Internet Appendix for "The Expected Returns and Valuations of Private and Public Firms"

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March 25, 2015

Abstract

We report supplementary results for Cooper and Priestley (2015).

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Table A.1.

Cross Sectional Regressions with Risk Factors

We perform a set of cross sectional regressions of investment returns on factor loadings. The four factor model, based on Hou, Xue and Zhang (2014), is

$$r_i = \lambda^0 + \lambda^m \widehat{\beta}_{i,m} + \lambda^{I/K} \widehat{\beta}_{i,I/K} + \lambda^{ROA} \widehat{\beta}_{i,ROA} + \lambda^k \widehat{\beta}_{i,k} + \epsilon_i,$$

where r_i is the investment return, $\widehat{\beta}_{i,MKT}$ is the factor loading on the market investment return portfolio, $\widehat{\beta}_{i,I/K}$ is the factor loading on the I/K investment return portfolio, $\widehat{\beta}_{i,ROA}$ is the factor loading on the ROA investment return portfolio, and ϵ_i is the residual. The factor loadings are estimated over the full sample period. The table reports the constant and the estimated prices of risk (t-values in parenthesis). Quintiles are sorted by the fraction of the employees of listed firms in the industry to total industry employees. Private refers to the quintile with the lowest fraction, whereas the column Public refers to the quintile with the highest fraction. $R^2 = \left[Var_c(\overline{r}_i) - Var_c(\overline{e}_i)\right] / Var_c(\overline{r}_i)$, where Var_c is the cross-sectional variance, $\overline{r}_i$ is the average investment return and $\overline{e}_i$ is the average residual. $\bar{R}^2$ is the adjusted R^2. We define the pricing error for a given portfolio i as the difference between the actual investment return and the expected investment return according to the cross-sectional test; $p.e.$ represents the square root of the aggregate squared pricing errors across all portfolios in each division (p-value in brackets). The test assets are twenty portfolios, five each according to I/K, ROA, lagged investment, and the size of the capital stock. The sample period is 1960 to 2009.

Panel A: Quintiles Sorted by Employees

γ_0	γ_{MKT}	$\gamma_{\frac{I}{K}}$	γ_{ROA}	γ_K	$\overline{R}^2$	pe_{ALL}	χ^2_{ALL}
Quintile 1 Private							
−0.049 (3.09)	0.137 (6.79)	0.108 (7.23)	0.090 (6.86)	−0.004 (0.26)	0.952	0.010	38.953 [0.00]
Quintile 2							
0.047 (3.04)	0.052 (2.90)	0.123 (9.59)	0.077 (4.49)	−0.033 (1.70)	0.819	0.017	44.413 [0.00]
Quintile 3							
−0.003 (0.20)	0.091 (4.31)	0.133 (7.32)	0.084 (5.01)	0.008 (0.30)	0.601	0.018	44.762 [0.00]
Quintile 4							
−0.095 (3.94)	0.181 (6.93)	0.148 (6.44)	0.066 (3.19)	0.144 (3.99)	0.475	0.025	46.838 [0.00]
Quintile 5 Public							
0.118 (3.04)	−0.0044 (0.12)	0.094 (5.92)	0.096 (5.82)	0.059 (2.92)	0.943	0.019	40.812 [0.00]

Table A.2.

Expected and Actual Investment Returns

This Table reports the average investment returns (AR) and the expected investment returns (ER) from the four factor model based on Hou, Xue and Zhang (2014) for quintile groups based on the fraction of employee of public firms in the industry to total industry employees. For each quintile the actual returns and expected returns are reported for five portfolios sorted by the investment to capital ratio (I/K), the return on assets (ROA), size (measured as the size of the real capital stock) and idiosyncratic volatility (IVOL). The sample period is 1960-2009.

	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5		Q1 - Q5
Port	AR	ER	AR	ER	AR	ER	AR	ER	AR	ER	ER Diff
Low I/K	0.21	0.198	0.188	0.185	0.17	0.135	0.146	0.098	0.145	0.132	0.066
2	0.123	0.129	0.122	0.1	0.108	0.084	0.115	0.087	0.125	0.121	0.008
3	0.082	0.074	0.076	0.084	0.074	0.074	0.069	0.095	0.199	0.198	-0.124
4	0.053	0.039	0.049	0.025	0.028	0.084	0.035	0.068	0.129	0.139	-0.1
High I/K	-0.021	0.004	-0.03	0.015	-0.031	-0.028	0.015	0.026	-0.004	0.015	-0.011
Low ROA	0.024	0.027	0.018	0.045	0.019	0.075	0.011	0.043	0.023	0.015	0.012
2	0.061	0.06	0.064	0.067	0.06	0.065	0.038	0.07	0.042	0.07	-0.01
3	0.071	0.051	0.072	0.071	0.075	0.054	0.07	0.095	0.043	0.063	-0.012
4	0.081	0.097	0.087	0.07	0.066	0.063	0.098	0.074	0.076	0.086	0.011
High ROA	0.212	0.21	0.163	0.156	0.128	0.089	0.165	0.095	0.404	0.355	-0.145
Small	0.181	0.189	0.15	0.148	0.099	0.092	0.129	0.088	0.083	0.115	0.074
2	0.073	0.057	0.07	0.034	0.103	0.099	0.055	0.077	0.054	0.037	0.02
3	0.06	0.065	0.07	0.098	0.068	0.071	0.083	0.116	0.083	0.036	0.029
4	0.065	0.084	0.07	0.059	0.043	0.043	0.072	0.061	0.081	0.075	0.009
Large	0.069	0.049	0.043	0.07	0.034	0.043	0.042	0.031	0.288	0.33	-0.281
Low Ivol	0.107	0.111	0.103	0.075	0.063	0.051	0.073	0.047	0.065	0.083	0.028
2	0.073	0.063	0.041	0.067	0.072	0.034	0.058	0.06	0.045	0.056	0.007
3	0.056	0.06	0.065	0.043	0.063	0.076	0.057	0.071	0.075	0.058	0.002
4	0.059	0.073	0.08	0.079	0.074	0.094	0.099	0.118	0.088	0.059	0.014
High Ivol	0.19	0.192	0.172	0.184	0.086	0.103	0.145	0.156	0.316	0.317	-0.125