54)	-0.42 (-4.59)	0.73 (5.76)	0.35 (3.65)	0.14 (1.87)	-0.02 (-0.23)	-0.06 (-0.78)	-0.43 (-4.67)	0.77 (5.96)
TK4	0.38 (4.36)	0.01 (0.22)	0.06 (0.85)	-0.03 (-0.39)	-0.24 (-2.98)	0.62 (4.99)	0.41 (4.69)	-0.02 (-0.24)	0.11 (1.60)	-0.04 (-0.54)	-0.25 (-3.08)	0.66 (5.27)
TK5	0.31 (3.52)	0.11 (1.26)	0.08 (0.94)	-0.05 (-0.57)	-0.17 (-1.96)	0.47 (3.80)	0.32 (3.66)	0.07 (0.82)	0.10 (1.07)	-0.06 (-0.64)	-0.18 (-2.02)	0.50 (3.88)
All stocks	0.34 (5.52)	0.13 (3.13)	0.06 (1.21)	-0.03 (-0.80)	-0.28 (-4.56)	0.61 (5.96)	0.37 (5.77)	0.10 (2.43)	0.10 (2.12)	-0.04 (-0.93)	-0.29 (-4.71)	0.66 (6.18)
	Panel C: Sort on TK and PE_{FF5}						Panel D: Sort on TK and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	-0.20 (-0.88)	0.12 (0.84)	-0.14 (-0.90)	-0.01 (-0.07)	-0.47 (-3.42)	0.27 (1.00)	-0.32 (-1.37)	0.09 (0.57)	-0.04 (-0.27)	-0.13 (-0.85)	-0.45 (-3.16)	0.12 (0.43)
TK2	0.26 (1.68)	0.22 (1.63)	0.15 (1.22)	-0.14 (-1.20)	-0.41 (-3.44)	0.67 (3.11)	0.19 (1.12)	0.22 (1.68)	0.05 (0.37)	-0.11 (-0.78)	-0.32 (-2.68)	0.51 (2.25)
TK3	0.34 (2.82)	0.14 (1.65)	0.15 (1.79)	-0.03 (-0.34)	-0.38 (-4.01)	0.72 (4.10)	0.37 (2.92)	0.10 (1.01)	0.10 (1.09)	0.04 (0.37)	-0.36 (-3.54)	0.73 (3.95)
TK4	0.34 (2.94)	0.03 (0.40)	0.07 (0.79)	-0.05 (-0.62)	-0.27 (-2.67)	0.61 (3.67)	0.32 (2.67)	-0.02 (-0.18)	0.14 (1.52)	-0.04 (-0.42)	-0.26 (-2.47)	0.58 (3.29)
TK5	0.45 (4.71)	0.15 (1.59)	0.09 (1.01)	-0.10 (-1.08)	-0.07 (-0.71)	0.52 (3.94)	0.40 (4.06)	0.20 (2.06)	0.13 (1.33)	-0.13 (-1.40)	-0.11 (-1.11)	0.51 (3.58)
All stocks	0.33 (4.08)	0.10 (1.82)	0.10 (1.77)	-0.05 (-0.94)	-0.23 (-3.28)	0.56 (4.35)	0.30 (3.52)	0.09 (1.70)	0.10 (1.56)	-0.05 (-0.87)	-0.21 (-2.89)	0.51 (3.76)
	Panel E: Sort on TK and PE_{SY}						Panel F: Sort on TK and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	-0.25 (-1.12)	0.16 (1.05)	-0.10 (-0.65)	-0.05 (-0.31)	-0.50 (-3.64)	0.24 (0.91)	-0.35 (-1.30)	-0.00 (-0.01)	-0.02 (-0.12)	0.05 (0.26)	-0.47 (-2.96)	0.11 (0.36)
TK2	0.25 (1.60)	0.12 (0.96)	0.18 (1.45)	-0.13 (-1.04)	-0.39 (-3.38)	0.64 (2.94)	0.12 (0.61)	0.18 (1.32)	0.10 (0.72)	-0.06 (-0.43)	-0.27 (-2.14)	0.39 (1.58)
TK3	0.33 (2.73)	0.16 (1.66)	0.14 (1.67)	-0.07 (-0.75)	-0.34 (-3.54)	0.67 (3.89)	0.34 (2.56)	0.17 (1.73)	0.20 (2.14)	0.04 (0.33)	-0.36 (-3.23)	0.69 (3.53)
TK4	0.30 (2.52)	0.02 (0.29)	0.14 (1.44)	-0.03 (-0.40)	-0.30 (-2.95)	0.59 (3.55)	0.27 (2.07)	0.09 (0.95)	0.12 (1.04)	0.06 (0.58)	-0.28 (-2.42)	0.55 (2.90)
TK5	0.40 (4.37)	0.23 (2.45)	0.08 (0.87)	-0.08 (-0.97)	-0.08 (-0.87)	0.48 (3.65)	0.31 (3.01)	0.26 (2.42)	0.12 (1.18)	-0.13 (-1.27)	-0.07 (-0.63)	0.37 (2.55)
All stocks	0.30 (3.68)	0.11 (2.00)	0.11 (1.85)	-0.05 (-0.97)	-0.23 (-3.35)	0.53 (4.10)	0.23 (2.59)	0.16 (2.68)	0.10 (1.55)	-0.03 (-0.44)	-0.21 (-2.52)	0.45 (2.99)

Table A16 Alphas of portfolios sorted by prospect theory value and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sequentially sorted by TK and PE_{CAPM} , where TK is prospect theory value and defined as [Barberis, Mukherjee, and Wang \(2016\)](#).

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	0.26 (1.47)	0.25 (2.01)	0.13 (1.01)	-0.14 (-1.11)	-0.47 (-3.70)	0.73 (3.68)	0.11 (0.66)	0.12 (1.03)	-0.04 (-0.39)	-0.30 (-2.25)	-0.59 (-4.86)	0.70 (3.60)
TK2	0.56 (4.41)	0.15 (1.52)	0.15 (1.50)	-0.07 (-0.79)	-0.42 (-4.58)	0.98 (6.17)	0.48 (3.91)	0.06 (0.62)	0.06 (0.67)	-0.17 (-1.76)	-0.47 (-5.03)	0.94 (5.91)
TK3	0.34 (3.43)	0.24 (3.05)	-0.06 (-0.76)	0.02 (0.26)	-0.37 (-4.38)	0.71 (5.88)	0.31 (3.35)	0.18 (2.46)	-0.11 (-1.53)	-0.04 (-0.54)	-0.42 (-4.59)	0.73 (5.76)
TK4	0.35 (4.13)	0.04 (0.55)	0.06 (0.87)	-0.05 (-0.74)	-0.24 (-2.97)	0.59 (4.79)	0.38 (4.36)	0.01 (0.22)	0.06 (0.85)	-0.03 (-0.39)	-0.24 (-2.98)	0.62 (4.99)
TK5	0.26 (3.16)	0.08 (0.90)	0.04 (0.41)	-0.11 (-1.17)	-0.22 (-2.54)	0.47 (4.06)	0.31 (3.52)	0.11 (1.26)	0.08 (0.94)	-0.05 (-0.57)	-0.17 (-1.96)	0.47 (3.80)
All stocks	0.32 (5.51)	0.15 (3.42)	0.06 (1.28)	-0.04 (-0.94)	-0.27 (-4.73)	0.59 (6.26)	0.34 (5.52)	0.13 (3.13)	0.06 (1.21)	-0.03 (-0.80)	-0.28 (-4.56)	0.61 (5.96)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	-0.14 (-0.59)	0.13 (0.89)	-0.14 (-1.00)	-0.15 (-0.93)	-0.41 (-3.23)	0.27 (0.98)	0.17 (0.58)	0.39 (2.44)	0.10 (0.61)	0.04 (0.24)	-0.30 (-1.93)	0.47 (1.28)
TK2	0.32 (1.83)	0.14 (1.14)	-0.02 (-0.21)	-0.21 (-1.69)	-0.32 (-2.88)	0.65 (2.75)	0.61 (2.53)	0.24 (1.79)	0.07 (0.55)	-0.07 (-0.57)	-0.30 (-2.38)	0.91 (2.96)
TK3	0.33 (2.86)	0.08 (0.81)	-0.02 (-0.26)	-0.24 (-2.37)	-0.41 (-4.40)	0.73 (4.46)	0.48 (3.56)	0.14 (1.12)	0.05 (0.51)	-0.24 (-2.12)	-0.41 (-3.87)	0.89 (4.72)
TK4	0.22 (2.01)	-0.03 (-0.35)	-0.03 (-0.29)	-0.17 (-2.01)	-0.36 (-3.70)	0.58 (3.65)	0.28 (1.90)	-0.06 (-0.64)	-0.10 (-1.01)	-0.21 (-2.11)	-0.45 (-3.91)	0.72 (3.68)
TK5	0.27 (2.84)	0.17 (1.95)	0.06 (0.64)	-0.03 (-0.27)	-0.13 (-1.33)	0.40 (2.83)	0.29 (2.54)	0.09 (0.93)	-0.04 (-0.36)	-0.21 (-2.00)	-0.23 (-2.15)	0.52 (3.04)
All stocks	0.24 (2.94)	0.10 (2.15)	0.03 (0.46)	-0.06 (-1.01)	-0.25 (-3.47)	0.49 (3.63)	0.35 (3.35)	0.11 (1.86)	0.01 (0.21)	-0.09 (-1.49)	-0.29 (-3.48)	0.63 (3.80)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
TK1	0.23 (1.16)	0.38 (2.54)	0.05 (0.30)	-0.11 (-0.67)	-0.30 (-1.74)	0.53 (1.77)	0.55 (1.80)	0.85 (4.36)	0.47 (2.20)	0.27 (1.32)	-0.04 (-0.15)	0.59 (1.55)
TK2	0.55 (3.11)	0.27 (1.87)	0.06 (0.49)	-0.11 (-0.90)	-0.38 (-3.42)	0.93 (3.94)	0.85 (3.42)	0.53 (3.37)	0.32 (2.16)	0.07 (0.55)	-0.28 (-2.11)	1.12 (3.82)
TK3	0.52 (4.29)	0.24 (2.35)	0.03 (0.34)	-0.20 (-2.03)	-0.45 (-4.23)	0.97 (5.73)	0.73 (4.86)	0.49 (5.32)	0.20 (1.75)	-0.08 (-0.80)	-0.43 (-3.65)	1.17 (5.45)
TK4	0.38 (3.65)	0.04 (0.42)	-0.05 (-0.52)	-0.22 (-2.38)	-0.41 (-4.14)	0.79 (4.95)	0.46 (3.32)	0.05 (0.55)	0.02 (0.23)	-0.22 (-2.25)	-0.51 (-3.89)	0.97 (4.62)
TK5	0.36 (3.41)	0.16 (1.77)	-0.03 (-0.29)	-0.12 (-1.33)	-0.31 (-3.62)	0.66 (4.67)	0.47 (4.08)	0.00 (0.00)	-0.14 (-1.25)	-0.30 (-2.66)	-0.53 (-4.81)	1.00 (6.19)
All stocks	0.39 (4.92)	0.17 (2.91)	-0.00 (-0.03)	-0.10 (-1.84)	-0.36 (-5.10)	0.75 (5.69)	0.53 (5.14)	0.20 (3.17)	0.01 (0.11)	-0.15 (-2.51)	-0.45 (-5.56)	0.99 (6.08)

Table A17 FF3 alphas of portfolios sorted by PTP and PE

This table reports FF3 alphas of 25 value-weighted portfolios sequentially sorted by PTP and PE, where PTP measures the expectation of expected returns and is defined as analysts' consensus price target scaled by the current price [Weber \(2018\)](#). The sample period is 1999:03–2018:12.

	Panel A: Sort on PTP and PE_{CAPM}						Panel B: Sort on PTP and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.91 (5.19)	0.82 (3.67)	0.66 (3.54)	0.51 (2.40)	0.13 (0.75)	0.78 (3.24)	0.92 (5.31)	0.81 (3.48)	0.65 (3.67)	0.53 (2.42)	0.15 (0.79)	0.77 (3.07)
PTP2	0.34 (1.86)	0.86 (3.80)	-0.17 (-0.90)	0.12 (0.68)	-0.37 (-1.98)	0.71 (2.60)	0.36 (1.90)	0.75 (3.78)	-0.06 (-0.32)	0.12 (0.72)	-0.40 (-2.25)	0.76 (2.84)
PTP3	0.09 (0.68)	0.05 (0.42)	0.14 (1.07)	-0.10 (-0.62)	-0.42 (-2.55)	0.51 (2.35)	0.20 (1.54)	-0.07 (-0.52)	0.19 (1.41)	-0.15 (-0.93)	-0.43 (-2.64)	0.64 (2.88)
PTP4	0.42 (2.40)	0.28 (1.48)	-0.24 (-1.14)	-0.09 (-0.52)	-0.45 (-2.24)	0.87 (3.36)	0.38 (2.40)	0.45 (2.35)	-0.24 (-1.04)	-0.14 (-0.69)	-0.38 (-1.86)	0.76 (2.96)
PTP5	-1.16 (-3.89)	-0.33 (-1.16)	-0.21 (-0.70)	-0.42 (-1.64)	-0.40 (-1.48)	-0.76 (-1.76)	-1.07 (-3.53)	-0.40 (-1.37)	-0.20 (-0.66)	-0.46 (-1.86)	-0.40 (-1.46)	-0.68 (-1.52)
All stocks	0.26 (2.12)	0.36 (3.59)	0.12 (1.28)	0.02 (0.16)	-0.37 (-2.97)	0.62 (3.22)	0.29 (2.41)	0.34 (3.24)	0.13 (1.27)	0.02 (0.20)	-0.37 (-3.08)	0.66 (3.42)
	Panel C: Sort on PTP and PE_{FF5}						Panel D: Sort on PTP and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.84 (5.03)	0.87 (3.82)	0.75 (4.31)	0.52 (2.23)	0.17 (0.99)	0.67 (2.73)	0.88 (5.66)	0.76 (3.84)	0.82 (4.05)	0.49 (2.33)	0.17 (0.97)	0.71 (3.06)
PTP2	0.34 (1.91)	0.70 (3.31)	-0.04 (-0.23)	0.14 (0.83)	-0.41 (-2.30)	0.75 (2.90)	0.43 (2.37)	0.73 (3.56)	-0.03 (-0.15)	0.12 (0.68)	-0.44 (-2.49)	0.87 (3.36)
PTP3	0.17 (1.32)	-0.11 (-0.82)	0.20 (1.39)	-0.09 (-0.54)	-0.50 (-3.13)	0.67 (3.10)	0.08 (0.66)	0.12 (0.91)	0.08 (0.52)	-0.11 (-0.78)	-0.48 (-2.84)	0.56 (2.62)
PTP4	0.35 (2.18)	0.50 (2.24)	-0.32 (-1.46)	-0.30 (-1.47)	-0.36 (-1.84)	0.70 (2.85)	0.36 (2.22)	0.52 (2.52)	-0.34 (-1.64)	-0.13 (-0.71)	-0.42 (-2.02)	0.79 (2.93)
PTP5	-1.00 (-3.38)	-0.46 (-1.55)	-0.33 (-1.08)	-0.55 (-2.14)	-0.43 (-1.57)	-0.57 (-1.29)	-1.09 (-3.76)	-0.38 (-1.33)	-0.20 (-0.70)	-0.50 (-1.91)	-0.51 (-1.86)	-0.58 (-1.31)
All stocks	0.27 (2.24)	0.36 (3.26)	0.12 (1.09)	-0.00 (-0.00)	-0.38 (-3.32)	0.65 (3.38)	0.26 (2.30)	0.38 (3.78)	0.12 (1.16)	0.00 (0.04)	-0.39 (-3.26)	0.65 (3.47)
	Panel E: Sort on PTP and PE_{SY}						Panel F: Sort on PTP and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.88 (5.07)	0.86 (3.69)	0.78 (4.52)	0.41 (1.79)	0.17 (0.99)	0.70 (2.90)	0.85 (5.47)	0.92 (3.79)	0.69 (3.68)	0.47 (2.15)	0.16 (0.91)	0.69 (3.02)
PTP2	0.41 (2.24)	0.71 (3.71)	-0.02 (-0.09)	0.10 (0.56)	-0.43 (-2.28)	0.84 (3.11)	0.33 (1.86)	0.79 (3.87)	-0.12 (-0.61)	0.14 (0.83)	-0.36 (-1.95)	0.69 (2.62)
PTP3	0.14 (1.10)	0.09 (0.69)	0.01 (0.05)	-0.08 (-0.54)	-0.47 (-2.80)	0.61 (2.83)	0.08 (0.61)	0.04 (0.31)	0.10 (0.74)	-0.04 (-0.22)	-0.45 (-2.85)	0.53 (2.54)
PTP4	0.36 (2.49)	0.54 (2.66)	-0.28 (-1.35)	-0.21 (-1.07)	-0.31 (-1.47)	0.67 (2.65)	0.35 (2.11)	0.38 (2.13)	-0.17 (-0.81)	-0.22 (-1.16)	-0.47 (-2.25)	0.82 (3.01)
PTP5	-1.07 (-3.61)	-0.27 (-1.06)	-0.27 (-0.86)	-0.45 (-1.63)	-0.50 (-1.83)	-0.57 (-1.29)	-1.10 (-3.62)	-0.28 (-0.96)	-0.33 (-1.22)	-0.38 (-1.63)	-0.46 (-1.66)	-0.64 (-1.41)
All stocks	0.27 (2.38)	0.40 (3.64)	0.10 (1.01)	-0.01 (-0.06)	-0.37 (-2.87)	0.64 (3.30)	0.23 (1.96)	0.38 (3.47)	0.07 (0.66)	0.03 (0.24)	-0.37 (-2.91)	0.60 (3.07)

Table A18 Alphas of portfolios sorted by PTP and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sequentially sorted by PTP and PE_{CAPM} (Newey-West t -values in parentheses), where PTP measures the expectation of expected returns and is defined as analysts' consensus price target scaled by current price (Weber, 2018). The sample period is 1999:03–2018:12.

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.97 (4.78)	0.88 (3.58)	0.74 (3.72)	0.56 (2.61)	0.19 (1.05)	0.78 (3.11)	0.91 (5.19)	0.82 (3.67)	0.66 (3.54)	0.51 (2.40)	0.13 (0.75)	0.78 (3.24)
PTP2	0.40 (1.99)	0.85 (3.98)	-0.18 (-1.00)	0.15 (0.88)	-0.30 (-1.57)	0.71 (2.64)	0.34 (1.86)	0.86 (3.80)	-0.17 (-0.90)	0.12 (0.68)	-0.37 (-1.98)	0.71 (2.60)
PTP3	0.12 (0.82)	0.07 (0.50)	0.15 (1.13)	-0.14 (-0.80)	-0.44 (-2.33)	0.56 (2.50)	0.09 (0.68)	0.05 (0.42)	0.14 (1.07)	-0.10 (-0.62)	-0.42 (-2.55)	0.51 (2.35)
PTP4	0.45 (2.12)	0.25 (1.30)	-0.23 (-1.08)	-0.10 (-0.58)	-0.49 (-2.39)	0.94 (3.43)	0.42 (2.40)	0.28 (1.48)	-0.24 (-1.14)	-0.09 (-0.52)	-0.45 (-2.24)	0.87 (3.36)
PTP5	-1.11 (-3.69)	-0.31 (-1.19)	-0.15 (-0.54)	-0.39 (-1.51)	-0.30 (-1.05)	-0.82 (-1.91)	-1.16 (-3.89)	-0.33 (-1.16)	-0.21 (-0.70)	-0.42 (-1.64)	-0.40 (-1.48)	-0.76 (-1.76)
All stocks	0.28 (1.95)	0.35 (3.62)	0.12 (1.36)	-0.01 (-0.12)	-0.37 (-2.87)	0.65 (3.33)	0.26 (2.12)	0.36 (3.59)	0.12 (1.28)	0.02 (0.16)	-0.37 (-2.97)	0.62 (3.22)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.68 (4.06)	0.66 (2.82)	0.51 (2.21)	0.36 (1.39)	0.08 (0.37)	0.60 (2.37)	0.72 (4.12)	0.62 (2.96)	0.50 (2.43)	0.36 (1.49)	0.05 (0.27)	0.67 (2.69)
PTP2	0.23 (1.33)	0.69 (3.31)	-0.27 (-1.36)	0.02 (0.13)	-0.52 (-2.77)	0.75 (2.99)	0.30 (1.51)	0.77 (3.44)	-0.28 (-1.36)	0.08 (0.41)	-0.52 (-2.78)	0.82 (2.98)
PTP3	0.03 (0.24)	-0.10 (-0.66)	0.02 (0.12)	-0.26 (-1.54)	-0.45 (-2.81)	0.48 (2.39)	0.01 (0.08)	-0.07 (-0.50)	-0.03 (-0.24)	-0.25 (-1.45)	-0.42 (-2.41)	0.43 (1.93)
PTP4	0.32 (1.93)	0.19 (1.02)	-0.27 (-1.29)	-0.04 (-0.23)	-0.56 (-2.38)	0.88 (3.23)	0.43 (1.94)	0.25 (1.23)	-0.28 (-1.13)	-0.05 (-0.23)	-0.42 (-1.82)	0.85 (2.79)
PTP5	-0.97 (-2.98)	-0.14 (-0.43)	0.04 (0.13)	-0.35 (-1.41)	-0.29 (-1.02)	-0.68 (-1.50)	-0.98 (-2.87)	0.07 (0.22)	0.04 (0.12)	-0.25 (-0.93)	-0.28 (-0.94)	-0.70 (-1.47)
All stocks	0.18 (1.53)	0.29 (2.83)	0.09 (1.06)	-0.06 (-0.56)	-0.39 (-3.38)	0.57 (3.03)	0.22 (1.45)	0.33 (3.32)	0.06 (0.69)	-0.02 (-0.18)	-0.37 (-3.00)	0.59 (2.69)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
PTP1	0.69 (3.77)	0.60 (2.57)	0.41 (1.97)	0.15 (0.64)	-0.18 (-0.92)	0.86 (3.55)	0.80 (4.47)	0.59 (2.60)	0.49 (2.37)	0.19 (0.92)	-0.13 (-0.71)	0.93 (3.70)
PTP2	0.33 (1.60)	0.70 (3.13)	-0.28 (-1.55)	-0.10 (-0.57)	-0.57 (-3.16)	0.91 (3.02)	0.35 (1.35)	0.71 (3.15)	-0.42 (-2.17)	-0.09 (-0.49)	-0.57 (-3.81)	0.92 (3.03)
PTP3	0.12 (0.71)	-0.11 (-0.59)	-0.00 (-0.00)	-0.34 (-1.89)	-0.38 (-2.21)	0.49 (1.94)	0.08 (0.48)	-0.07 (-0.44)	-0.01 (-0.07)	-0.25 (-1.45)	-0.55 (-3.00)	0.63 (2.44)
PTP4	0.49 (2.55)	0.27 (1.20)	-0.12 (-0.60)	0.08 (0.43)	-0.28 (-1.32)	0.77 (2.65)	0.55 (2.40)	0.33 (1.54)	-0.15 (-0.76)	0.09 (0.56)	-0.40 (-2.00)	0.95 (3.16)
PTP5	-0.63 (-2.06)	0.39 (1.33)	0.29 (0.98)	-0.10 (-0.39)	-0.15 (-0.50)	-0.48 (-1.04)	-0.69 (-2.04)	0.32 (1.13)	0.28 (1.04)	-0.00 (-0.01)	-0.07 (-0.20)	-0.63 (-1.19)
All stocks	0.30 (2.04)	0.34 (2.80)	0.11 (1.05)	-0.07 (-0.60)	-0.45 (-3.38)	0.75 (3.04)	0.33 (2.01)	0.33 (3.38)	0.06 (0.66)	-0.10 (-0.90)	-0.48 (-3.80)	0.81 (3.33)

Table A19 FF3 alphas of portfolios sorted by LTG and PE

This table reports FF3 alphas of 25 value-weighted portfolios sorted by LTG and PE, where LTG is analysts' long-term growth forecast on earnings as in (Weber, 2018). The sample period is 1982:01–2018:12.

	Panel A: Sort on LTG and PE_{CAPM}						Panel B: Sort on LTG and PE_{FF3}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.18 (1.36)	0.47 (3.69)	0.25 (2.25)	0.11 (0.99)	-0.17 (-1.42)	0.36 (1.98)	0.19 (1.38)	0.46 (3.43)	0.16 (1.51)	0.16 (1.54)	-0.20 (-1.62)	0.39 (2.14)
LTG2	0.14 (0.96)	0.19 (1.90)	0.02 (0.17)	-0.08 (-0.71)	-0.33 (-2.32)	0.47 (2.10)	0.17 (1.22)	0.14 (1.37)	0.01 (0.12)	-0.07 (-0.60)	-0.33 (-2.36)	0.51 (2.26)
LTG3	0.40 (3.00)	0.17 (1.58)	0.24 (1.81)	-0.26 (-2.56)	-0.39 (-3.40)	0.79 (4.23)	0.42 (3.05)	0.21 (1.96)	0.19 (1.38)	-0.24 (-2.33)	-0.41 (-3.75)	0.83 (4.43)
LTG4	0.29 (1.66)	0.10 (0.70)	0.21 (1.84)	0.05 (0.36)	-0.35 (-2.97)	0.64 (2.80)	0.30 (1.77)	0.15 (1.14)	0.25 (2.20)	0.05 (0.45)	-0.36 (-3.06)	0.66 (2.95)
LTG5	-0.15 (-0.72)	0.38 (2.09)	0.04 (0.21)	0.31 (1.30)	0.10 (0.58)	-0.25 (-0.88)	-0.07 (-0.37)	0.36 (2.06)	0.04 (0.21)	0.37 (1.45)	0.02 (0.11)	-0.09 (-0.33)
All stocks	0.21 (2.18)	0.22 (3.40)	0.16 (2.44)	-0.02 (-0.34)	-0.27 (-3.09)	0.48 (3.29)	0.25 (2.58)	0.21 (3.39)	0.13 (1.90)	0.01 (0.21)	-0.28 (-3.33)	0.53 (3.64)
	Panel C: Sort on LTG and PE_{FF5}						Panel D: Sort on LTG and PE_{HXZ}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.23 (1.65)	0.38 (2.92)	0.19 (1.92)	0.13 (1.20)	-0.18 (-1.43)	0.41 (2.24)	0.22 (1.56)	0.42 (3.19)	0.13 (1.34)	0.14 (1.12)	-0.17 (-1.34)	0.39 (2.05)
LTG2	0.15 (0.99)	0.16 (1.53)	0.01 (0.11)	-0.09 (-0.72)	-0.40 (-2.87)	0.54 (2.49)	0.12 (0.86)	0.19 (1.76)	-0.01 (-0.11)	-0.03 (-0.22)	-0.37 (-2.65)	0.50 (2.27)
LTG3	0.46 (3.26)	0.30 (2.42)	0.11 (0.82)	-0.22 (-1.99)	-0.43 (-3.79)	0.89 (4.68)	0.42 (3.26)	0.25 (2.05)	0.14 (1.05)	-0.18 (-1.75)	-0.43 (-3.62)	0.85 (4.74)
LTG4	0.36 (2.00)	0.13 (1.00)	0.17 (1.42)	0.11 (0.85)	-0.35 (-3.01)	0.71 (3.02)	0.34 (1.87)	0.14 (1.07)	0.27 (2.28)	0.00 (0.01)	-0.37 (-3.27)	0.71 (3.03)
LTG5	-0.04 (-0.20)	0.28 (1.53)	0.09 (0.53)	0.21 (0.83)	0.10 (0.53)	-0.14 (-0.48)	-0.01 (-0.04)	0.29 (1.75)	0.13 (0.77)	0.21 (0.84)	0.10 (0.55)	-0.11 (-0.38)
All stocks	0.28 (2.88)	0.20 (3.00)	0.11 (1.62)	0.02 (0.27)	-0.29 (-3.44)	0.57 (3.91)	0.26 (2.61)	0.23 (3.47)	0.13 (2.03)	0.00 (0.07)	-0.29 (-3.32)	0.55 (3.67)
	Panel E: Sort on LTG and PE_{SY}						Panel F: Sort on LTG and PE_{DHS}					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.26 (1.83)	0.35 (3.04)	0.16 (1.45)	0.13 (1.28)	-0.17 (-1.35)	0.42 (2.26)	0.19 (1.42)	0.39 (2.88)	0.20 (1.77)	0.13 (1.18)	-0.20 (-1.53)	0.39 (2.07)
LTG2	0.15 (1.03)	0.13 (1.27)	0.06 (0.50)	-0.11 (-0.94)	-0.35 (-2.55)	0.50 (2.28)	0.15 (0.99)	0.11 (1.06)	0.04 (0.35)	-0.11 (-0.92)	-0.35 (-2.46)	0.50 (2.17)
LTG3	0.40 (3.04)	0.29 (2.70)	0.11 (0.83)	-0.19 (-1.83)	-0.45 (-3.80)	0.85 (4.51)	0.47 (3.35)	0.17 (1.54)	0.25 (1.84)	-0.28 (-2.65)	-0.41 (-3.58)	0.88 (4.62)
LTG4	0.30 (1.80)	0.16 (1.23)	0.27 (2.01)	0.01 (0.12)	-0.37 (-2.98)	0.67 (2.90)	0.32 (1.91)	0.16 (1.15)	0.20 (1.72)	-0.01 (-0.10)	-0.37 (-3.12)	0.69 (3.13)
LTG5	-0.02 (-0.09)	0.29 (1.56)	-0.00 (-0.01)	0.36 (1.38)	0.09 (0.50)	-0.11 (-0.40)	0.03 (0.19)	0.33 (1.84)	0.01 (0.07)	0.26 (1.01)	0.13 (0.76)	-0.10 (-0.39)
All stocks	0.26 (2.68)	0.21 (3.23)	0.13 (1.81)	-0.01 (-0.14)	-0.28 (-3.35)	0.54 (3.63)	0.27 (2.68)	0.15 (2.30)	0.16 (2.30)	-0.02 (-0.40)	-0.28 (-3.17)	0.54 (3.58)

Table A20 Alphas of portfolios sorted by LTG and PE_{CAPM}

This table reports alphas of 25 value-weighted portfolios sorted by LTG and PE_{CAPM} (Newey-West *t*-values in parentheses), where LTG is analysts' long-term growth forecast on earnings as in [Weber \(2018\)](#).

	Panel A: CAPM alpha						Panel B: FF3 alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.46 (2.36)	0.63 (4.67)	0.43 (3.06)	0.25 (2.23)	-0.00 (-0.02)	0.46 (2.37)	0.18 (1.36)	0.47 (3.69)	0.25 (2.25)	0.11 (0.99)	-0.17 (-1.42)	0.36 (1.98)
LTG2	0.27 (1.64)	0.34 (2.77)	0.13 (1.03)	0.02 (0.17)	-0.20 (-1.26)	0.47 (2.18)	0.14 (0.96)	0.19 (1.90)	0.02 (0.17)	-0.08 (-0.71)	-0.33 (-2.32)	0.47 (2.10)
LTG3	0.43 (2.96)	0.22 (1.88)	0.29 (2.24)	-0.21 (-1.86)	-0.36 (-3.00)	0.80 (4.18)	0.40 (3.00)	0.17 (1.58)	0.24 (1.81)	-0.26 (-2.56)	-0.39 (-3.40)	0.79 (4.23)
LTG4	0.29 (1.68)	0.06 (0.41)	0.19 (1.60)	-0.03 (-0.17)	-0.40 (-3.31)	0.69 (3.05)	0.29 (1.66)	0.10 (0.70)	0.21 (1.84)	0.05 (0.36)	-0.35 (-2.97)	0.64 (2.80)
LTG5	-0.28 (-1.31)	0.14 (0.71)	-0.21 (-0.97)	0.08 (0.32)	-0.10 (-0.48)	-0.19 (-0.70)	-0.15 (-0.72)	0.38 (2.09)	0.04 (0.21)	0.31 (1.30)	0.10 (0.58)	-0.25 (-0.88)
All stocks	0.27 (2.48)	0.23 (3.51)	0.18 (2.81)	-0.01 (-0.18)	-0.25 (-2.65)	0.52 (3.43)	0.21 (2.18)	0.22 (3.40)	0.16 (2.44)	-0.02 (-0.34)	-0.27 (-3.09)	0.48 (3.29)
	Panel C: FF5 alpha						Panel D: HXZ alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.13 (0.93)	0.34 (2.79)	0.11 (0.99)	-0.01 (-0.11)	-0.27 (-2.02)	0.39 (2.05)	0.21 (1.19)	0.43 (3.32)	0.13 (1.02)	0.00 (0.02)	-0.27 (-1.81)	0.48 (2.51)
LTG2	-0.07 (-0.51)	0.01 (0.07)	-0.19 (-1.74)	-0.30 (-2.98)	-0.54 (-3.91)	0.47 (2.22)	0.00 (0.01)	-0.01 (-0.08)	-0.25 (-2.02)	-0.25 (-2.11)	-0.50 (-2.93)	0.50 (2.23)
LTG3	0.27 (1.99)	0.01 (0.10)	0.08 (0.71)	-0.41 (-3.60)	-0.57 (-4.53)	0.84 (4.09)	0.32 (2.27)	-0.03 (-0.30)	0.03 (0.22)	-0.45 (-3.82)	-0.60 (-4.45)	0.92 (4.41)
LTG4	0.22 (1.22)	0.08 (0.49)	0.12 (0.97)	0.12 (0.92)	-0.35 (-2.75)	0.57 (2.22)	0.33 (1.43)	0.10 (0.60)	0.06 (0.51)	0.08 (0.56)	-0.38 (-2.60)	0.72 (2.20)
LTG5	-0.02 (-0.09)	0.56 (2.65)	0.24 (1.42)	0.65 (2.78)	0.37 (2.09)	-0.40 (-1.20)	0.06 (0.25)	0.53 (2.39)	0.24 (1.14)	0.60 (2.31)	0.29 (1.25)	-0.22 (-0.61)
All stocks	0.15 (1.50)	0.17 (2.61)	0.11 (1.63)	-0.06 (-0.87)	-0.31 (-3.42)	0.46 (2.98)	0.22 (1.79)	0.17 (2.48)	0.06 (0.86)	-0.08 (-1.01)	-0.33 (-3.36)	0.55 (3.01)
	Panel E: SY alpha						Panel F: DHS alpha					
	PE1	PE2	PE3	PE4	PE5	PE1-5	PE1	PE2	PE3	PE4	PE5	PE1-5
LTG1	0.16 (0.99)	0.40 (2.96)	0.15 (1.16)	0.03 (0.21)	-0.26 (-1.82)	0.43 (2.25)	0.40 (2.28)	0.50 (3.81)	0.14 (1.17)	-0.04 (-0.32)	-0.47 (-3.05)	0.87 (3.92)
LTG2	0.12 (0.79)	0.08 (0.54)	-0.19 (-1.39)	-0.31 (-2.96)	-0.48 (-3.13)	0.59 (2.50)	0.27 (1.58)	0.13 (1.02)	-0.13 (-1.12)	-0.23 (-2.42)	-0.59 (-4.06)	0.87 (3.38)
LTG3	0.37 (2.64)	0.00 (0.04)	0.11 (0.73)	-0.41 (-3.27)	-0.60 (-4.46)	0.97 (4.48)	0.53 (3.53)	0.10 (0.85)	0.11 (0.85)	-0.39 (-3.45)	-0.64 (-4.90)	1.17 (5.52)
LTG4	0.40 (2.15)	0.03 (0.16)	0.11 (0.77)	0.03 (0.20)	-0.47 (-3.55)	0.88 (3.34)	0.58 (3.10)	0.12 (0.73)	0.20 (1.61)	0.12 (0.92)	-0.52 (-3.63)	1.10 (4.18)
LTG5	0.40 (1.83)	0.51 (2.24)	0.29 (1.49)	0.54 (2.06)	0.18 (1.14)	0.21 (0.78)	0.54 (2.68)	0.64 (3.39)	0.28 (1.50)	0.38 (1.74)	0.11 (0.67)	0.43 (1.69)
All stocks	0.30 (2.82)	0.17 (2.22)	0.10 (1.34)	-0.09 (-1.16)	-0.40 (-3.88)	0.69 (3.92)	0.45 (3.77)	0.24 (2.74)	0.10 (1.45)	-0.12 (-1.87)	-0.51 (-5.31)	0.96 (5.38)

Table A21 Fama-MacBeth regressions

This table reports the coefficients from Fama-MacBeth regressions of one-month-ahead returns on PE and other variables, where IO refers to institutional ownership, MAX to lottery demand, TK to prospect theory value, PTP to analysts' implied return expectation, and LTG to analysts' long-term growth forecast on earnings. Newey-West t -statistics are reported in parentheses. The sample period is 1999:04–2018:12, over which all variables have observations. Intercepts are included in all regressions but not reported for brevity.

	Dependent variable: one-month-ahead return							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PE _{CAPM}	−0.52 (−4.07)	−0.45 (−3.61)	−0.49 (−3.90)	−0.46 (−3.70)	−0.42 (−3.48)	−0.52 (−4.06)	−0.51 (−4.17)	−0.37 (−3.28)
IVOL(%)		−0.07 (−0.95)						−0.07 (−1.18)
IO			−0.07 (−0.24)					−0.18 (−0.71)
MAX(%)				−0.02 (−0.65)				0.01 (0.26)
TK					−1.59 (−0.30)			−3.98 (−0.97)
PTP						−0.14 (−5.02)		−0.14 (−5.65)
LTG/100							0.43 (0.33)	−0.08 (−0.09)
Log(ME)	−0.08 (−2.01)	−0.10 (−2.28)	−0.08 (−1.97)	−0.09 (−2.21)	−0.07 (−1.71)	−0.09 (−2.07)	−0.08 (−1.92)	−0.07 (−1.60)
Log(BM)	−0.11 (−1.19)	−0.11 (−1.24)	−0.11 (−1.17)	−0.11 (−1.22)	−0.11 (−1.23)	−0.10 (−1.11)	−0.10 (−1.11)	−0.11 (−1.22)
STR(%)	0.03 (1.83)	0.02 (1.34)	0.02 (1.53)	0.02 (1.44)	0.02 (1.09)	0.02 (1.64)	0.03 (1.76)	0.01 (0.41)
MOM(%)	0.00 (0.09)	0.01 (0.18)	0.01 (0.16)	0.01 (0.13)	0.01 (0.20)	−0.00 (−0.09)	0.00 (0.01)	0.02 (0.34)
LTR(%)	−0.07 (−1.05)	−0.06 (−0.95)	−0.07 (−1.05)	−0.05 (−0.91)	−0.06 (−0.65)	−0.07 (−1.06)	−0.07 (−1.22)	−0.02 (−0.22)
N	265,242	265,242	265,242	265,242	265,242	265,242	265,242	265,242

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