

A Appendix

A.1 Direct Replication of PS Tables

Table A1: Replication of Pastor and Stambaugh (2003) Table 2, determinants of predicted liquidity betas. Each column reports the results of estimating a linear relation between a stock's liquidity beta and the seven characteristics listed (in addition to the intercept, shown first). At each year end shown, the estimation uses all stocks defined as ordinary common shares traded on the NYSE, AMEX, or NASDAQ with at least three years of monthly returns continuing through the given year end. The estimation uses a two-stage pooled time-series and cross-sectional approach. Each value reported is equal to the coefficient estimate multiplied by the time-series average of the annual cross-sectional standard deviations of the characteristic.

	Results in PS			Replication results		
	August 1962 through end of:			August 1962 through end of:		
	1998	1983	1968	1998	1983	1968
Intercept	-1.79 [-6.75]	-4.39 [-12.94]	-2.75 [-2.95]	1.17 [2.32]	-2.45 [-4.42]	-0.65 [-0.42]
Historical beta	2.30 [9.97]	3.75 [10.87]	9.18 [9.99]	2.31 [6.75]	6.19 [11.33]	13.29 [9.54]
Average liquidity	-0.87 [-4.12]	-0.02 [-0.08]	-0.48 [-0.61]	0.74 [2.25]	0.27 [1.29]	0.05 [0.11]
Average volume	1.54 [3.29]	-3.37 [-5.03]	0.07 [0.05]	-0.02 [-0.02]	-4.78 [-3.75]	-4.09 [-1.32]
Cumulative return	-0.04 [-0.14]	1.00 [2.86]	0.93 [0.86]	-0.86 [-2.15]	-0.10 [-0.18]	4.56 [3.10]
Return volatility	-0.24 [-1.60]	-1.13 [-3.39]	-2.61 [-2.25]	-0.33 [-0.55]	-0.81 [-0.92]	0.14 [0.06]
Price	0.59 [1.85]	7.51 [15.00]	4.32 [3.38]	2.67 [3.62]	8.94 [8.40]	4.35 [1.69]
Shares outstanding	-1.43 [-3.37]	0.67 [1.26]	-0.69 [-0.54]	-2.78 [-4.33]	0.49 [0.59]	1.94 [1.07]

Table A2: Replication of Pastor and Stambaugh (2003) Table 3, properties of portfolios sorted on predicted liquidity betas. At each year end between 1965 and 1998, eligible stocks are sorted into 10 portfolios according to predicted liquidity betas. The betas are constructed as linear functions of seven stock characteristics at the current year end, using coefficients estimated from a pooled time-series, cross-sectional regression approach. The estimation and sorting procedure at each year end uses only data available at that time. Eligible stocks are defined as ordinary common shares traded on the NYSE, AMEX, or NASDAQ with at least three years of monthly returns continuing through the current year end and with stock prices between \$5 and \$1,000. The portfolio returns for the 12 postranking months are linked across years to form one series of postranking returns for each decile. Panel A reports the decile portfolios' postranking liquidity betas, estimated by regressing the value-weighted portfolio excess returns on the aggregate liquidity innovation and the Fama-French factors. Panel B reports the time-series averages of the decile portfolios' market capitalization and liquidity, obtained as value-weighted averages of the corresponding measures across the stocks within each decile. Market capitalization is reported in billions of dollars. A stock's liquidity in any given month is the slope coefficient $\gamma_{i,t}$ from eq. (1), multiplied by 100. Also reported are postranking betas with respect to the three Fama-French factors and a momentum factor, estimated by regressing value-weighted portfolio excess returns on the four factors.

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A1: Liquidity betas reported in PS											
Jan. 1966-Dec. 1999	-5.75 [-2.22]	-6.54 [-2.98]	-4.66 [-2.59]	-3.16 [-2.18]	0.90 [0.69]	-0.63 [-0.54]	-0.86 [-0.68]	0.68 [0.52]	2.44 [1.77]	2.48 [1.35]	8.23 [2.37]
Jan. 1966-Dec. 1982	-7.28 [-1.84]	-8.29 [-2.54]	-3.47 [-1.19]	-3.15 [-1.36]	2.58 [1.23]	-0.34 [-0.17]	-0.47 [-0.22]	0.73 [0.33]	-2.51 [-1.10]	4.19 [1.38]	11.47 [2.06]
Jan. 1983-Dec. 1999	-3.00 [-0.85]	-4.27 [-1.37]	-5.09 [-2.12]	-2.36 [-1.22]	-1.10 [-0.63]	-0.84 [-0.57]	-1.60 [-1.06]	1.94 [1.22]	5.67 [3.23]	0.85 [0.36]	3.85 [0.84]
Panel B1: Portfolio properties reported in PS											
Market cap	2.83	5.90	8.30	7.65	10.67	16.61	15.99	16.02	16.05	14.28	
Liquidity	-0.46	-0.16	-0.10	-0.15	-0.08	-0.07	-0.03	-0.03	-0.04	-0.10	
MKT beta	1.24 [37.70]	1.21 [44.61]	1.09 [48.31]	1.05 [56.83]	1.04 [62.83]	1.03 [68.89]	1.00 [62.56]	1.01 [60.75]	0.98 [55.76]	0.94 [40.75]	-0.30 [-6.85]
SMB beta	0.70 [14.47]	0.31 [7.64]	0.05 [1.61]	0.01 [0.26]	-0.09 [-3.51]	-0.12 [-5.63]	-0.12 [-5.04]	-0.09 [-3.82]	-0.12 [-4.76]	0.05 [1.36]	-0.65 [-10.14]
HML beta	0.07 [1.31]	0.19 [4.36]	0.23 [6.45]	0.20 [6.69]	0.11 [4.02]	0.14 [5.68]	0.08 [3.07]	-0.00 [-0.06]	-0.01 [-0.37]	-0.34 [-9.04]	-0.40 [-5.74]
MOM beta	-0.06 [-2.43]	-0.10 [-5.35]	-0.07 [-4.29]	-0.03 [-2.19]	-0.03 [-2.51]	-0.01 [-0.72]	0.01 [0.53]	-0.01 [-0.72]	0.03 [2.72]	0.05 [3.02]	0.11 [3.41]

Table A2 (cont).

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A2: Liquidity betas from replication											
Jan. 1968-Dec. 1999	-6.08 [-2.28]	-3.29 [-1.47]	-2.61 [-1.56]	0.81 [0.54]	1.12 [0.77]	2.76 [1.97]	-0.53 [-0.31]	1.89 [1.18]	-1.25 [-0.74]	3.50 [1.81]	9.58 [2.59]
Jan. 1968-Dec. 1982	-13.31 [-3.25]	-6.40 [-1.53]	-3.33 [-1.07]	0.23 [0.08]	1.10 [0.43]	4.05 [1.65]	2.67 [1.12]	0.65 [0.27]	-2.42 [-0.91]	-1.02 [-0.34]	12.29 [2.34]
Jan. 1983-Dec. 1999	-1.23 [-0.36]	-2.11 [-0.98]	-0.86 [-0.45]	1.78 [1.10]	1.84 [1.03]	2.78 [1.60]	-2.45 [-1.00]	3.93 [1.89]	-0.15 [-0.06]	4.53 [1.92]	5.77 [1.20]
Panel B2: Portfolio properties from replication											
Market cap	14.82	14.29	11.31	12.21	8.57	7.79	9.63	9.62	6.05	6.82	
Liquidity	-0.23	-0.12	-0.11	-0.09	-0.06	-0.03	-0.07	-0.03	0.00	-0.06	
MKT beta	1.25 [39.80]	1.16 [45.23]	1.06 [54.13]	1.06 [61.57]	1.03 [61.49]	0.99 [60.72]	0.94 [46.76]	0.92 [50.59]	0.95 [48.56]	0.90 [40.16]	-0.35 [-7.97]
SMB beta	0.38 [8.04]	0.16 [4.03]	0.05 [1.76]	-0.04 [-1.70]	-0.08 [-3.02]	0.02 [0.88]	-0.01 [-0.39]	0.02 [0.55]	0.05 [1.76]	0.12 [3.49]	-0.26 [-4.01]
HML beta	0.07 [1.41]	0.18 [4.29]	0.17 [5.43]	0.25 [8.83]	0.13 [4.77]	0.13 [5.06]	-0.00 [-0.08]	-0.03 [-1.14]	-0.05 [-1.44]	-0.17 [-4.63]	-0.24 [-3.43]
MOM beta	-0.08 [-3.26]	-0.10 [-5.03]	-0.03 [-2.02]	-0.01 [-0.91]	0.02 [1.82]	0.05 [3.75]	0.03 [2.26]	0.05 [3.97]	0.04 [2.50]	0.06 [3.57]	0.14 [4.22]

Table A3: Replication of Pastor and Stambaugh (2003) Table 4, alphas of value-weighted portfolios sorted on predicted liquidity betas. See note to Table 3 of Pastor and Stambaugh (2003). The table reports the decile portfolios' postranking alphas, in percentages per year. The alphas are estimated as intercepts from the regressions of excess portfolio postranking returns on excess market returns (CAPM alpha), on the Fama-French factor returns (Fama-French alpha), and on the Fama-French and momentum factor returns (four-factor alphas). The t-statistics are in brackets.

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A1: Alphas reported in PS for January 1966-December 1999											
CAPM alpha	-5.16 [-2.57]	-1.88 [-1.24]	-0.66 [-0.56]	-0.07 [-0.08]	-1.48 [-1.80]	1.48 [1.93]	1.22 [1.52]	1.38 [1.72]	1.68 [1.93]	1.24 [1.01]	6.40 [2.54]
Fama-French alpha	-6.05 [-3.77]	-3.36 [-2.47]	-2.15 [-1.93]	-1.23 [-1.37]	-2.10 [-2.61]	0.78 [1.08]	0.86 [1.11]	1.41 [1.76]	1.90 [2.22]	3.18 [2.82]	9.23 [4.29]
Four-factor alpha	-5.11 [-3.12]	-1.66 [-1.23]	-1.02 [-0.91]	-0.76 [-0.83]	-1.61 [-1.96]	0.91 [1.22]	0.76 [0.96]	1.55 [1.88]	1.34 [1.54]	2.36 [2.06]	7.48 [3.42]
Panel B1: Alphas reported in PS for January 1966-December 1982											
CAPM alpha	-2.26 [-0.81]	1.63 [0.76]	0.54 [0.31]	0.67 [0.50]	-3.09 [-2.69]	1.44 [1.29]	0.61 [0.54]	1.78 [1.46]	1.43 [1.14]	-0.93 [-0.52]	1.34 [0.36]
Fama-French alpha	-7.32 [-3.36]	-2.22 [-1.23]	-1.80 [-1.13]	-0.75 [-0.59]	-3.29 [-2.85]	1.03 [0.95]	0.20 [0.17]	1.91 [1.56]	2.32 [1.86]	1.18 [0.71]	8.50 [2.77]
Four-factor alpha	-6.43 [-2.82]	-0.25 [-0.13]	-0.22 [-0.13]	-0.03 [-0.02]	-2.46 [-2.05]	1.09 [0.95]	0.31 [0.25]	2.89 [2.28]	1.67 [1.28]	-0.22 [-0.13]	6.21 [1.95]
Panel C1: Alphas reported in PS for January 1983-December 1999											
CAPM alpha	-8.01 [-2.76]	-5.33 [-2.49]	-1.76 [-1.08]	-1.01 [-0.77]	0.20 [0.17]	1.55 [1.46]	1.74 [1.54]	0.70 [0.67]	1.81 [1.47]	3.38 [1.98]	11.39 [3.36]
Fama-French alpha	-5.23 [-2.23]	-5.08 [-2.46]	-2.69 [-1.67]	-1.80 [-1.41]	-0.82 [-0.72]	0.37 [0.38]	0.89 [0.89]	0.76 [0.72]	1.25 [1.05]	5.51 [3.51]	10.74 [3.53]
Four-factor alpha	-4.43 [-1.88]	-3.72 [-1.85]	-1.94 [-1.21]	-1.52 [-1.17]	-0.63 [-0.54]	0.53 [0.54]	0.70 [0.69]	0.47 [0.44]	0.84 [0.70]	5.06 [3.20]	9.49 [3.12]

Table A3 (cont).

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A2: Alphas from replication for January 1966-December 1999											
CAPM alpha	-4.09 [-2.39]	-2.91 [-2.12]	-0.85 [-0.86]	-0.53 [-0.58]	0.62 [0.73]	-0.34 [-0.42]	1.01 [1.03]	0.03 [0.03]	1.57 [1.64]	-0.12 [-0.10]	3.97 [1.76]
Fama-French alpha	-4.56 [-2.92]	-4.15 [-3.18]	-1.91 [-1.99]	-2.02 [-2.40]	-0.12 [-0.14]	-1.01 [-1.25]	1.10 [1.11]	0.36 [0.39]	1.94 [2.00]	1.06 [0.95]	5.63 [2.59]
Four-factor alpha	-3.36 [-2.12]	-2.62 [-2.02]	-1.45 [-1.47]	-1.83 [-2.12]	-0.48 [-0.56]	-1.73 [-2.11]	0.57 [0.56]	-0.49 [-0.54]	1.37 [1.38]	0.12 [0.10]	3.48 [1.59]
Panel B2: Alphas from replication for January 1966-December 1982											
CAPM alpha	-2.12 [-0.77]	-1.28 [-0.53]	0.25 [0.15]	0.65 [0.44]	1.10 [0.84]	0.46 [0.36]	-0.86 [-0.72]	1.40 [1.10]	0.93 [0.70]	-3.11 [-1.84]	-0.99 [-0.28]
Fama-French alpha	-5.69 [-2.63]	-3.95 [-1.85]	-1.45 [-0.91]	-0.73 [-0.51]	0.88 [0.69]	-0.34 [-0.27]	-0.84 [-0.68]	2.68 [2.22]	1.64 [1.21]	-0.68 [-0.45]	5.01 [1.82]
Four-factor alpha	-5.46 [-2.40]	-1.11 [-0.52]	-0.84 [-0.50]	0.14 [0.09]	1.04 [0.77]	-1.09 [-0.83]	-0.14 [-0.11]	2.01 [1.60]	1.79 [1.25]	-0.99 [-0.62]	4.47 [1.55]
Panel C2: Alphas from replication for January 1983-December 1999											
CAPM alpha	-5.59 [-2.59]	-3.02 [-2.15]	-2.23 [-1.79]	-1.25 [-1.09]	0.44 [0.40]	-0.96 [-0.92]	1.79 [1.20]	-1.12 [-0.86]	2.23 [1.56]	2.65 [1.69]	8.24 [2.79]
Fama-French alpha	-4.90 [-2.26]	-4.01 [-2.91]	-2.64 [-2.19]	-2.72 [-2.70]	-0.36 [-0.33]	-1.50 [-1.45]	2.21 [1.46]	-0.68 [-0.53]	2.78 [1.95]	3.72 [2.56]	8.62 [2.87]
Four-factor alpha	-3.36 [-1.58]	-3.23 [-2.36]	-2.25 [-1.84]	-2.90 [-2.83]	-1.08 [-1.02]	-2.07 [-2.00]	1.01 [0.69]	-1.43 [-1.12]	1.86 [1.32]	2.48 [1.78]	5.83 [2.04]

Table A4: Replication of Pastor and Stambaugh (2003) Table 5, alphas of equal-weighted portfolios sorted on predicted liquidity betas. See note to Table 3 of Pastor and Stambaugh (2003). The table reports the decile portfolios' postranking alphas, in percentages per year. The alphas are estimated as intercepts from the regressions of excess portfolio postranking returns on excess market returns (CAPM alpha), on the Fama-French factor returns (Fama-French alpha), and on the Fama-French and momentum factor returns (four-factor alphas). The t-statistics are in brackets.

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A1: Alphas reported in PS for January 1966-December 1999											
CAPM alpha	-5.46 [-2.27]	-1.47 [-0.75]	-0.73 [-0.46]	0.34 [0.24]	0.02 [0.02]	0.94 [0.84]	1.97 [1.91]	2.78 [2.71]	2.43 [2.37]	2.77 [2.06]	8.23 [4.12]
Fama-French alpha	-7.53 [-6.35]	-3.47 [-3.39]	-3.04 [-3.63]	-1.58 [-2.13]	-1.67 [-2.47]	-0.76 [-1.21]	0.46 [0.78]	1.49 [2.50]	1.46 [2.18]	2.96 [3.14]	10.49 [6.50]
Four-factor alpha	-5.80 [-4.98]	-1.64 [-1.68]	-1.68 [-2.07]	-0.68 [-0.92]	-1.02 [-1.50]	-0.17 [-0.26]	0.16 [0.26]	1.32 [2.16]	0.95 [1.40]	1.86 [1.98]	7.66 [4.95]
Panel B1: Alphas reported in PS for January 1966-December 1982											
CAPM alpha	1.74 [0.49]	5.52 [1.90]	5.22 [2.22]	4.49 [2.25]	2.99 [1.70]	4.15 [2.49]	4.76 [3.15]	6.00 [4.10]	4.11 [2.77]	4.68 [2.54]	2.95 [0.98]
Fama-French alpha	-6.50 [-4.02]	-1.12 [-0.76]	-0.80 [-0.69]	-0.51 [-0.52]	-1.21 [-1.25]	0.02 [0.02]	1.12 [1.32]	2.70 [3.17]	1.23 [1.22]	2.76 [1.95]	9.25 [4.19]
Four-factor alpha	-5.32 [-3.16]	1.00 [0.67]	1.28 [1.14]	0.80 [0.81]	0.20 [0.20]	0.93 [1.00]	0.85 [0.96]	2.79 [3.12]	0.84 [0.79]	1.18 [0.81]	6.49 [2.91]
Panel C1: Alphas reported in PS for January 1983-December 1999											
CAPM alpha	-11.47 [-3.70]	-7.36 [-2.94]	-6.09 [-2.92]	-3.06 [-1.63]	-2.21 [-1.41]	-1.58 [-1.10]	0.06 [0.04]	0.29 [0.21]	1.77 [1.34]	1.78 [0.92]	13.25 [5.13]
Fama-French alpha	-8.90 [-5.02]	-5.83 [-4.07]	-5.58 [-4.62]	-2.58 [-2.26]	-2.08 [-2.16]	-1.56 [-1.70]	0.13 [0.15]	0.54 [0.64]	2.37 [2.72]	4.12 [3.33]	13.02 [5.50]
Four-factor alpha	-7.10 [-4.40]	-4.34 [-3.35]	-4.73 [-4.05]	-2.00 [-1.97]	-1.92 [-1.97]	-1.19 [-1.30]	-0.13 [-0.15]	0.29 [0.34]	1.87 [2.18]	3.42 [2.80]	10.51 [4.94]

Table A4 (cont).

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A2: Alphas from replication for January 1966-December 1999											
CAPM alpha	-6.20 [-2.71]	-3.81 [-2.00]	-1.53 [-0.97]	-1.60 [-1.15]	-0.34 [-0.27]	0.31 [0.26]	0.90 [0.80]	1.03 [0.91]	1.85 [1.55]	1.42 [1.07]	7.62 [4.07]
Fama-French alpha	-6.99 [-5.35]	-5.07 [-4.71]	-2.77 [-3.48]	-3.02 [-3.92]	-1.58 [-2.34]	-0.89 [-1.37]	-0.17 [-0.27]	0.21 [0.31]	0.74 [1.05]	1.03 [1.11]	8.02 [4.85]
Four-factor alpha	-5.08 [-3.98]	-3.22 [-3.12]	-1.61 [-2.07]	-1.80 [-2.41]	-1.17 [-1.70]	-0.60 [-0.90]	-0.16 [-0.25]	0.08 [0.11]	0.58 [0.80]	0.54 [0.56]	5.62 [3.47]
Panel B2: Alphas from replication for January 1966-December 1982											
CAPM alpha	0.83 [0.22]	2.64 [0.85]	3.22 [1.32]	2.84 [1.32]	4.29 [2.28]	3.76 [2.07]	3.95 [2.42]	3.92 [2.65]	4.07 [2.48]	2.69 [1.43]	1.86 [0.63]
Fama-French alpha	-5.28 [-2.95]	-2.64 [-1.64]	-1.49 [-1.29]	-1.23 [-1.03]	0.48 [0.52]	0.16 [0.18]	0.97 [1.07]	1.41 [1.58]	1.16 [1.17]	1.17 [0.86]	6.45 [2.96]
Four-factor alpha	-4.06 [-2.19]	-0.03 [-0.02]	0.19 [0.16]	0.77 [0.67]	1.01 [1.05]	0.54 [0.58]	1.08 [1.13]	1.24 [1.33]	1.13 [1.08]	0.33 [0.24]	4.40 [1.97]
Panel C2: Alphas from replication for January 1983-December 1999											
CAPM alpha	-12.47 [-4.65]	-9.70 [-4.39]	-6.00 [-2.95]	-5.41 [-3.01]	-4.48 [-2.74]	-2.53 [-1.55]	-1.61 [-1.03]	-1.33 [-0.79]	0.59 [0.37]	1.08 [0.63]	13.55 [5.84]
Fama-French alpha	-9.81 [-5.44]	-8.13 [-5.62]	-4.39 [-3.79]	-4.49 [-4.30]	-3.48 [-3.45]	-1.61 [-1.63]	-0.79 [-0.87]	-0.19 [-0.19]	1.42 [1.54]	2.05 [1.88]	11.87 [5.33]
Four-factor alpha	-7.77 [-4.72]	-6.78 [-4.94]	-3.51 [-3.12]	-3.65 [-3.61]	-3.10 [-3.04]	-1.31 [-1.31]	-0.78 [-0.84]	-0.19 [-0.19]	1.24 [1.33]	1.75 [1.57]	9.52 [4.61]

Table A5: Replication of Pastor and Stambaugh (2003) Table 7, properties of portfolios sorted on historical liquidity betas. At each year end between 1967 and 1998, eligible stocks are sorted into 10 portfolios according to historical liquidity betas. The betas are constructed as the slope coefficients on the aggregate liquidity innovations in regressions of excess stock returns on that innovation and the three Fama-French factors. The regressions are estimated using the most recent five years of data, and eligible stocks are defined as ordinary common shares traded on the NYSE, AMEX, or NASDAQ with at least three years of monthly returns continuing through the current year end and with stock prices between \$5 and \$1,000. The portfolio returns for the 12 postranking months are linked across years to form one series of postranking returns for each decile. Panel A reports the decile portfolios' postranking liquidity betas, estimated by regressing the value-weighted portfolio excess returns on the aggregate liquidity innovation and the Fama-French factors. Panel B reports the time-series averages of the decile portfolios' market capitalization and liquidity, obtained as value-weighted averages of the corresponding measures across the stocks within each decile. Market capitalization is reported in billions of dollars. A stock's liquidity in any given month is the slope coefficient $\gamma_{i,t}$ from eq. (1), multiplied by 100. Also reported are postranking betas with respect to the three Fama-French factors and a momentum factor, estimated by regressing value-weighted portfolio excess returns on the four factors.

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A1: Liquidity betas reported in PS											
Jan. 1968-Dec. 1999	-6.02	-0.65	-0.62	-0.54	1.12	-1.58	1.37	2.00	3.04	-0.04	5.99
	[-2.57]	[-0.37]	[-0.48]	[-0.41]	[0.96]	[-1.24]	[1.00]	[1.49]	[1.99]	[-0.02]	[1.88]
Jan. 1968-Dec. 1983	-7.59	-1.17	3.87	-1.54	-0.48	1.65	-1.18	0.02	1.26	0.41	7.99
	[-1.84]	[-0.44]	[1.86]	[-0.68]	[-0.25]	[0.71]	[-0.55]	[0.01]	[0.54]	[0.14]	[1.60]
Jan. 1984-Dec. 1999	-4.17	-1.49	-4.10	-0.30	2.55	-2.75	2.80	3.79	4.38	1.18	5.35
	[-1.52]	[-0.63]	[-2.46]	[-0.18]	[1.72]	[-2.00]	[1.56]	[2.08]	[2.07]	[0.39]	[1.26]
Panel B1: Portfolio properties reported in PS											
Market cap	7.11	7.69	10.44	17.65	16.76	22.18	16.26	11.64	9.89	6.97	
Liquidity	-0.52	-0.19	-0.06	-0.04	-0.02	-0.05	-0.05	-0.05	-0.05	-0.12	
MKT beta	1.12	1.09	1.02	0.96	0.98	0.99	1.02	1.01	1.02	1.09	-0.03
	[37.25]	[48.37]	[61.23]	[56.63]	[65.92]	[59.99]	[58.01]	[58.52]	[51.53]	[40.84]	[-0.74]
SMB beta	0.37	-0.00	-0.13	-0.16	-0.09	-0.15	-0.11	-0.00	0.04	0.16	-0.20
	[8.02]	[-0.02]	[-5.11]	[-6.03]	[-4.21]	[-6.10]	[-4.19]	[-0.02]	[1.20]	[4.06]	[-3.25]
HML beta	-0.20	-0.05	0.02	-0.02	0.10	0.12	0.07	0.09	-0.01	-0.15	0.05
	[-4.04]	[-1.31]	[0.87]	[-0.80]	[4.22]	[4.40]	[2.60]	[3.27]	[-0.38]	[-3.39]	[0.76]
MOM beta	0.04	-0.00	0.02	0.01	-0.02	-0.00	-0.01	0.01	-0.02	-0.01	-0.05
	[1.64]	[-0.18]	[1.25]	[1.13]	[-1.91]	[-0.17]	[-0.76]	[0.65]	[-1.11]	[-0.46]	[-1.51]

Table A5 (cont).

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A2: Liquidity betas from replication											
Jan. 1968-Dec. 1999	-7.16 [-2.93]	-0.29 [-0.17]	-1.29 [-0.85]	-0.69 [-0.50]	3.31 [2.57]	-0.01 [-0.01]	1.09 [0.75]	0.63 [0.39]	3.06 [1.74]	-0.15 [-0.07]	7.01 [2.12]
Jan. 1968-Dec. 1983	-10.11 [-2.31]	-0.32 [-0.12]	1.22 [0.48]	-1.94 [-0.82]	2.21 [0.98]	3.85 [1.55]	-3.34 [-1.45]	0.98 [0.36]	2.04 [0.74]	-0.99 [-0.32]	9.12 [1.78]
Jan. 1984-Dec. 1999	-4.63 [-1.55]	-0.80 [-0.34]	-3.32 [-1.82]	-0.73 [-0.44]	4.97 [3.18]	-1.86 [-1.17]	3.22 [1.65]	1.22 [0.59]	5.32 [2.26]	0.77 [0.23]	5.39 [1.19]
Panel B2: Portfolio properties from replication											
Market cap	8.35	8.92	17.09	21.51	16.12	24.32	17.05	14.50	9.55	8.23	
Liquidity	-0.09	-0.09	-0.09	-0.01	-0.02	-0.04	-0.05	-0.05	-0.13	-0.08	
MKT beta	1.12 [38.24]	1.07 [51.93]	1.01 [57.14]	0.96 [59.90]	0.96 [62.82]	0.99 [63.03]	1.00 [59.08]	0.99 [52.41]	1.02 [49.90]	1.11 [40.82]	-0.01 [-0.22]
SMB beta	0.30 [6.87]	0.00 [0.04]	-0.16 [-6.15]	-0.13 [-5.32]	-0.11 [-4.62]	-0.15 [-6.19]	-0.13 [-5.10]	0.04 [1.50]	0.10 [3.16]	0.15 [3.67]	-0.15 [-2.57]
HML beta	-0.19 [-4.03]	-0.04 [-1.21]	-0.01 [-0.45]	0.01 [0.43]	0.14 [5.48]	0.13 [5.15]	0.03 [0.93]	0.13 [4.34]	0.01 [0.35]	-0.09 [-2.11]	0.10 [1.54]
MOM beta	0.01 [0.29]	-0.01 [-0.81]	0.02 [1.66]	-0.00 [-0.22]	-0.00 [-0.39]	0.00 [0.30]	-0.03 [-2.42]	0.01 [0.62]	-0.01 [-0.81]	-0.02 [-0.84]	-0.02 [-0.79]

Table A6: Replication of Pastor and Stambaugh (2003) Table 8, alphas of value-weighted portfolios sorted on historical liquidity betas. See note to Table 7 of Pastor and Stambaugh (2003). The table reports the decile portfolios' postranking alphas, in percentages per year. The alphas are estimated as intercepts from the regressions of excess portfolio postranking returns on excess market returns (CAPM alpha), on the Fama-French factor returns (Fama-French alpha), and on the Fama-French and momentum factor returns (four-factor alphas). The t-statistics are in brackets.

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A1: Alphas reported in PS for January 1968-December 1999											
CAPM alpha	-2.06 [-1.30]	-0.36 [-0.34]	0.63 [0.76]	0.49 [0.57]	0.07 [0.10]	0.49 [0.59]	1.42 [1.64]	1.36 [1.63]	-0.02 [-0.02]	2.60 [1.96]	4.66 [2.36]
Fama-French alpha	-0.62 [-0.42]	-0.09 [-0.08]	0.46 [0.57]	0.57 [0.68]	-0.62 [-0.86]	-0.28 [-0.35]	0.90 [1.06]	0.84 [1.00]	0.03 [0.03]	3.53 [2.71]	4.15 [2.08]
Four-factor alpha	-1.20 [-0.79]	-0.04 [-0.04]	0.22 [0.26]	0.34 [0.40]	-0.29 [-0.40]	-0.25 [-0.31]	1.05 [1.20]	0.71 [0.82]	0.29 [0.29]	3.67 [2.74]	4.87 [2.38]
Panel B1: Alphas reported in PS for January 1968-December 1983											
CAPM alpha	-1.10 [-0.46]	1.04 [0.70]	0.94 [0.79]	0.35 [0.27]	-0.28 [-0.26]	0.46 [0.34]	0.09 [0.08]	0.83 [0.72]	0.33 [0.25]	2.51 [1.51]	3.62 [1.32]
Fama-French alpha	-1.24 [-0.53]	2.32 [1.56]	1.66 [1.41]	1.53 [1.21]	-1.05 [-0.98]	-0.49 [-0.38]	-0.06 [-0.05]	-0.07 [-0.06]	0.17 [0.13]	1.61 [1.01]	2.85 [1.01]
Four-factor alpha	-3.74 [-1.58]	1.50 [0.96]	0.87 [0.71]	0.86 [0.66]	-0.20 [-0.18]	0.21 [0.16]	0.59 [0.47]	-0.18 [-0.15]	0.59 [0.43]	1.64 [0.98]	5.38 [1.86]
Panel C1: Alphas reported in PS for January 1984-December 1999											
CAPM alpha	-2.79 [-1.31]	-1.63 [-1.04]	0.21 [0.18]	0.40 [0.36]	0.37 [0.36]	0.23 [0.23]	3.12 [2.51]	1.70 [1.40]	-0.11 [-0.08]	2.70 [1.28]	5.49 [1.90]
Fama-French alpha	0.03 [0.02]	-2.04 [-1.29]	-0.60 [-0.53]	-0.33 [-0.30]	-0.40 [-0.40]	-0.55 [-0.59]	2.21 [1.83]	1.50 [1.22]	-0.11 [-0.07]	4.41 [2.20]	4.38 [1.54]
Four-factor alpha	0.57 [0.30]	-1.50 [-0.94]	-0.50 [-0.44]	-0.28 [-0.25]	-0.39 [-0.38]	-0.87 [-0.93]	2.06 [1.68]	1.35 [1.08]	0.02 [0.01]	4.55 [2.23]	3.98 [1.38]

Table A6 (cont).

	Decile Portfolio										
	1	2	3	4	5	6	7	8	9	10	10-1
Panel A2: Alphas from replication for January 1968-December 1999											
CAPM alpha	-1.62	-1.03	0.22	0.83	0.29	0.09	0.46	1.96	0.22	2.47	4.09
	[-1.06]	[-1.04]	[0.24]	[1.03]	[0.37]	[0.11]	[0.55]	[2.12]	[0.22]	[1.83]	[2.12]
Fama-French alpha	-0.34	-0.82	0.29	0.71	-0.56	-0.72	0.20	1.22	0.16	3.03	3.37
	[-0.24]	[-0.80]	[0.34]	[0.91]	[-0.75]	[-0.94]	[0.24]	[1.32]	[0.16]	[2.25]	[1.73]
Four-factor alpha	-0.48	-0.64	-0.06	0.75	-0.50	-0.78	0.68	1.08	0.36	3.27	3.75
	[-0.32]	[-0.61]	[-0.06]	[0.93]	[-0.64]	[-0.98]	[0.80]	[1.14]	[0.35]	[2.37]	[1.87]
Panel B2: Alphas from replication for January 1968-December 1983											
CAPM alpha	-1.40	0.13	0.86	0.48	-0.23	0.03	-0.09	1.90	0.22	2.73	4.13
	[-0.61]	[0.09]	[0.64]	[0.41]	[-0.20]	[0.03]	[-0.08]	[1.44]	[0.16]	[1.64]	[1.59]
Fama-French alpha	-1.18	1.04	2.68	1.06	-1.19	-0.48	0.00	0.70	-0.70	1.72	2.90
	[-0.53]	[0.77]	[2.16]	[0.90]	[-1.04]	[-0.38]	[0.00]	[0.53]	[-0.51]	[1.09]	[1.09]
Four-factor alpha	-2.75	0.27	1.62	0.87	-0.76	-0.03	0.88	0.78	0.12	1.67	4.41
	[-1.20]	[0.19]	[1.28]	[0.71]	[-0.64]	[-0.02]	[0.73]	[0.57]	[0.09]	[1.01]	[1.59]
Panel C2: Alphas from replication for January 1984-December 1999											
CAPM alpha	-1.05	-1.02	-0.16	0.70	0.46	-0.07	1.41	1.42	0.36	2.57	3.62
	[-0.48]	[-0.68]	[-0.12]	[0.62]	[0.40]	[-0.07]	[1.06]	[1.04]	[0.23]	[1.13]	[1.18]
Fama-French alpha	0.78	-1.45	-1.08	0.07	-0.48	-0.88	0.70	1.25	0.92	3.55	2.77
	[0.39]	[-0.96]	[-0.88]	[0.06]	[-0.46]	[-0.93]	[0.55]	[0.91]	[0.58]	[1.59]	[0.92]
Four-factor alpha	1.34	-0.93	-1.02	0.20	-0.60	-1.13	0.88	1.04	0.79	3.81	2.47
	[0.66]	[-0.62]	[-0.82]	[0.18]	[-0.57]	[-1.18]	[0.68]	[0.75]	[0.50]	[1.69]	[0.81]

Table A7: Replication of Pastor and Stambaugh (2003) Table 11, liquidity risk spreads and investment opportunities: alphas of regression of momentum on portfolios listed. The table reports the alphas (percent per year) of the momentum portfolio MOM with respect to the factors listed in each row. These factors include the Fama-French factors MKT, SMB, HML and two liquidity risk spreads, both of which go long decile 10, containing the stocks with the highest predicted liquidity betas, and short decile 1, containing the stocks with the lowest betas. Each leg of the spread is value-weighted in LIQ_{vw} and equally weighted in LIQ_{ew} .

	Results in PS			Replication results		
	January 1966- December 1999	January 1966- December 1982	January 1983- December 1999	January 1966- December 1999	January 1966- December 1982	January 1983- December 1999
MKT,SMB HML	16.30 [4.85]	21.65 [4.53]	11.10 [2.29]	16.07 [4.90]	19.92 [4.29]	12.27 [2.57]
MKT,SMB,HML, LIQ_{vw}	13.89 [4.09]	19.46 [4.04]	8.03 [1.63]	14.12 [4.39]	18.77 [4.05]	7.20 [1.57]
MKT,SMB,HML, LIQ_{ew}	8.41 [2.55]	16.11 [3.35]	-1.29 [-0.28]	10.50 [3.31]	15.44 [3.44]	1.77 [0.38]