The Internet Appendix for "Investment-Based Expected Stock Returns"

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Abstract

This Internet Appendix: (i) reports the unabridged tables that correspond to Tables 1, 3, 4, and 5 in the manuscript; and (ii) documents the supplementary results from an array of robustness tests that are only described briefly (not reported in details) in the manuscript.

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1 Unabridged Tables

Tables A1 to A4 in this Internet Appendix report the unabridged versions of Tables 1, 3, 4, and 5 in the manuscript.

2 Robustness

This section reports detailed results from a long list of robustness tests that are only described briefly in the manuscript.

2.1 Second-Stage GMM

The estimation and test results reported in the manuscript are based on one-stage GMM. Table A5 reports that the parameter estimates from the second-stage GMM are similar to the first-stage estimates. Table A6 and Figures A1 and A2 show that the inferences about the mean errors and variance errors from the second-stage GMM are largely similar to those from the one-stage GMM.

2.2 The Market Value of Debt

The estimation and test results reported in the manuscript are based on the book value of debt as the proxy for the market value of debt, B_{it}, in the model. In this Internet Appendix we use the Bernanke and Campbell (1988) algorithm to convert the book value of debt into the market value of debt. The detailed algorithm is described in Whited (1992, pp. 1457–1458).

The imputed market values of debt are highly correlated with the book values of debt, and their use makes little difference for the Euler equation estimation results. Table A7 reports that the parameter estimates with the market value of debt are similar to the benchmark estimates. Table A8 and Figures A3 and A4 show that the inferences about the mean errors and variance errors with the market value of debt are largely similar to those with the book value of debt.

2.3 Value-Weighted Returns

The benchmark estimation results reported in the manuscript are based on equal-weighted portfolio returns. Table A9 shows that the estimates of the adjustment cost parameter, a, are somewhat smaller that those in the benchmark estimation when we use the q-theory model to match expected returns only. The estimates of a are similar to those in the benchmark estimation when the model is used to match both expected returns and variances.

Table A10 shows that the q-theory model performs reasonably well in accounting for the expected returns and variances of the testing portfolios. Although the model produces a mean error of -2.23% per annum ($t = -1.91$) for the high-minus-low SUE portfolio when matching expected returns alone, this mean error is only 1.74% per annum ($t = 0.89$) when matching means and variances of returns of ten SUE portfolios simultaneously. This error is substantially smaller than the corresponding error of 12.37% per annum ($t = 2.51$) in the benchmark estimation. The mean error for the high-minus-low B/M portfolio is only -0.53% per annum ($t = -0.18$) when matching both means and variances. In contrast, this mean error in the benchmark estimation with equal-weighted returns is much larger, 5.89% ($t = 1.08$). The other aspects of the estimation and tests are similar to the benchmark specification. More details are in the scatter plots of Figures A5 and A6.

2.4 Alternative Window Length in the Standard Bartlett Kernel

We consider two alternative cases with window length in the Standard Bartlett Kernel different from five (the benchmark specification). The first case has the window length of one, and the second case has the window length of ten. Changing the window length in the Bartlett kernel does not affect the parameter estimates. Only their standard errors, χ^2, and p-values of various tests are affected. As such, the mean errors and the variance errors are identical to those in the benchmark estimation, and the scatter plots also remain the same. Even with standard errors affected, Table A11 to A14 show that the basic inferences are largely similar to those in the benchmark estimation and tests.

2.5 Alternative Measures of Capital and Investment

Our basic results are robust to an alternative measure of the capital stock as the net property, plant, and equipment (Compustat annual item 8) and to an alternative definition of investment as capital expenditures (item 128). Table A15 to A18 reports the parameter estimates and Euler equation errors and Figure A7 to A10 reports the related scatter plots.

2.6 Time-Invariant Tax Rates

The benchmark specification uses time-varying tax rates. Using time-invariant tax rates measured at the sample mean of 42.3% from 1963 to 2005 yields largely similar results. See Table A19 for the parameter estimates and tests of overidentification, Table A20 for Euler equation errors, and Figures A11 and A12 for the scatter plots in the alternative specification with time-invariant tax rates.

2.7 Portfolio-Specific Tax Rates

The benchmark specification uses time-varying but portfolio-invariant tax rates. Using time-varying and portfolio-specific corporate tax rates yields largely similar results. To measure the portfolio-specific corporate tax rate, τ^i_{t+1}, we first construct firm-specific tax rates using the trichotomous variable approach of Graham (1996), and then take the value-weighted tax rates across all firms within a given portfolio i. In estimating the model with firm-specific tax rates, we assume that firms take these tax rates as exogenous. Table A21 reports the details for the parameter estimates and tests of overidentification, Table A22 for Euler equation errors, and Figures A13 and A14 for the scatter plots in the alternative specification with time-varying and portfolio-specific tax rates.

References

Bernanke, Ben S. and John Y. Campbell, 1988, Is there a corporate debt crisis? *Brookings Papers on Economic Activity* 1, 83–125.

Graham, John R., 1996, Proxies for the corporate marginal tax rate, *Journal of Financial Economics* 42, 187–221.

Whited, Toni M., 1992, Debt, liquidity constraints, and corporate investment: Evidence from panel data, *Journal of Finance* 47, 1425–1460.

Table A1 : Descriptive Statistics of Testing Portfolio Returns

For each testing portfolio i, we report in annualized percent the average stock return, $\bar{r}_i^S$, the stock return volatility, σ_i^S, the intercept from the CAPM regression, e_i, the intercept from the Fama-French three-factor regression, e_i^{FF}, and the model error from the standard consumption CAPM, e_i^C. The H−L portfolio is long in the high portfolio and short in the low portfolio. The heteroscedasticity-and-autocorrelation-consistent t-statistics for the model errors are reported in brackets beneath the corresponding errors. a.a.p.e. is the average of the absolute values of the errors for a given set of ten testing portfolios. For the CAPM and the Fama-French model, the p-values in brackets in the last column are for the Gibbons, Ross, and Shanken (1989) tests of the null hypothesis that the intercepts for a given set of portfolios are jointly zero. For the standard consumption CAPM the p-values are for the χ^2 test from one-stage GMM that the moment restrictions are jointly zero. In Panel A for the standard consumption CAPM the estimate of the time preference coefficient is $\beta = 2.76$ with a standard error (ste) of 1.05 and the estimate of risk aversion is $\gamma = 127.59$ (ste = 59.07). In Panel B $\beta = 3.31$ (ste = 1.38) and $\gamma = 142.08$ (ste = 63.73). In Panel C $\beta = 3.30$ (ste = 1.39) and $\gamma = 143.28$ (ste = 62.71).

	Low	2	3	4	5	6	7	8	9	High	H−L	a.a.p.e.	[p]
					Panel A: Ten SUE portfolios								
$\bar{r}_i^S$	10.89	12.04	14.95	15.43	18.95	19.39	20.34	20.43	22.53	23.39	12.50		
σ_i^S	22.35	20.50	22.01	21.42	22.51	23.50	22.59	21.87	23.09	21.13	8.46		
e_i	−1.69	−0.18	2.59	3.28	6.56	6.43	7.61	7.72	9.78	10.86	12.55	5.67	[0.00]
[t]	[−0.84]	[−0.09]	[1.21]	[1.48]	[2.83]	[2.96]	[3.57]	[3.86]	[4.34]	[5.74]	[5.53]		
e_i^{FF}	−4.59	−2.78	−0.47	0.56	1.96	3.05	4.26	6.07	6.83	9.47	14.06	4.01	[0.00]
[t]	[−2.27]	[−1.50]	[−0.28]	[0.28]	[0.89]	[1.60]	[2.33]	[3.74]	[3.22]	[5.20]	[5.31]		
e_i^C	−8.07	−4.56	−1.80	−2.42	−0.04	−1.88	−1.58	4.13	6.39	5.31	13.38	3.62	[0.00]
[t]	[−1.19]	[−0.92]	[−0.37]	[−0.46]	[0.01]	[0.38]	[0.35]	[1.06]	[1.58]	[1.36]	[1.35]		
					Panel B: Ten B/M portfolios								
$\bar{r}_i^S$	8.65	14.14	15.68	15.54	17.93	18.47	19.50	19.94	22.81	25.78	17.13		
σ_i^S	27.93	26.44	24.94	23.64	24.92	23.12	23.69	22.49	22.93	26.97	20.54		
e_i	−4.91	0.81	2.88	3.02	5.19	6.10	7.41	8.20	11.26	13.65	18.56	6.34	[0.00]
[t]	[−2.11]	[0.40]	[1.48]	[1.52]	[2.59]	[3.19]	[3.30]	[3.58]	[4.64]	[4.66]	[2.51]		
e_i^{FF}	−0.54	2.08	1.77	−1.06	1.80	2.42	2.26	3.58	5.63	6.76	7.30	2.79	[0.00]
[t]	[−0.24]	[1.22]	[1.17]	[−0.68]	[1.08]	[1.81]	[1.65]	[2.85]	[3.85]	[3.10]	[3.25]		
e_i^C	−5.43	−1.86	−1.56	−1.60	0.27	0.56	0.82	2.48	2.12	6.88	12.31	2.36	[0.00]
[t]	[−0.66]	[−0.26]	[−0.25]	[−0.29]	[0.06]	[0.12]	[0.18]	[0.90]	[0.60]	[1.96]	[0.26]		
					Panel C: Ten CI portfolios								
$\bar{r}_i^S$	22.12	19.67	18.85	18.80	18.10	18.31	16.97	17.32	17.66	15.16	−6.96		
σ_i^S	32.42	26.17	23.73	23.31	22.26	22.25	21.91	21.44	25.32	26.73	11.37		
e_i	8.21	7.05	6.25	6.57	5.89	6.26	4.73	5.39	4.84	1.91	−6.30	5.71	[0.01]
[t]	[2.91]	[2.94]	[3.11]	[3.08]	[3.10]	[3.10]	[2.57]	[2.73]	[2.32]	[0.87]	[−3.88]		
e_i^{FF}	6.45	3.01	2.85	2.58	1.54	1.41	1.22	1.91	1.29	0.11	−6.34	2.24	[0.01]
[t]	[2.81]	[1.81]	[1.94]	[1.84]	[1.12]	[1.07]	[0.99]	[1.36]	[0.79]	[0.06]	[−3.99]		
e_i^C	4.03	3.76	1.66	0.12	0.46	0.04	−1.46	−0.57	−1.09	−4.35	−8.38	2.36	[0.00]
[t]	[0.75]	[0.90]	[0.39]	[0.02]	[0.11]	[0.01]	[−0.26]	[−0.11]	[−0.20]	[−0.71]	[−1.35]		

Table A2 : Euler Equation Errors

Euler equation errors and t-statistics are from one-stage GMM estimation with an identity weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, as well as their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.26	−1.72	−0.05	0.72	1.66	0.51	0.61	−1.25	−0.50	−0.15	−0.40
$[t]$	[0.61]	[−1.75]	[−0.07]	[0.98]	[1.70]	[0.69]	[1.07]	[−1.12]	[−0.59]	[−0.14]	[−0.41]
	Ten B/M portfolios										
e^q_i	−3.94	−3.20	−1.02	2.74	2.35	3.07	2.51	1.62	0.05	−2.73	1.21
$[t]$	[−1.76]	[−1.38]	[−0.66]	[1.39]	[1.37]	[1.11]	[1.31]	[0.59]	[0.03]	[−1.37]	[0.79]
	Ten CI portfolios										
e^q_i	−0.97	−2.71	−0.50	0.93	2.72	3.37	0.94	0.46	−1.02	−1.45	−0.49
$[t]$	[−0.51]	[−1.95]	[−0.61]	[0.96]	[1.74]	[2.19]	[0.75]	[0.78]	[−0.94]	[−1.24]	[−0.41]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.04	−0.04	0.01	−0.01	0.02	0.03	0.04	0.01	0.02	0.03	0.08
$[t]$	[−1.93]	[−1.85]	[0.76]	[−0.40]	[0.95]	[1.57]	[1.66]	[0.92]	[0.80]	[1.47]	[1.83]
e^q_i	−6.99	−6.50	−2.12	−1.62	2.60	1.79	2.27	1.48	3.75	5.38	12.37
$[t]$	[−2.24]	[−2.27]	[−1.49]	[−1.06]	[1.91]	[1.32]	[1.82]	[0.83]	[1.74]	[2.01]	[2.51]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.06	0.01	0.01	0.02	0.01	−0.01	−0.02	−0.10	−0.20
$[t]$	[2.35]	[2.19]	[2.07]	[0.60]	[0.50]	[0.85]	[0.28]	[−0.31]	[−1.19]	[−1.99]	[−2.39]
e^q_i	−6.46	−3.83	−2.11	−0.04	1.71	2.60	3.54	3.11	1.85	−0.58	5.89
$[t]$	[−1.89]	[−1.73]	[−1.02]	[−0.02]	[0.94]	[1.21]	[1.78]	[1.47]	[1.14]	[−0.15]	[1.08]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.01	−0.00	0.02	0.01	0.03	0.02	0.02	0.02	−0.02	−0.06	−0.07
$[t]$	[0.34]	[−0.17]	[1.13]	[0.55]	[1.33]	[1.06]	[0.75]	[1.05]	[−1.13]	[−1.77]	[−1.36]
e^q_i	1.29	−2.51	−0.11	1.86	3.47	3.48	1.12	0.28	−2.82	−5.32	−6.60
$[t]$	[0.49]	[−1.56]	[−0.09]	[1.15]	[1.97]	[1.80]	[0.88]	[0.21]	[−1.53]	[−1.97]	[−2.04]

Table A3 : Expected Returns Accounting

Panel A reports the averages of investment-to-capital, I_{it}/K_{it}, future investment growth, $(I_{it+1}/K_{it+1})/(I_{it}/K_{it})$, sales-to-capital, Y_{it+1}/K_{it+1}, the depreciation rate, δ_{it+1}, market leverage, w_{it}, and corporate bond returns in annual percent, r^B_{it+1}, for all the testing portfolios. The column H−L reports the average differences between high and low portfolios and the column $[t_{\text{H−L}}]$ reports the heteroscedasticity-and-autocorrelation-consistent t-statistics for the test that the differences equal zero. Panel B performs four comparative static experiments denoted $\overline{I_{it}/K_{it}}$, $\overline{q_{it+1}/q_{it}}$, $\overline{Y_{it+1}/K_{it+1}}$, and $\overline{w}_{it}$, in which $q_{it+1}/q_{it} = [1+(1-\tau_{t+1})a(I_{it+1}/K_{it+1})]/[1+(1-\tau_t)a(I_{it}/K_{it})]$. In the experiment denoted $\overline{Y_{it+1}/K_{it+1}}$, we set Y_{it+1}/K_{it+1} for a given set of portfolios, indexed by i, to be its cross-sectional average in $t+1$. We then use the parameters reported in Panel A of Table 2 in the manuscript to reconstruct the levered investment returns, while keeping all the other characteristics unchanged. The other three experiments are designed analogously. We report the mean errors defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$ for the testing portfolios, the high-minus-low portfolios, and the average absolute value of e^q_i (a.a.p.e.).

Panel A: Characteristics in levered investment returns

	Low	2	3	4	5	6	7	8	9	High	H−L	$[t_{\text{H−L}}]$
	Ten SUE portfolios											
I_{it}/K_{it}	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.00	[0.70]
$(I_{it+1}/K_{it+1})/(I_{it}/K_{it})$	0.89	0.93	0.96	0.96	1.00	1.01	1.02	1.05	1.07	1.06	0.17	[4.06]
Y_{it+1}/K_{it+1}	1.52	1.52	1.48	1.47	1.50	1.58	1.61	1.62	1.65	1.83	0.31	[5.16]
δ_{it+1}	0.08	0.07	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.00	[0.63]
w_{it}	0.30	0.29	0.32	0.28	0.28	0.26	0.27	0.27	0.27	0.21	−0.10	[−5.83]
r^B_{it+1}	9.44	9.48	9.61	9.81	9.76	9.53	9.69	9.45	9.50	9.38	−0.06	[−0.27]
	Ten B/M portfolios											
I_{it}/K_{it}	0.18	0.14	0.13	0.13	0.11	0.11	0.10	0.10	0.09	0.08	−0.10	[−7.95]
$(I_{it+1}/K_{it+1})/(I_{it}/K_{it})$	0.98	1.00	0.99	0.98	1.00	1.01	1.01	1.01	1.03	1.02	0.04	[0.68]
Y_{it+1}/K_{it+1}	1.95	1.88	1.70	1.58	1.45	1.37	1.30	1.32	1.39	1.38	−0.57	[−6.77]
δ_{it+1}	0.10	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	−0.03	[−5.01]
w_{it}	0.08	0.17	0.25	0.24	0.27	0.31	0.34	0.42	0.45	0.53	0.44	[12.44]
r^B_{it+1}	8.17	8.01	8.04	8.12	8.09	8.24	8.32	8.29	8.33	8.52	0.35	[1.05]
	Ten CI portfolios											
I_{it}/K_{it}	0.09	0.09	0.10	0.10	0.11	0.12	0.12	0.13	0.14	0.16	0.07	[11.06]
$(I_{it+1}/K_{it+1})/(I_{it}/K_{it})$	1.25	1.20	1.10	1.08	1.04	1.01	0.99	0.93	0.91	0.81	−0.44	[−7.23]
Y_{it+1}/K_{it+1}	1.84	1.94	1.85	1.75	1.58	1.58	1.72	1.81	1.91	1.89	0.05	[0.38]
δ_{it+1}	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.08	0.00	[−0.46]
w_{it}	0.35	0.27	0.24	0.23	0.25	0.24	0.23	0.23	0.26	0.28	−0.07	[−2.59]
r^B_{it+1}	8.47	8.50	8.33	8.27	8.27	8.23	8.14	8.13	8.27	8.44	−0.03	[−0.15]

Panel B: Mean errors from comparative static experiments

	Low	2	3	4	5	6	7	8	9	High	H−L	a.a.p.e.
	Ten SUE portfolios											
$\overline{I_{it}/K_{it}}$	−2.48	−4.45	0.17	1.99	4.45	1.80	1.80	1.01	1.13	−4.26	−1.78	2.35
$\overline{q_{it+1}/q_{it}}$	−5.23	−5.09	−1.83	−1.10	1.76	1.18	1.80	1.33	3.36	3.62	8.85	2.62
$\overline{Y_{it+1}/K_{it+1}}$	−0.78	−2.60	−1.90	−1.10	0.39	0.70	1.21	−0.52	0.62	3.53	4.31	1.34
$\overline{w}_{it}$	0.13	−1.35	0.41	0.83	1.89	0.41	0.44	−1.23	−0.65	−1.46	−1.58	0.88
	Ten B/M portfolios											
$\overline{I_{it}/K_{it}}$	−42.06	−21.23	−12.22	−4.31	4.69	10.98	17.07	21.19	30.53	48.17	90.23	21.25
$\overline{q_{it+1}/q_{it}}$	−1.92	−0.88	−0.26	1.56	2.11	2.77	2.91	1.34	−0.96	−4.06	−2.14	1.87
$\overline{Y_{it+1}/K_{it+1}}$	0.16	0.76	1.26	2.93	0.92	0.14	−1.63	−2.63	−2.65	−6.33	−6.49	1.94
$\overline{w}_{it}$	−6.00	−5.20	−1.68	1.66	2.19	2.63	3.37	4.03	3.34	5.58	11.58	3.57
	Ten CI portfolios											
$\overline{I_{it}/K_{it}}$	2.86	−0.40	1.03	2.06	3.50	3.08	0.07	−0.89	−3.01	−5.67	−8.53	2.26
$\overline{q_{it+1}/q_{it}}$	0.73	−1.50	0.10	1.39	2.97	3.41	0.82	−0.29	−2.01	−3.87	−4.60	1.71
$\overline{Y_{it+1}/K_{it+1}}$	0.57	−0.25	0.17	0.54	−0.44	0.40	−0.15	0.67	0.69	0.09	−0.48	0.40
$\overline{w}_{it}$	1.80	−2.32	−0.93	0.36	2.61	3.26	0.62	−0.02	−0.71	−0.91	−2.71	1.35

Table A4 : Correlations

For each testing portfolio we report time series correlations of stock returns (contemporaneous, r^S_{it+1}, and one-period-lagged, r^S_{it}) with levered investment returns, r^{Iw}_{it+1}, and with investment growth, I_{it+1}/I_{it}. $\rho(\cdot,\cdot)$ denotes the correlation between the two series in the parentheses. We report the significance of a given correlation with a star system: 10%, 5%, and 1% significance levels are indicated by one, two, and three stars, respectively. In the last column, denoted All, we report the correlations and their significance by pooling all the observations for a given set of ten testing portfolios (SUE, B/M, or CI). The levered investment returns are constructed using the parameters in Panel A of Table 2 in the manuscript.

	Low	2	3	4	5	6	7	8	9	High	All
					Panel A: Ten SUE portfolios						
$\rho\left(r^S_{it+1}, r^{Iw}_{it+1}\right)$	−0.28	−0.19	−0.19	−0.15	−0.21	−0.26	−0.23	−0.22	−0.18	−0.26	−0.11**
$\rho\left(r^S_{it}, r^{Iw}_{it+1}\right)$	0.22	0.15	0.11	0.12	0.01	0.13	0.21	0.11	0.03	0.14	0.19***
$\rho\left(r^S_{it+1}, I_{it+1}/I_{it}\right)$	−0.29	−0.13	−0.14	−0.14	−0.24	−0.16	−0.14	−0.19	−0.15	−0.23	−0.08
$\rho\left(r^S_{it}, I_{it+1}/I_{it}\right)$	0.18	0.11	0.07	0.04	0.01	0.06	0.13	0.08	−0.03	−0.00	0.14**
					Panel B: Ten B/M portfolios						
$\rho\left(r^S_{it+1}, r^{Iw}_{it+1}\right)$	−0.23	−0.17	−0.35***	−0.23	−0.17	−0.12	−0.24	−0.12	−0.13	−0.05	−0.12**
$\rho\left(r^S_{it}, r^{Iw}_{it+1}\right)$	0.06	0.04	0.35***	0.25	0.23	0.20	0.24	0.08	0.23	0.33***	0.22***
$\rho\left(r^S_{it+1}, I_{it+1}/I_{it}\right)$	−0.14	−0.19	−0.26*	−0.14	−0.06	−0.07	−0.28*	0.00	−0.16	−0.13	−0.15***
$\rho\left(r^S_{it}, I_{it+1}/I_{it}\right)$	0.12	0.12	0.31*	0.20	0.17	0.04	0.12	−0.04	0.26	0.29*	0.14***
					Panel C: Ten CI portfolios						
$\rho\left(r^S_{it+1}, r^{Iw}_{it+1}\right)$	0.22	0.00	−0.30*	0.07	−0.34**	−0.37**	−0.31*	−0.30*	−0.31*	−0.30*	−0.06
$\rho\left(r^S_{it}, r^{Iw}_{it+1}\right)$	0.44***	0.13	0.19	−0.19	0.16	0.26	0.27*	0.26	0.04	0.30*	0.21***
$\rho\left(r^S_{it+1}, I_{it+1}/I_{it}\right)$	0.28*	−0.07	−0.26	0.05	−0.33**	−0.34**	−0.30*	−0.30*	−0.25	−0.12	−0.04
$\rho\left(r^S_{it}, I_{it+1}/I_{it}\right)$	0.20	0.23	0.10	−0.11	0.10	0.21	0.14	0.25	0.03	0.26	0.16***

Table A5 : Parameter Estimates and Tests of Overidentification from the Second-Stage GMM

Estimates and tests are from the second-stage GMM estimation with two-step weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	8.66	23.17	1.12	a	29.37	11.20	16.13
[ste]	[1.20]	[16.49]	[0.31]	[ste]	[4.17]	[1.10]	[2.06]
α	0.30	0.54	0.20	α	0.61	0.34	0.36
[ste]	[0.03]	[0.20]	[0.01]	[ste]	[0.06]	[0.01]	[0.03]
χ^2	4.45	293.31	7.39	$\chi^2_{(2)}$	6.85	7.53	7.46
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.82	0.00	0.50	$p(2)$	0.55	0.48	0.49
a.a.p.e.	2.87	2.42	1.47	a.a.p.e.(2)	0.02	0.04	0.02
				$\chi^2_{(1)}$	6.98	6.60	7.19
				d.f.(1)	8	8	8
				$p(1)$	0.54	0.58	0.52
				a.a.p.e.(1)	3.46	2.59	2.21
				χ^2	7.27	8.25	8.50
				d.f.	18	18	18
				p	0.99	0.98	0.97

Table A6 : Euler Equation Errors from the Second-Stage GMM

Euler equation errors and t-statistics are from the second-stage GMM estimation with the two-step weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, as well as their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	3.57	1.33	2.92	3.55	4.40	3.28	3.39	1.45	2.18	2.59	−0.98
$[t]$	[1.35]	[0.70]	[1.21]	[1.46]	[1.66]	[1.31]	[1.55]	[0.68]	[1.34]	[1.71]	[−0.51]
	Ten B/M portfolios										
e^q_i	−4.64	−4.09	−1.96	1.90	1.44	2.11	1.48	0.36	−1.48	−4.75	−0.12
$[t]$	[−1.38]	[−0.98]	[−0.92]	[0.70]	[0.61]	[0.99]	[0.65]	[0.07]	[−0.48]	[−0.75]	[−0.02]
	Ten CI portfolios										
e^q_i	−0.33	−2.09	0.15	1.56	3.33	4.03	1.68	1.33	−0.02	−0.15	0.17
$[t]$	[−0.14]	[−0.76]	[0.06]	[0.67]	[1.21]	[1.60]	[1.06]	[0.85]	[−0.01]	[−0.07]	[0.12]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.05	−0.04	0.01	−0.01	0.02	0.03	0.04	0.01	0.02	0.03	0.08
$[t]$	[−1.33]	[−1.34]	[0.25]	[−0.28]	[0.92]	[1.13]	[1.11]	[0.37]	[0.42]	[0.84]	[2.18]
e^q_i	−6.98	−6.49	−2.10	−1.61	2.61	1.81	2.28	1.50	3.77	5.41	12.39
$[t]$	[−1.47]	[−1.74]	[−0.62]	[−0.45]	[0.72]	[0.47]	[0.71]	[0.51]	[0.99]	[1.41]	[2.45]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.08	0.06	0.02	0.02	0.02	0.01	−0.01	−0.02	−0.10	−0.20
$[t]$	[2.24]	[1.70]	[1.58]	[0.41]	[0.35]	[0.52]	[0.22]	[−0.20]	[−0.57]	[−1.43]	[−2.35]
e^q_i	−6.49	−3.84	−2.11	−0.02	1.73	2.63	3.58	3.15	1.92	−0.44	6.04
$[t]$	[−1.77]	[−1.19]	[−0.71]	[−0.01]	[0.54]	[0.90]	[1.40]	[0.83]	[0.62]	[−0.07]	[1.03]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.01	0.00	0.02	0.01	0.03	0.02	0.02	0.02	−0.02	−0.06	−0.07
$[t]$	[0.57]	[−0.13]	[0.76]	[0.37]	[0.99]	[0.59]	[0.50]	[0.77]	[−0.64]	[−1.17]	[−1.45]
e^q_i	1.14	−2.63	−0.22	1.76	3.37	3.39	1.02	0.18	−2.92	−5.42	−6.56
$[t]$	[0.22]	[−0.76]	[−0.06]	[0.45]	[0.95]	[1.10]	[0.46]	[0.09]	[−0.81]	[−1.34]	[−1.56]

Table A7 : Parameter Estimates and Tests of Overidentification, the Market Value of Debt per the Bernanke and Campbell (1988) Algorithm

We measure the market value of debt, B_{it}, per the Bernanke and Campbell (1988) algorithm. Estimates and tests are from the first-stage GMM estimation with an identity weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the first-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	7.91	23.31	1.03	a	30.99	10.27	17.93
[ste]	[1.85]	[30.52]	[0.30]	[ste]	[18.48]	[4.13]	[6.90]
α	0.33	0.51	0.21	α	0.64	0.32	0.38
[ste]	[0.03]	[0.37]	[0.02]	[ste]	[0.30]	[0.06]	[0.09]
χ^2	4.85	5.66	6.81	$\chi^2_{(2)}$	5.58	6.50	6.38
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.77	0.69	0.56	$p(2)$	0.70	0.59	0.60
a.a.p.e.	0.74	2.49	1.42	a.a.p.e.(2)	0.02	0.05	0.02
				$\chi^2_{(1)}$	5.68	5.85	6.32
				d.f.(1)	8	8	8
				$p(1)$	0.68	0.66	0.61
				a.a.p.e.(1)	3.50	3.30	2.03
				χ^2	5.77	7.07	6.91
				d.f.	18	18	18
				p	1.00	0.99	0.99

Table A8 : Euler Equation Errors, the Market Value of Debt per the Bernanke and Campbell (1988) Algorithm

We measure the market value of debt, B_{it}, per the Bernanke and Campbell (1988) algorithm. Euler equation errors and t-statistics are from the first-stage GMM estimation with an identity weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, as well as their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.30	−1.81	−0.06	0.80	1.70	0.43	0.52	−1.24	−0.51	−0.08	−0.38
[t]	[0.78]	[−1.85]	[−0.10]	[1.12]	[1.68]	[0.61]	[1.19]	[−1.21]	[−0.74]	[−0.08]	[−0.46]
	Ten B/M portfolios										
e^q_i	−4.13	−3.00	−0.59	2.54	2.50	3.47	1.88	2.32	1.00	−3.47	0.67
[t]	[−1.81]	[−1.35]	[−0.44]	[1.25]	[1.52]	[1.24]	[1.10]	[0.83]	[0.50]	[−1.43]	[0.37]
	Ten CI portfolios										
e^q_i	−0.57	−2.88	−0.57	0.74	2.71	3.22	1.12	0.14	−0.72	−1.55	−0.99
[t]	[−0.39]	[−2.11]	[−0.83]	[0.83]	[1.98]	[2.21]	[0.86]	[0.21]	[−0.75]	[−1.63]	[−0.92]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.04	−0.03	0.01	−0.01	0.01	0.03	0.04	0.01	0.02	0.03	0.06
[t]	[−1.84]	[−1.79]	[0.84]	[−0.57]	[0.53]	[1.54]	[1.71]	[0.63]	[0.92]	[1.34]	[1.75]
e^q_i	−6.67	−6.76	−2.46	−1.63	2.60	1.74	2.27	1.56	3.71	5.56	12.23
[t]	[−2.24]	[−2.30]	[−1.67]	[−1.10]	[1.99]	[1.37]	[1.83]	[0.84]	[1.77]	[2.05]	[2.29]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.07	0.04	0.03	0.02	0.05	0.02	0.00	−0.13	−0.23
[t]	[2.36]	[2.00]	[1.96]	[1.24]	[0.83]	[0.99]	[1.41]	[0.64]	[−0.03]	[−1.87]	[−2.18]
e^q_i	−6.18	−3.14	−1.48	0.95	2.06	3.62	4.09	4.32	4.11	−3.02	3.16
[t]	[−1.69]	[−1.31]	[−0.74]	[0.47]	[1.20]	[1.72]	[1.73]	[1.69]	[1.70]	[−0.52]	[0.40]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.02	−0.01	0.02	0.01	0.03	0.01	0.02	0.01	−0.02	−0.05	−0.07
[t]	[0.81]	[−0.62]	[1.07]	[0.42]	[1.25]	[0.62]	[0.84]	[0.58]	[−1.13]	[−1.75]	[−1.45]
e^q_i	−0.02	−2.50	0.05	1.93	3.46	3.69	1.51	0.05	−2.49	−4.63	−4.60
[t]	[−0.01]	[−1.53]	[0.04]	[1.09]	[2.10]	[1.81]	[1.12]	[0.04]	[−1.46]	[−1.95]	[−1.28]

Table A9 : Parameter Estimates and Tests of Overidentification, Value-Weighted Returns

We value-weight all portfolio stock returns, r^S_{it}, and corporate bond returns, r^B_{it}. Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	0.50	8.11	1.18	a	28.42	8.33	13.05
[ste]	[0.41]	[5.44]	[0.40]	[ste]	[10.88]	[2.06]	[3.41]
α	0.18	0.27	0.16	α	0.44	0.25	0.25
[ste]	[0.03]	[0.06]	[0.02]	[ste]	[0.16]	[0.04]	[0.05]
χ^2	5.36	6.16	5.85	$\chi^2_{(2)}$	3.59	4.69	6.49
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.72	0.63	0.66	$p(2)$	0.89	0.79	0.59
a.a.p.e.	1.03	1.37	1.11	a.a.p.e.(2)	0.02	0.03	0.03
				$\chi^2_{(1)}$	3.30	3.11	3.44
				d.f.(1)	8	8	8
				$p(1)$	0.91	0.93	0.90
				a.a.p.e.(1)	1.30	1.69	2.23
				χ^2	3.88	6.39	6.01
				d.f.	18	18	18
				p	1.00	0.99	1.00

Table A10 : Euler Equation Errors, Value-Weighted Returns

We value-weight all portfolio stock returns, r_{it}^S, and corporate bond returns, r_{it}^B. Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. In Panel A the moment conditions are $E\left[r_{it+1}^S - r_{it+1}^{Iw}\right] = 0$. The mean errors are defined as $e_i^q \equiv E_T\left[r_{it+1}^S - r_{it+1}^{Iw}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r_{it+1}^S - r_{it+1}^{Iw}\right] = 0$ and $E\left[\left(r_{it+1}^S - E\left[r_{it+1}^S\right]\right)^2 - \left(r_{it+1}^{Iw} - E\left[r_{it+1}^{Iw}\right]\right)^2\right] = 0$. The variance errors are defined as $e_i^{\sigma^2} \equiv E_T\left[\left(r_{it+1}^S - E_T\left[r_{it+1}^S\right]\right)^2 - \left(r_{it+1}^{Iw} - E_T\left[r_{it+1}^{Iw}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, as well as their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e_i^q	0.88	−1.29	0.38	−0.34	0.32	−0.64	1.67	−1.52	1.87	−1.35	−2.23
$[t]$	[1.66]	[−1.38]	[0.57]	[−0.38]	[0.35]	[−0.60]	[1.84]	[−1.75]	[1.97]	[−1.27]	[−1.91]
	Ten B/M portfolios										
e_i^q	−0.77	−1.41	−0.96	0.39	0.09	1.88	3.21	1.39	0.71	−2.86	−2.09
$[t]$	[−0.42]	[−0.94]	[−0.97]	[0.31]	[0.07]	[0.90]	[2.01]	[0.63]	[0.38]	[−1.65]	[−1.27]
	Ten CI portfolios										
e_i^q	−1.45	−2.00	1.43	1.50	1.23	2.01	0.02	0.01	−0.41	−1.07	0.38
$[t]$	[−0.70]	[−1.64]	[1.01]	[1.04]	[1.04]	[1.04]	[0.02]	[0.01]	[−0.32]	[−0.80]	[0.27]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e_i^{\sigma^2}$	−0.03	−0.02	0.01	−0.01	0.01	0.02	0.03	0.00	0.01	0.04	0.07
$[t]$	[−1.39]	[−1.26]	[0.80]	[−0.87]	[0.53]	[0.80]	[1.84]	[−0.50]	[0.51]	[1.89]	[1.86]
e_i^q	−0.64	−2.78	−0.18	−1.33	0.70	0.00	2.18	−1.55	2.49	1.09	1.74
$[t]$	[−0.47]	[−1.65]	[−0.21]	[−0.80]	[0.57]	[0.00]	[1.76]	[−1.13]	[1.52]	[0.66]	[0.89]
	Ten B/M portfolios										
$e_i^{\sigma^2}$	0.06	0.05	0.05	0.02	0.02	0.02	0.01	−0.01	−0.02	−0.08	−0.14
$[t]$	[2.11]	[2.14]	[2.26]	[0.93]	[0.95]	[1.09]	[0.66]	[−0.52]	[−1.38]	[−1.93]	[−2.13]
e_i^q	−1.81	−1.36	−1.10	−1.17	0.02	1.58	3.67	2.02	1.80	−2.34	−0.53
$[t]$	[−0.84]	[−0.79]	[−0.77]	[−0.65]	[0.01]	[0.81]	[1.94]	[1.05]	[0.92]	[−1.05]	[−0.18]
	Ten CI portfolios										
$e_i^{\sigma^2}$	−0.01	0.00	0.04	0.03	0.03	0.03	0.02	0.02	−0.03	−0.06	−0.05
$[t]$	[−0.32]	[0.09]	[1.72]	[1.12]	[1.32]	[1.76]	[1.19]	[1.26]	[−1.80]	[−1.73]	[−1.54]
e_i^q	1.98	−0.91	2.32	2.79	1.94	1.77	−0.32	−0.96	−2.96	−6.33	−8.31
$[t]$	[0.60]	[−0.55]	[1.17]	[1.45]	[1.40]	[0.86]	[−0.20]	[−0.52]	[−1.45]	[−2.13]	[−2.11]

Table A11 : Parameter Estimates and Tests of Overidentification, Window Length of One in the Standard Bartlett Kernel

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We use a standard Bartlett kernel with a window length of one to calculate the optimal weighting matrix when conducting inferences. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	7.68	22.34	0.97	a	28.88	11.48	16.23
[ste]	[2.35]	[25.74]	[0.42]	[ste]	[17.52]	[4.30]	[6.07]
α	0.32	0.50	0.21	α	0.61	0.35	0.36
[ste]	[0.04]	[0.29]	[0.02]	[ste]	[0.27]	[0.07]	[0.09]
χ^2	6.57	7.65	13.94	$\chi^2_{(2)}$	9.18	14.20	13.08
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.58	0.47	0.08	$p(2)$	0.33	0.08	0.11
a.a.p.e.	0.74	2.32	1.51	a.a.p.e.(2)	0.03	0.04	0.02
				$\chi^2_{(1)}$	7.50	9.09	6.88
				d.f.(1)	8	8	8
				$p(1)$	0.48	0.33	0.55
				a.a.p.e.(1)	3.45	2.58	2.22
				χ^2	10.55	15.52	14.03
				d.f.	18	18	18
				p	0.91	0.63	0.73

Table A12 : Euler Equation Errors, Window Length of One in the Standard Bartlett Kernel

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We use a standard Bartlett kernel with a window length of one to calculate the optimal weighting matrix when conducting inferences. In Panel A the moments are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.26	−1.72	−0.05	0.72	1.66	0.51	0.61	−1.25	−0.50	−0.15	−0.40
$[t]$	[0.56]	[−2.14]	[−0.07]	[0.99]	[1.68]	[0.58]	[0.73]	[−1.39]	[−0.52]	[−0.14]	[−0.44]
	Ten B/M portfolios										
e^q_i	−3.94	−3.20	−1.02	2.74	2.35	3.07	2.51	1.62	0.05	−2.73	1.21
$[t]$	[−1.87]	[−1.72]	[−0.70]	[1.75]	[1.45]	[1.30]	[1.22]	[0.56]	[0.03]	[−1.34]	[0.75]
	Ten CI portfolios										
e^q_i	−0.97	−2.71	−0.50	0.93	2.72	3.37	0.94	0.46	−1.02	−1.45	−0.49
$[t]$	[−0.62]	[−2.58]	[−0.60]	[1.01]	[2.20]	[2.94]	[0.99]	[0.56]	[−0.83]	[−1.42]	[−0.46]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.04	−0.04	0.01	−0.01	0.02	0.03	0.04	0.01	0.02	0.03	0.08
$[t]$	[−2.04]	[−2.00]	[0.60]	[−0.39]	[1.18]	[1.49]	[1.84]	[0.66]	[0.79]	[1.66]	[2.13]
e^q_i	−6.99	−6.50	−2.12	−1.62	2.60	1.79	2.27	1.48	3.75	5.38	12.37
$[t]$	[−2.04]	[−2.54]	[−1.44]	[−0.75]	[1.62]	[0.86]	[1.29]	[0.77]	[1.56]	[1.94]	[2.40]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.06	0.01	0.01	0.02	0.01	−0.01	−0.02	−0.10	−0.20
$[t]$	[3.45]	[2.84]	[2.58]	[0.61]	[0.59]	[0.88]	[0.27]	[−0.33]	[−1.00]	[−2.58]	[−3.40]
e^q_i	−6.46	−3.83	−2.11	−0.04	1.71	2.60	3.54	3.11	1.85	−0.58	5.89
$[t]$	[−2.14]	[−1.62]	[−0.93]	[−0.02]	[0.74]	[1.13]	[1.49]	[1.19]	[0.73]	[−0.13]	[1.00]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.01	0.00	0.02	0.01	0.03	0.02	0.02	0.02	−0.02	−0.06	−0.07
$[t]$	[0.34]	[−0.18]	[1.26]	[0.56]	[1.64]	[1.22]	[0.84]	[1.01]	[−0.98]	[−2.01]	[−1.41]
e^q_i	1.29	−2.51	−0.11	1.86	3.47	3.48	1.12	0.28	−2.82	−5.32	−6.60
$[t]$	[0.42]	[−1.12]	[−0.05]	[1.04]	[1.93]	[1.91]	[0.75]	[0.16]	[−1.11]	[−1.49]	[−1.31]

Table A13 : Parameter Estimates and Tests of Overidentification, Window Length of Ten in the Standard Bartlett Kernel

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We use a standard Bartlett kernel with a window length of ten to calculate the optimal weighting matrix when conducting inferences. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	7.68	22.34	0.97	a	28.88	11.48	16.23
[ste]	[1.51]	[24.41]	[0.30]	[ste]	[11.54]	[4.24]	[4.22]
α	0.32	0.50	0.21	α	0.61	0.35	0.36
[ste]	[0.03]	[0.29]	[0.01]	[ste]	[0.20]	[0.06]	[0.06]
χ^2	0.70	4.18	3.99	$\chi^2_{(2)}$	3.08	3.44	3.38
d.f.	8	8	8	d.f.(2)	8	8	8
p	1.00	0.84	0.86	$p(2)$	0.93	0.90	0.91
a.a.p.e.	0.74	2.32	1.51	a.a.p.e.(2)	0.03	0.04	0.02
				$\chi^2_{(1)}$	3.23	3.16	2.83
				d.f.(1)	8	8	8
				$p(1)$	0.92	0.92	0.95
				a.a.p.e.(1)	3.45	2.58	2.22
				χ^2	2.79	3.42	3.96
				d.f.	18	18	18
				p	1.00	1.00	1.00

Table A14 : Euler Equation Errors, Window Length of Ten in the Standard Bartlett Kernel

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We use a standard Bartlett kernel with a window length of ten to calculate the optimal weighting matrix when conducting inferences. In Panel A the moments are $E\left[r_{it+1}^S - r_{it+1}^{Iw}\right] = 0$. The mean errors are defined as $e_i^q \equiv E_T\left[r_{it+1}^S - r_{it+1}^{Iw}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r_{it+1}^S - r_{it+1}^{Iw}\right] = 0$ and $E\left[\left(r_{it+1}^S - E\left[r_{it+1}^S\right]\right)^2 - \left(r_{it+1}^{Iw} - E\left[r_{it+1}^{Iw}\right]\right)^2\right] = 0$. The variance errors are defined as $e_i^{\sigma^2} \equiv E_T\left[\left(r_{it+1}^S - E_T\left[r_{it+1}^S\right]\right)^2 - \left(r_{it+1}^{Iw} - E_T\left[r_{it+1}^{Iw}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e_i^q	0.26	−1.72	−0.05	0.72	1.66	0.51	0.61	−1.25	−0.50	−0.15	−0.40
[t]	[0.82]	[−1.53]	[−0.12]	[0.96]	[1.43]	[0.86]	[0.90]	[−1.07]	[−0.59]	[−0.20]	[−0.49]
	Ten B/M portfolios										
e_i^q	−3.94	−3.20	−1.02	2.74	2.35	3.07	2.51	1.62	0.05	−2.73	1.21
[t]	[−1.51]	[−1.39]	[−0.78]	[1.15]	[1.34]	[1.16]	[1.28]	[0.59]	[0.03]	[−1.20]	[1.01]
	Ten CI portfolios										
e_i^q	−0.97	−2.71	−0.50	0.93	2.72	3.37	0.94	0.46	−1.02	−1.45	−0.49
[t]	[−0.50]	[−1.60]	[−0.59]	[1.04]	[1.58]	[1.69]	[0.76]	[0.90]	[−1.01]	[−1.10]	[−0.46]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e_i^{\sigma^2}$	−0.04	−0.04	0.01	−0.01	0.02	0.03	0.04	0.01	0.02	0.03	0.08
[t]	[−1.65]	[−1.57]	[0.88]	[−0.36]	[0.85]	[1.41]	[1.43]	[0.95]	[0.69]	[1.34]	[1.52]
e_i^q	−6.99	−6.50	−2.12	−1.62	2.60	1.79	2.27	1.48	3.75	5.38	12.37
[t]	[−1.78]	[−1.76]	[−1.25]	[−1.12]	[1.66]	[1.25]	[1.73]	[0.87]	[1.53]	[1.64]	[1.80]
	Ten B/M portfolios										
$e_i^{\sigma^2}$	0.10	0.07	0.06	0.01	0.01	0.02	0.01	−0.01	−0.02	−0.10	−0.20
[t]	[1.83]	[1.83]	[1.73]	[0.81]	[0.47]	[0.90]	[0.31]	[−0.47]	[−1.36]	[−1.69]	[−1.83]
e_i^q	−6.46	−3.83	−2.11	−0.04	1.71	2.60	3.54	3.11	1.85	−0.58	5.89
[t]	[−1.55]	[−1.58]	[−1.06]	[−0.02]	[0.91]	[1.37]	[1.65]	[1.40]	[1.27]	[−0.14]	[0.98]
	Ten CI portfolios										
$e_i^{\sigma^2}$	0.01	0.00	0.02	0.01	0.03	0.02	0.02	0.02	−0.02	−0.06	−0.07
[t]	[0.34]	[−0.15]	[1.09]	[0.51]	[1.47]	[1.04]	[0.67]	[1.06]	[−1.46]	[−1.42]	[−1.11]
e_i^q	1.29	−2.51	−0.11	1.86	3.47	3.48	1.12	0.28	−2.82	−5.32	−6.60
[t]	[0.63]	[−1.57]	[−0.10]	[1.36]	[1.66]	[1.67]	[0.97]	[0.28]	[−1.63]	[−1.69]	[−1.97]

Table A15 : Parameter Estimates and Tests of Overidentification, An Alternative Measure of Capital

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure the capital stock, K_{it}, as net property, plant, and equipment (Compustat annual item 7). In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	3.68	8.21	0.41	a	13.32	5.58	8.10
[ste]	[0.92]	[7.88]	[0.16]	[ste]	[7.05]	[2.27]	[2.48]
α	0.20	0.26	0.14	α	0.34	0.22	0.23
[ste]	[0.02]	[0.10]	[0.01]	[ste]	[0.13]	[0.04]	[0.04]
χ^2	3.94	6.33	6.20	$\chi^2_{(2)}$	4.99	6.25	5.05
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.86	0.61	0.63	$p(2)$	0.76	0.62	0.75
a.a.p.e.	0.67	2.48	1.46	a.a.p.e.(2)	0.03	0.04	0.02
				$\chi^2_{(1)}$	5.24	5.11	6.00
				d.f.(1)	8	8	8
				$p(1)$	0.73	0.75	0.65
				a.a.p.e.(1)	3.35	3.08	2.45
				χ^2	6.28	6.80	6.09
				d.f.	18	18	18
				p	1.00	0.99	1.00

Table A16 : Euler Equation Errors, An Alternative Measure of Capital

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure the capital stock, K_{it}, as net property, plant, and equipment (Compustat annual item 7). In Panel A the moments are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.09	−1.47	0.24	0.52	1.50	0.61	0.41	−1.19	−0.50	−0.18	−0.27
$[t]$	[0.21]	[−1.63]	[0.30]	[0.72]	[1.50]	[0.79]	[0.65]	[−1.07]	[−0.55]	[−0.18]	[−0.28]
	Ten B/M portfolios										
e^q_i	−3.99	−3.24	−0.82	2.81	2.55	3.47	2.72	1.79	−0.58	−2.85	1.14
$[t]$	[−1.92]	[−1.64]	[−0.54]	[1.53]	[1.52]	[1.25]	[1.38]	[0.64]	[−0.32]	[−1.27]	[0.59]
	Ten CI portfolios										
e^q_i	0.81	−3.39	−1.28	0.04	2.53	3.54	0.83	0.14	−1.25	−0.80	−1.60
$[t]$	[0.38]	[−2.02]	[−1.46]	[0.04]	[1.39]	[1.85]	[0.55]	[0.23]	[−1.00]	[−0.59]	[−1.13]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.05	−0.03	0.00	0.01	0.01	0.03	0.04	0.03	0.03	0.02	0.08
$[t]$	[−1.80]	[−1.82]	[−0.17]	[0.34]	[0.86]	[1.61]	[1.53]	[1.79]	[1.46]	[0.91]	[1.56]
e^q_i	−6.95	−6.60	−2.16	−1.22	2.81	1.53	2.10	1.48	3.91	4.77	11.72
$[t]$	[−2.25]	[−2.27]	[−1.49]	[−0.89]	[1.99]	[1.14]	[1.67]	[0.82]	[1.79]	[1.97]	[2.57]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.06	0.00	0.00	0.02	0.03	−0.02	−0.01	−0.11	−0.21
$[t]$	[2.29]	[1.93]	[2.07]	[0.11]	[0.11]	[0.87]	[0.91]	[−0.57]	[−0.74]	[−2.01]	[−2.37]
e^q_i	−6.90	−4.69	−3.28	−0.56	2.05	2.84	3.53	3.77	2.91	0.26	7.16
$[t]$	[−2.03]	[−1.92]	[−1.41]	[−0.29]	[0.99]	[1.27]	[1.80]	[1.66]	[1.57]	[0.06]	[1.17]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.05	−0.01	0.01	−0.01	−0.01	−0.01	0.01	0.02	−0.02	−0.04	−0.09
$[t]$	[1.63]	[−0.73]	[0.37]	[−0.28]	[−0.20]	[−0.35]	[0.65]	[1.33]	[−1.17]	[−1.46]	[−1.74]
e^q_i	3.37	−2.30	−0.49	1.40	3.64	3.10	1.15	−0.47	−3.65	−4.92	−8.29
$[t]$	[1.21]	[−1.43]	[−0.36]	[0.83]	[1.71]	[1.62]	[0.82]	[−0.36]	[−1.85]	[−1.99]	[−2.24]

Table A17 : Parameter Estimates and Tests of Overidentification, An Alternative Measure of Investment

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure investment, I_{it}, as capital expenditures (Compustat annual item 128). In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	8.50	47.10	1.01	a	27.42	11.50	16.94
[ste]	[1.84]	[93.66]	[0.29]	[ste]	[16.54]	[5.10]	[6.67]
α	0.34	0.84	0.21	α	0.60	0.35	0.38
[ste]	[0.04]	[1.19]	[0.02]	[ste]	[0.28]	[0.08]	[0.09]
χ^2	4.86	5.78	6.56	$\chi^2_{(2)}$	4.56	6.09	6.40
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.77	0.67	0.59	$p(2)$	0.80	0.64	0.60
a.a.p.e.	0.76	1.99	1.50	a.a.p.e.(2)	0.02	0.04	0.02
				$\chi^2_{(1)}$	5.22	4.48	4.74
				d.f.(1)	8	8	8
				$p(1)$	0.73	0.81	0.79
				a.a.p.e.(1)	3.39	2.50	2.16
				χ^2	5.12	6.22	22.61
				d.f.	18	18	18
				p	1.00	1.00	0.21

Table A18 : Euler Equation Errors, An Alternative Measure of Investment

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure investment, I_{it}, as capital expenditures (Compustat annual item 128). In Panel A the moments are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.18	−1.66	−0.04	0.49	1.72	0.79	0.65	−1.57	−0.40	−0.10	−0.28
$[t]$	[0.46]	[−1.87]	[−0.04]	[0.76]	[1.74]	[1.04]	[1.22]	[−1.33]	[−0.49]	[−0.11]	[−0.30]
	Ten B/M portfolios										
e^q_i	−3.06	−2.60	0.05	2.06	1.29	2.22	2.72	2.47	−0.47	−2.95	0.12
$[t]$	[−1.64]	[−1.34]	[0.04]	[1.25]	[0.66]	[0.73]	[1.29]	[0.93]	[−0.21]	[−1.19]	[0.07]
	Ten CI portfolios										
e^q_i	−0.91	−2.71	−0.59	0.87	2.75	3.35	0.94	0.44	−0.93	−1.46	−0.55
$[t]$	[−0.48]	[−1.95]	[−0.72]	[0.90]	[1.77]	[2.21]	[0.76]	[0.74]	[−0.84]	[−1.24]	[−0.45]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.04	−0.04	0.01	0.00	0.02	0.02	0.02	0.02	0.01	0.04	0.08
$[t]$	[−1.86]	[−1.94]	[0.79]	[−0.15]	[0.96]	[1.05]	[1.04]	[1.13]	[0.25]	[1.58]	[1.76]
e^q_i	−7.09	−6.40	−1.91	−1.56	2.61	1.75	2.13	1.72	3.45	5.28	12.37
$[t]$	[−2.23]	[−2.26]	[−1.33]	[−1.03]	[1.91]	[1.12]	[1.68]	[1.00]	[1.66]	[2.01]	[2.50]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.06	0.01	0.01	0.02	0.01	−0.01	−0.02	−0.10	−0.20
$[t]$	[1.83]	[1.83]	[1.73]	[0.81]	[0.47]	[0.90]	[0.31]	[−0.47]	[−1.36]	[−1.69]	[−1.83]
e^q_i	−6.46	−3.83	−2.11	−0.04	1.71	2.60	3.54	3.11	1.85	−0.58	5.89
$[t]$	[−1.55]	[−1.58]	[−1.06]	[−0.02]	[0.91]	[1.37]	[1.65]	[1.40]	[1.27]	[−0.14]	[0.98]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.01	0.01	0.03	0.02	0.02	0.01	0.01	0.02	−0.03	−0.06	−0.07
$[t]$	[0.32]	[0.63]	[1.49]	[0.79]	[0.79]	[0.50]	[0.61]	[1.16]	[−1.94]	[−1.83]	[−1.44]
e^q_i	1.69	−2.09	0.02	1.96	3.22	3.17	0.96	0.10	−3.13	−5.28	−6.98
$[t]$	[0.62]	[−1.49]	[0.02]	[1.23]	[1.85]	[1.73]	[0.77]	[0.09]	[−1.63]	[−2.00]	[−2.00]

Table A19 : Parameter Estimates and Tests of Overidentification, Time-Invariant Tax Rates

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure the corporate tax rate, τ_{t+1}, as its sample mean of 42.3% from 1963 to 2005. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	3.52	10.31	0.44	a	12.44	5.17	7.09
[ste]	[0.80]	[11.76]	[0.12]	[ste]	[6.95]	[2.13]	[2.40]
α	0.29	0.44	0.17	α	0.52	0.30	0.31
[ste]	[0.03]	[0.29]	[0.02]	[ste]	[0.22]	[0.06]	[0.06]
χ^2	4.32	5.79	6.57	$\chi^2_{(2)}$	5.12	6.22	6.05
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.83	0.67	0.58	$p(2)$	0.75	0.62	0.64
a.a.p.e.	0.75	2.27	1.59	a.a.p.e.(2)	0.02	0.04	0.02
				$\chi^2_{(1)}$	5.33	4.41	4.91
				d.f.(1)	8	8	8
				$p(1)$	0.72	0.82	0.77
				a.a.p.e.(1)	3.46	2.63	2.26
				χ^2	97.96	6.17	6.45
				d.f.	18	18	18
				p	0.00	1.00	0.99

Table A20 : Euler Equation Errors, Time-Invariant Tax Rates

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. We measure the corporate tax rate, τ_{t+1}, as its sample mean of 42.3% from 1963 to 2005. In Panel A the moments are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.31	−1.75	−0.12	0.72	1.64	0.53	0.61	−1.24	−0.52	−0.09	−0.40
$[t]$	[0.76]	[−1.79]	[−0.15]	[0.96]	[1.66]	[0.74]	[1.08]	[−1.13]	[−0.63]	[−0.09]	[−0.40]
	Ten B/M portfolios										
e^q_i	−3.90	−3.32	−0.97	2.64	2.27	2.90	2.41	1.75	−0.07	−2.50	1.40
$[t]$	[−1.73]	[−1.42]	[−0.63]	[1.33]	[1.36]	[1.04]	[1.25]	[0.64]	[−0.04]	[−1.30]	[0.89]
	Ten CI portfolios										
e^q_i	−1.17	−2.66	−0.48	1.03	2.85	3.55	1.02	0.49	−1.04	−1.58	−0.41
$[t]$	[−0.68]	[−1.98]	[−0.59]	[1.08]	[1.80]	[2.32]	[0.85]	[0.83]	[−0.99]	[−1.47]	[−0.37]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.04	−0.04	0.00	−0.01	0.02	0.03	0.04	0.01	0.02	0.04	0.08
$[t]$	[−1.93]	[−1.91]	[0.36]	[−0.46]	[0.81]	[1.40]	[1.65]	[1.05]	[0.82]	[1.61]	[1.87]
e^q_i	−6.89	−6.53	−2.17	−1.58	2.62	1.85	2.27	1.53	3.77	5.40	12.29
$[t]$	[−2.23]	[−2.28]	[−1.54]	[−1.05]	[1.92]	[1.37]	[1.84]	[0.85]	[1.75]	[2.02]	[2.51]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.07	0.06	0.01	0.01	0.02	0.01	−0.01	−0.03	−0.10	−0.19
$[t]$	[2.36]	[2.18]	[2.08]	[0.52]	[0.51]	[0.80]	[0.36]	[−0.26]	[−1.39]	[−1.88]	[−2.35]
e^q_i	−6.54	−4.11	−2.21	−0.34	1.57	2.48	3.38	3.28	1.93	−0.44	6.10
$[t]$	[−1.90]	[−1.79]	[−1.06]	[−0.18]	[0.89]	[1.24]	[1.71]	[1.52]	[1.16]	[−0.12]	[1.14]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.00	0.00	0.02	0.01	0.04	0.02	0.02	0.02	−0.02	−0.06	−0.06
$[t]$	[0.11]	[0.02]	[0.91]	[0.56]	[1.44]	[1.33]	[0.89]	[1.05]	[−1.36]	[−1.70]	[−1.15]
e^q_i	1.11	−2.42	−0.16	1.99	3.67	3.67	1.23	0.24	−2.82	−5.27	−6.38
$[t]$	[0.45]	[−1.53]	[−0.13]	[1.20]	[2.02]	[1.89]	[0.98]	[0.18]	[−1.56]	[−1.99]	[−2.04]

Table A21 : Parameter Estimates and Tests of Overidentification, Portfolio-Specific Tax Rates

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. To measure the portfolio-specific corporate tax rate, τ^i_{t+1}, we first construct firm-specific tax rates using the trichotomous variable approach of Graham (1996), and then take the value-weighted tax rates across all firms within a given portfolio i. In Panel A the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. a is the adjustment cost parameter and α is capital's share. Their standard errors, denoted ste, are reported in brackets beneath the estimates. χ^2 is the statistic from the second-stage GMM that the moment conditions are jointly zero. d.f. is the degrees of freedom, and p is the p-value associated with the test. a.a.p.e. is the average absolute value of the model errors, $E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets, in annual percent across a given set of testing portfolios. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. $\chi^2_{(2)}$, d.f.(2), and $p(2)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the variance errors, defined as $E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$, are jointly zero. a.a.p.e.(2) is the average magnitude of the variance errors in annual decimals. $\chi^2_{(1)}$, d.f.(1), and $p(1)$ are the statistic, degrees of freedom, and p-value for the χ^2 test that the mean errors, defined in the same way as in Panel A, are jointly zero. a.a.p.e.(1) is the average magnitude of the mean errors in annual percent. χ^2, d.f., and p are the statistic, degrees of freedom, and p-value of the test that both the mean and variance errors are jointly zero.

Panel A: Matching expected returns				Panel B: Matching expected returns and variances			
	SUE	B/M	CI		SUE	B/M	CI
a	8.22	15.48	0.85	a	27.57	10.86	15.57
[ste]	[1.79]	[17.35]	[0.30]	[ste]	[15.50]	[4.50]	[5.39]
α	0.31	0.38	0.19	α	0.54	0.31	0.32
[ste]	[0.03]	[0.19]	[0.02]	[ste]	[0.23]	[0.06]	[0.07]
χ^2	4.56	6.41	6.60	$\chi^2_{(2)}$	5.17	6.11	5.78
d.f.	8	8	8	d.f.(2)	8	8	8
p	0.80	0.60	0.58	$p(2)$	0.74	0.64	0.67
a.a.p.e.	0.73	2.44	1.99	a.a.p.e.(2)	0.03	0.04	0.02
				$\chi^2_{(1)}$	5.25	4.28	5.01
				d.f.(1)	8	8	8
				$p(1)$	0.73	0.83	0.76
				a.a.p.e.(1)	3.58	2.62	2.43
				χ^2	5.35	6.15	7.22
				d.f.	18	18	18
				p	1.00	1.00	0.99

Table A22 : Euler Equation Errors, Portfolio-Specific Tax Rates

Estimates and tests are from the one-stage GMM estimation an identity weighting matrix. To measure the portfolio-specific corporate tax rate, τ^i_{t+1}, we first construct firm-specific tax rates using the trichotomous variable approach of Graham (1996), and then take the value-weighted tax rates across all firms within a given portfolio i. In Panel A the moments are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$. The mean errors are defined as $e^q_i \equiv E_T\left[r^S_{it+1} - r^{Iw}_{it+1}\right]$, in which $E_T[\cdot]$ is the sample mean of the series in brackets. In Panel B the moment conditions are $E\left[r^S_{it+1} - r^{Iw}_{it+1}\right] = 0$ and $E\left[\left(r^S_{it+1} - E\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E\left[r^{Iw}_{it+1}\right]\right)^2\right] = 0$. The variance errors are defined as $e^{\sigma^2}_i \equiv E_T\left[\left(r^S_{it+1} - E_T\left[r^S_{it+1}\right]\right)^2 - \left(r^{Iw}_{it+1} - E_T\left[r^{Iw}_{it+1}\right]\right)^2\right]$. The mean errors are defined as in Panel A. In the last column we report the difference in the mean errors and the difference in the variance errors between the high and low portfolios, and their t-statistics. Mean errors are in annual percent, and variance errors are in annual decimals.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: Euler equation errors from matching expected returns										
	Ten SUE portfolios										
e^q_i	0.25	−1.58	−0.13	0.58	1.46	0.58	0.73	−1.20	−0.71	0.08	−0.17
$[t]$	[0.61]	[−1.76]	[−0.16]	[0.80]	[1.64]	[0.76]	[1.22]	[−1.10]	[−0.82]	[0.08]	[−0.18]
	Ten B/M portfolios										
e^q_i	−4.13	−2.97	−0.77	2.52	2.27	3.26	2.95	2.18	−0.16	−3.13	1.00
$[t]$	[−1.85]	[−1.37]	[−0.58]	[1.30]	[1.43]	[1.26]	[1.54]	[0.82]	[−0.12]	[−1.56]	[0.69]
	Ten CI portfolios										
e^q_i	−1.93	−3.17	−0.15	1.46	3.35	4.09	1.52	1.03	−0.80	−2.38	−0.45
$[t]$	[−0.96]	[−1.94]	[−0.19]	[1.37]	[1.91]	[2.34]	[1.10]	[1.53]	[−0.70]	[−1.76]	[−0.36]
	Panel B: Euler equation errors from matching expected returns and variances										
	Ten SUE portfolios										
$e^{\sigma^2}_i$	−0.05	−0.04	0.01	−0.01	0.02	0.03	0.04	0.01	0.01	0.03	0.08
$[t]$	[−1.96]	[−1.92]	[0.59]	[−0.49]	[1.04]	[1.67]	[1.70]	[0.90]	[0.67]	[1.60]	[1.90]
e^q_i	−7.21	−6.49	−2.21	−1.77	2.47	1.97	2.52	1.72	3.74	5.69	12.89
$[t]$	[−2.25]	[−2.28]	[−1.51]	[−1.14]	[1.90]	[1.40]	[1.94]	[0.96]	[1.74]	[2.04]	[2.50]
	Ten B/M portfolios										
$e^{\sigma^2}_i$	0.10	0.08	0.06	0.02	0.02	0.02	0.01	−0.01	−0.02	−0.11	−0.21
$[t]$	[2.34]	[2.24]	[2.10]	[0.74]	[0.64]	[0.97]	[0.34]	[−0.31]	[−1.08]	[−2.04]	[−2.41]
e^q_i	−6.03	−3.30	−1.45	0.30	1.86	2.95	3.79	3.45	1.42	−1.64	4.38
$[t]$	[−1.80]	[−1.50]	[−0.71]	[0.16]	[0.97]	[1.35]	[1.82]	[1.52]	[0.87]	[−0.40]	[0.79]
	Ten CI portfolios										
$e^{\sigma^2}_i$	0.01	0.00	0.02	0.01	0.03	0.02	0.02	0.02	−0.02	−0.07	−0.08
$[t]$	[0.39]	[−0.10]	[1.15]	[0.55]	[1.36]	[1.16]	[0.75]	[1.12]	[−1.07]	[−1.90]	[−1.48]
e^q_i	0.10	−2.94	0.22	2.29	4.04	4.14	1.66	0.89	−2.40	−5.66	−5.77
$[t]$	[0.04]	[−1.69]	[0.17]	[1.37]	[2.08]	[1.98]	[1.21]	[0.65]	[−1.36]	[−1.99]	[−1.92]

Figure A1 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Second-Stage GMM

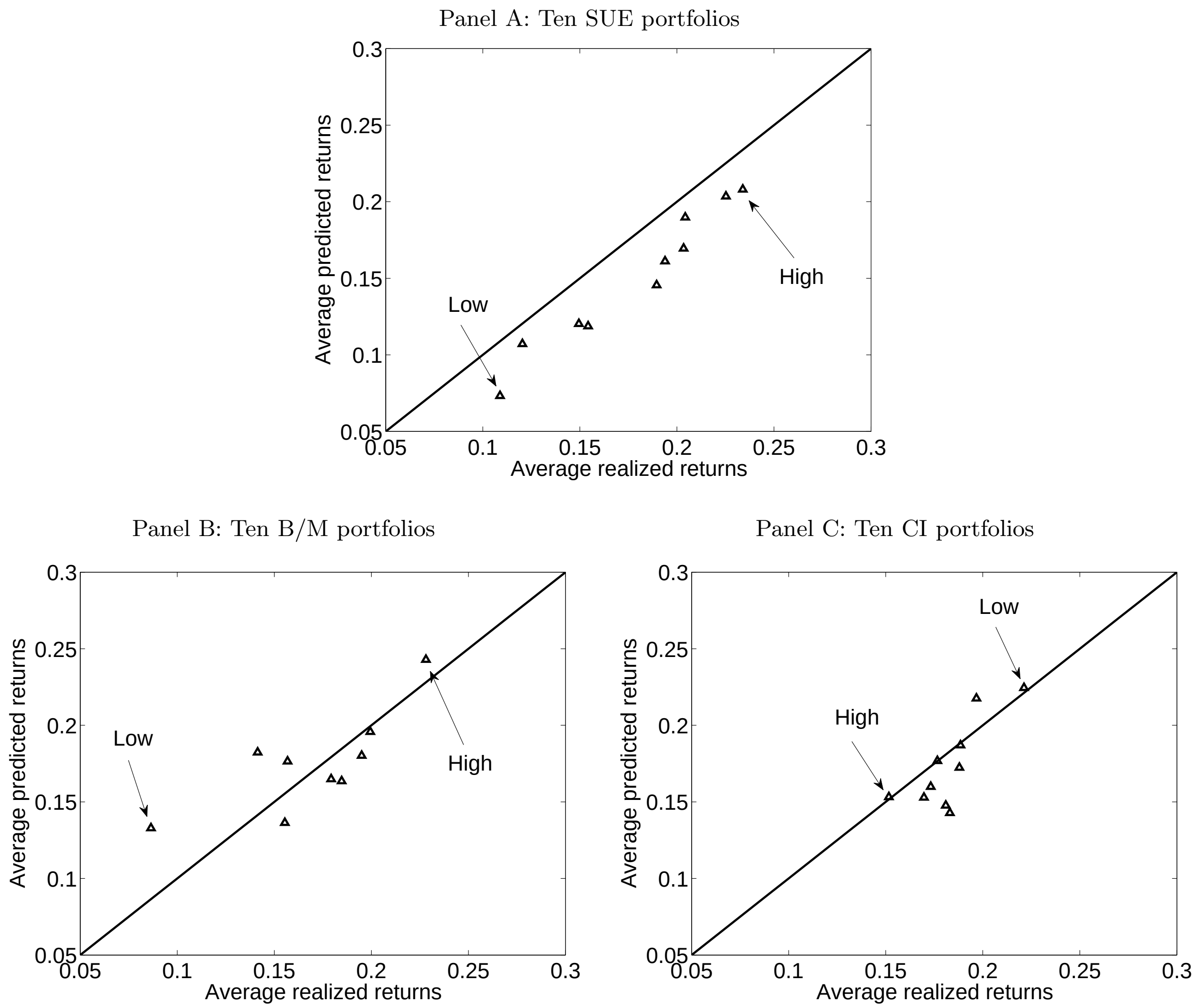

Figure A2 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, Second-Stage GMM

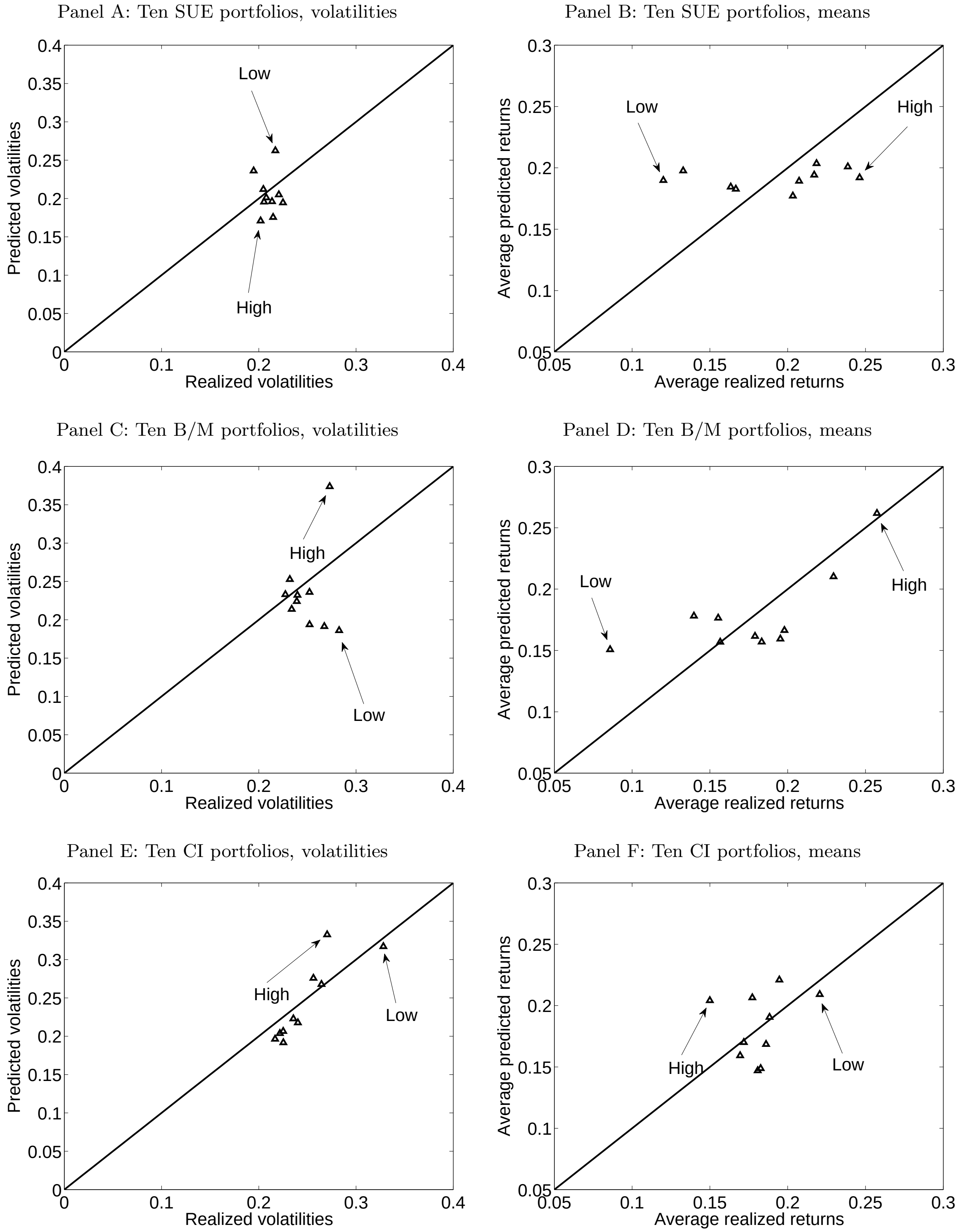

Figure A3 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, The Market Value of Debt per the Bernanke and Campbell (1988) Algorithm

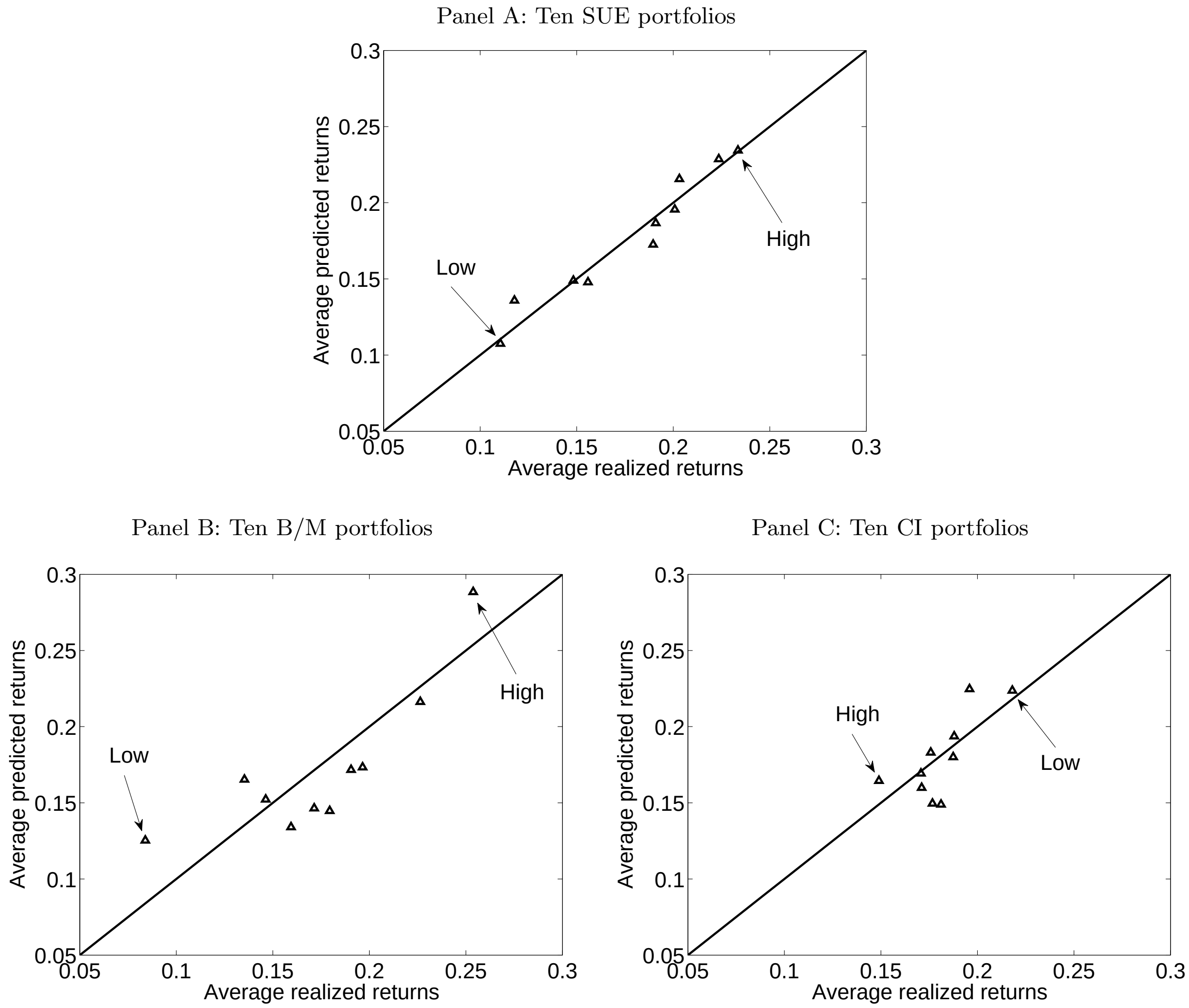

Figure A4 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, The Market Value of Debt per the Bernanke and Campbell (1988) Algorithm

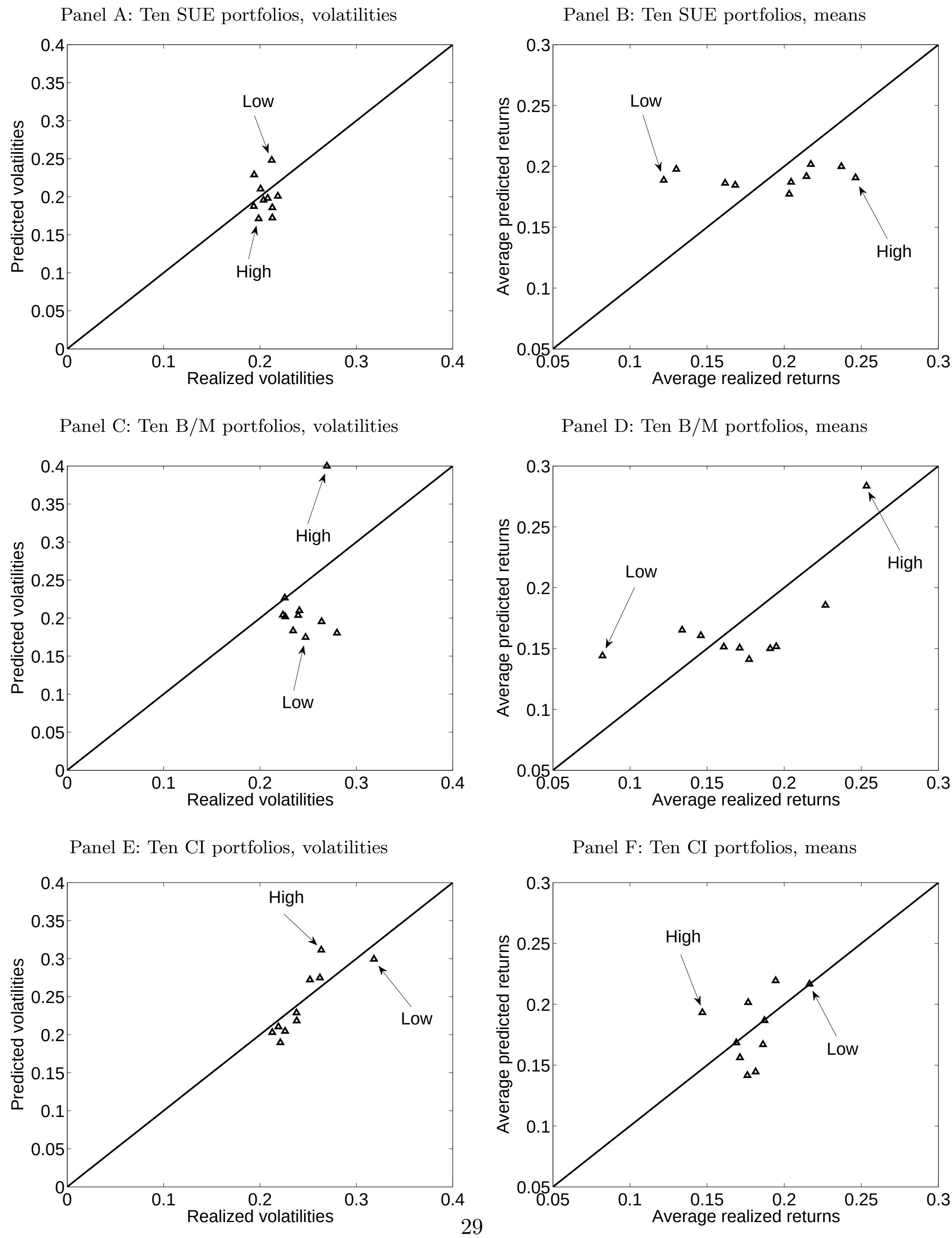

Figure A5 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Value-Weighted Returns

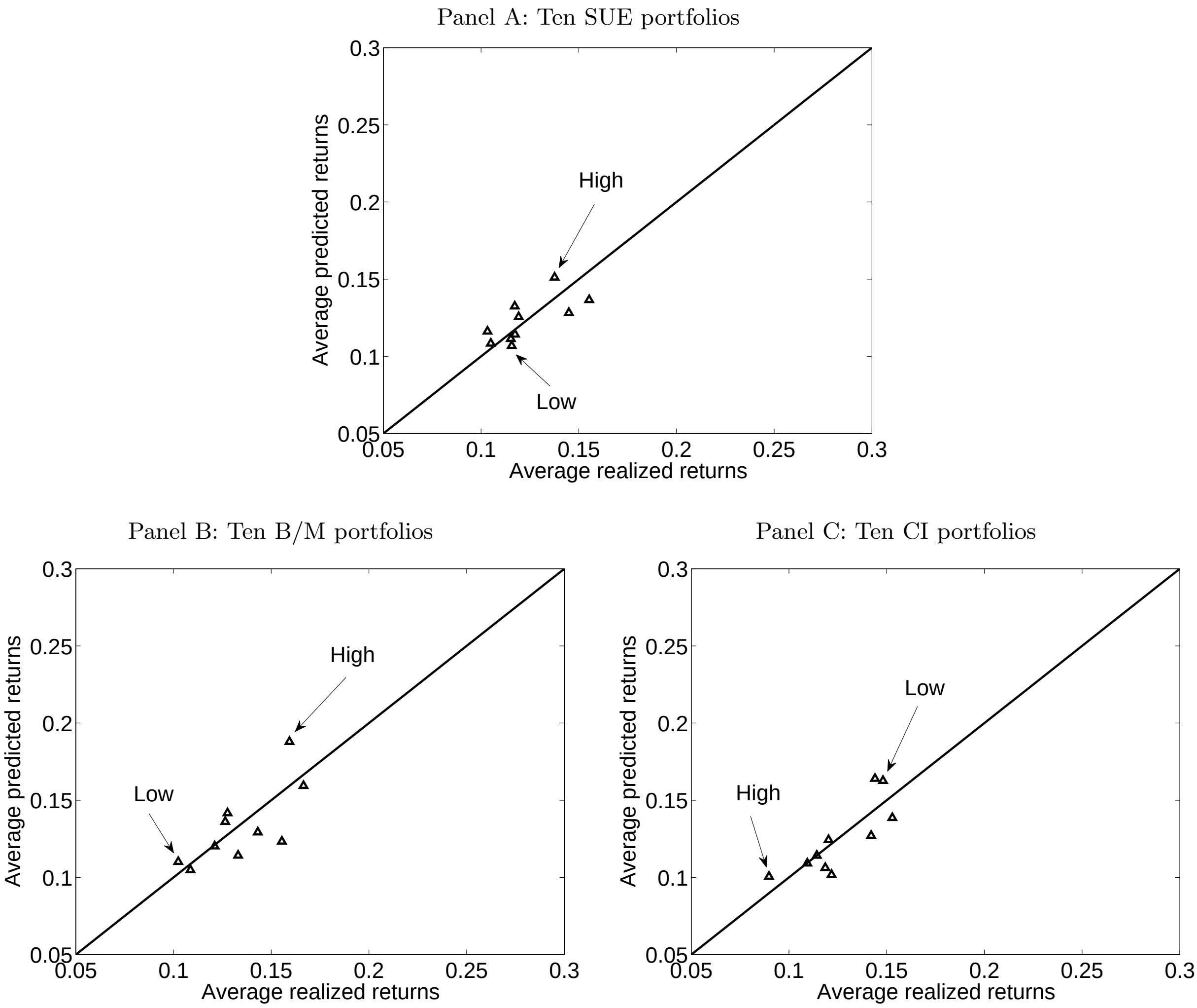

Figure A6 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, Value-Weighted Returns

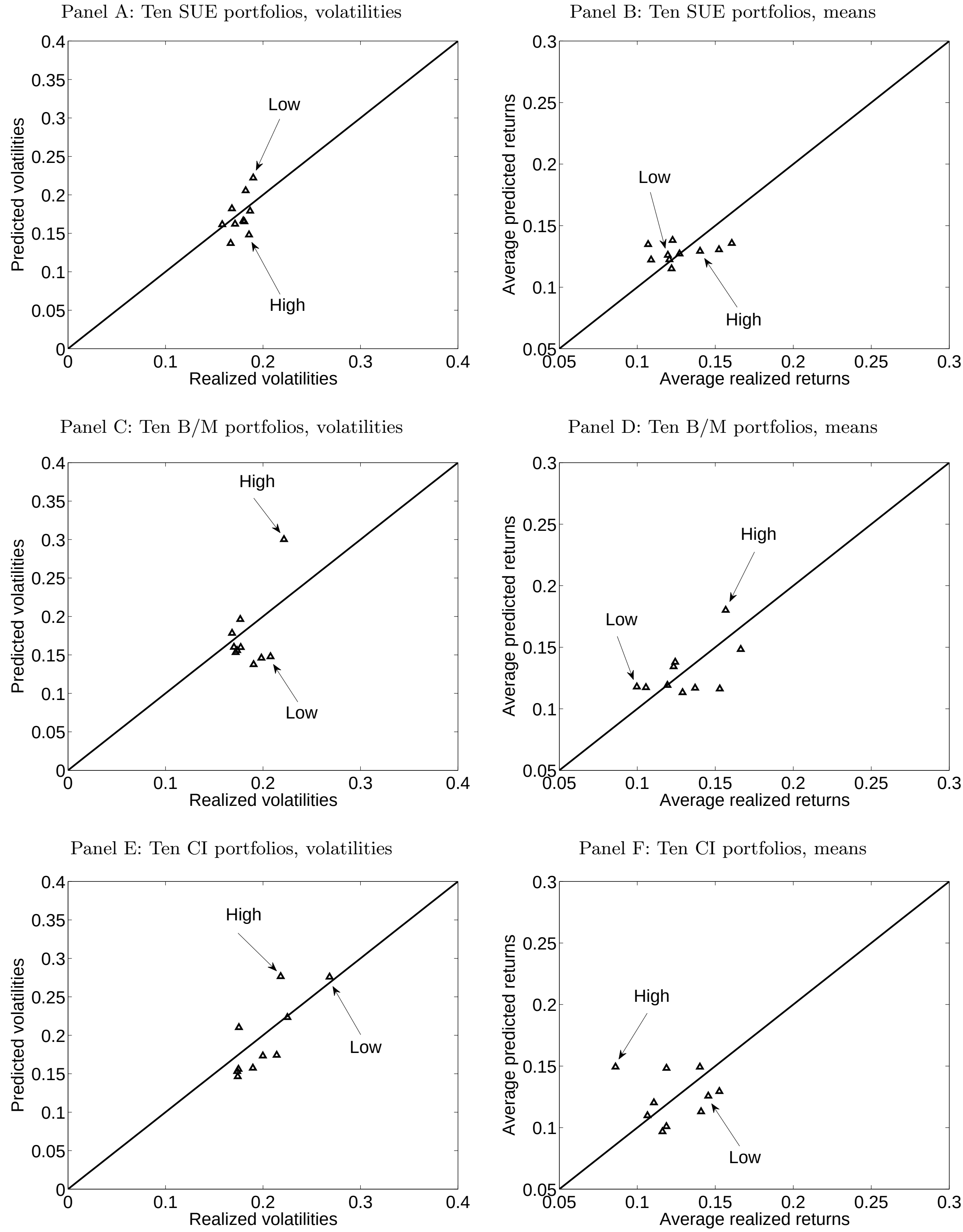

Figure A7 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, An Alternative Measure of Capital

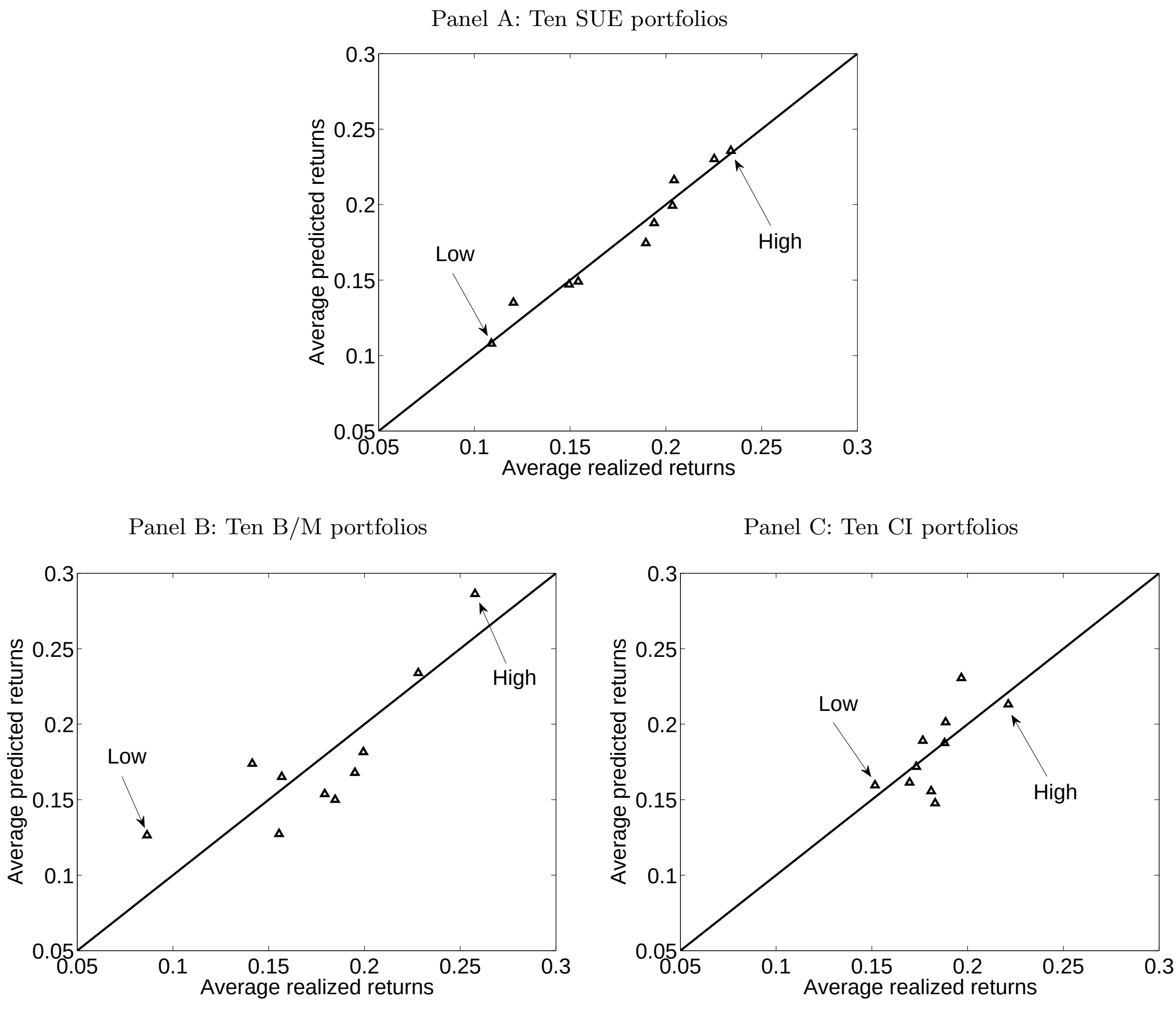

Figure A8 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, An Alternative Measure of Capital

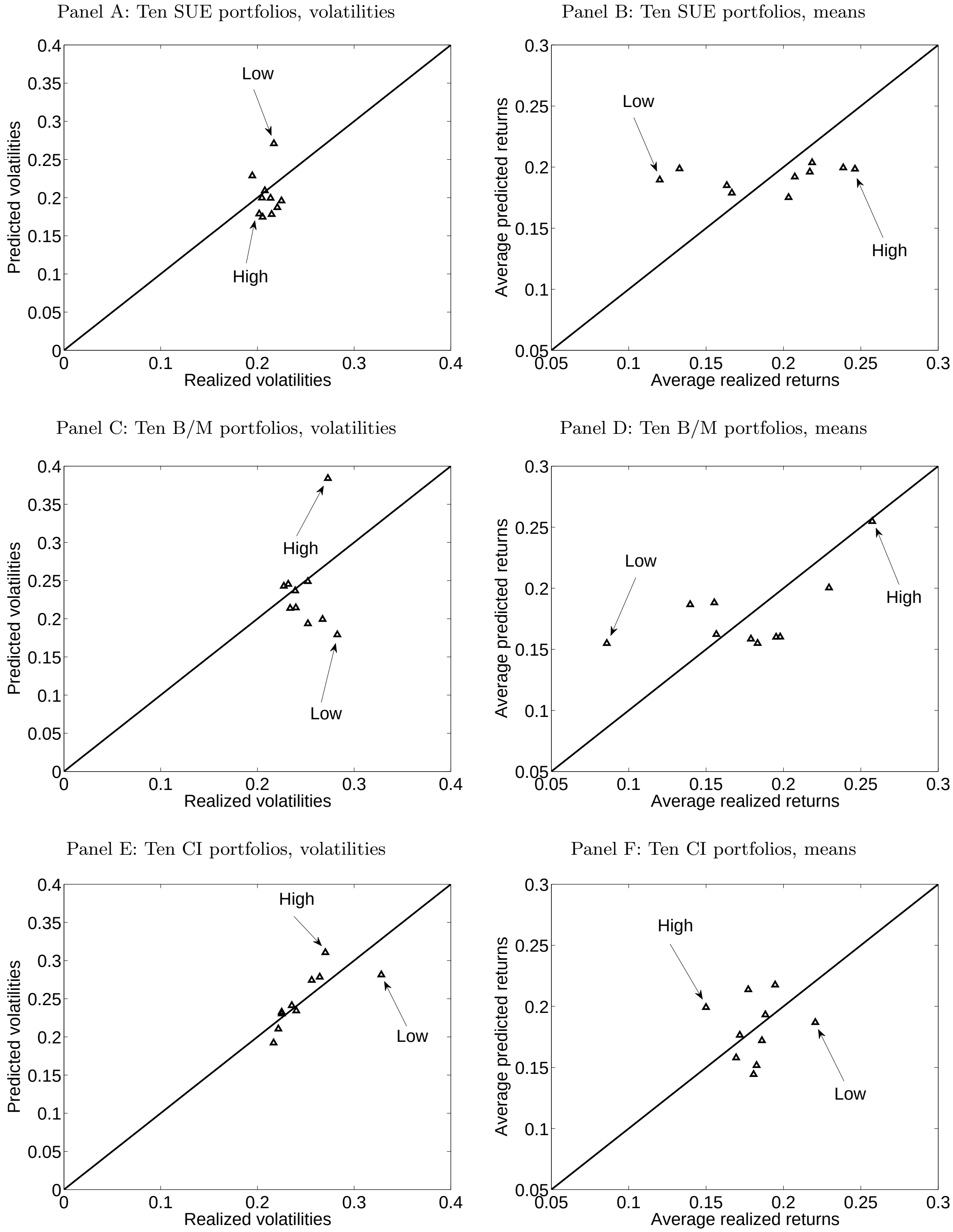

Figure A9 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, An Alternative Measure of Investment

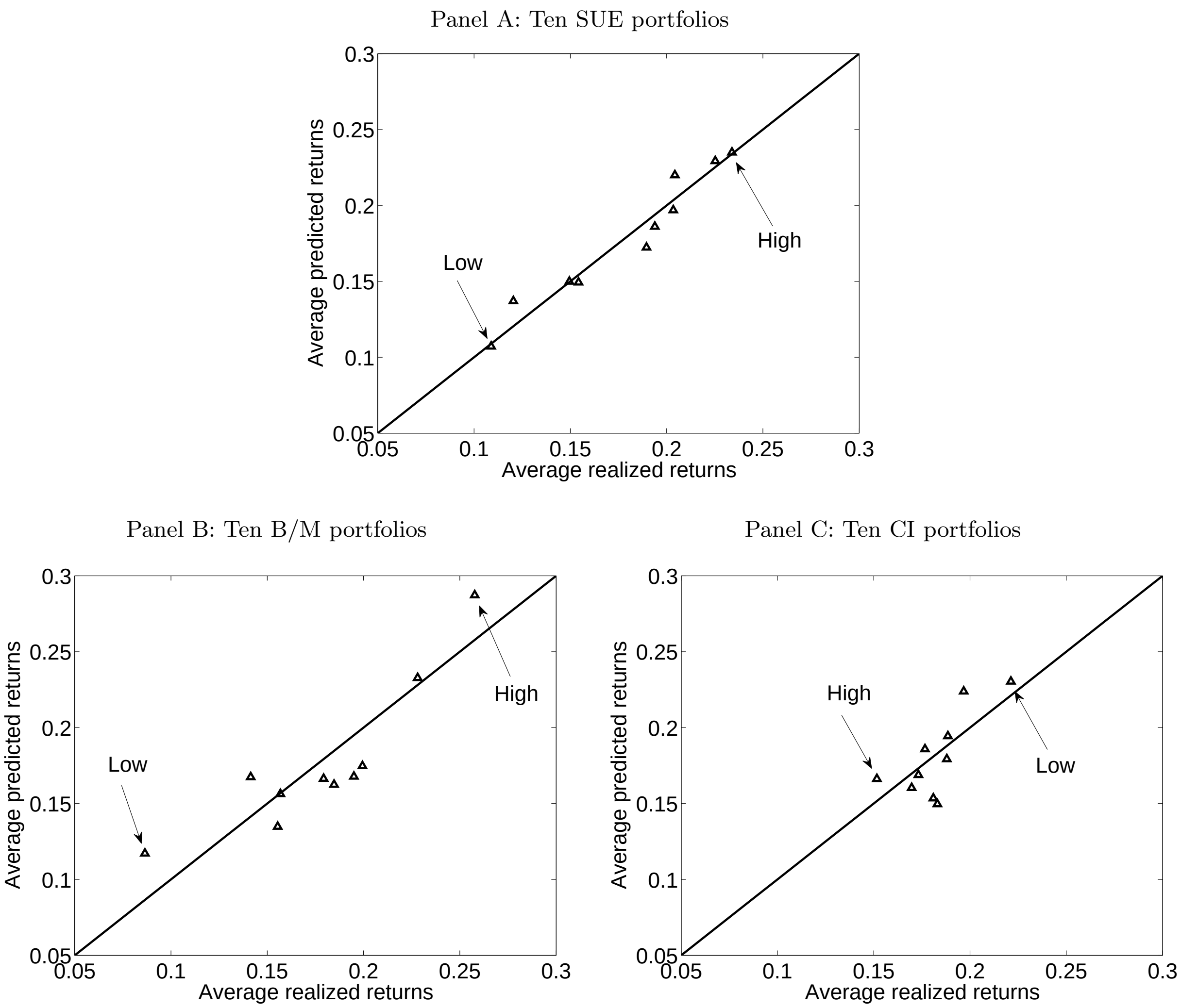

Figure A10 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, An Alternative Measure of Investment

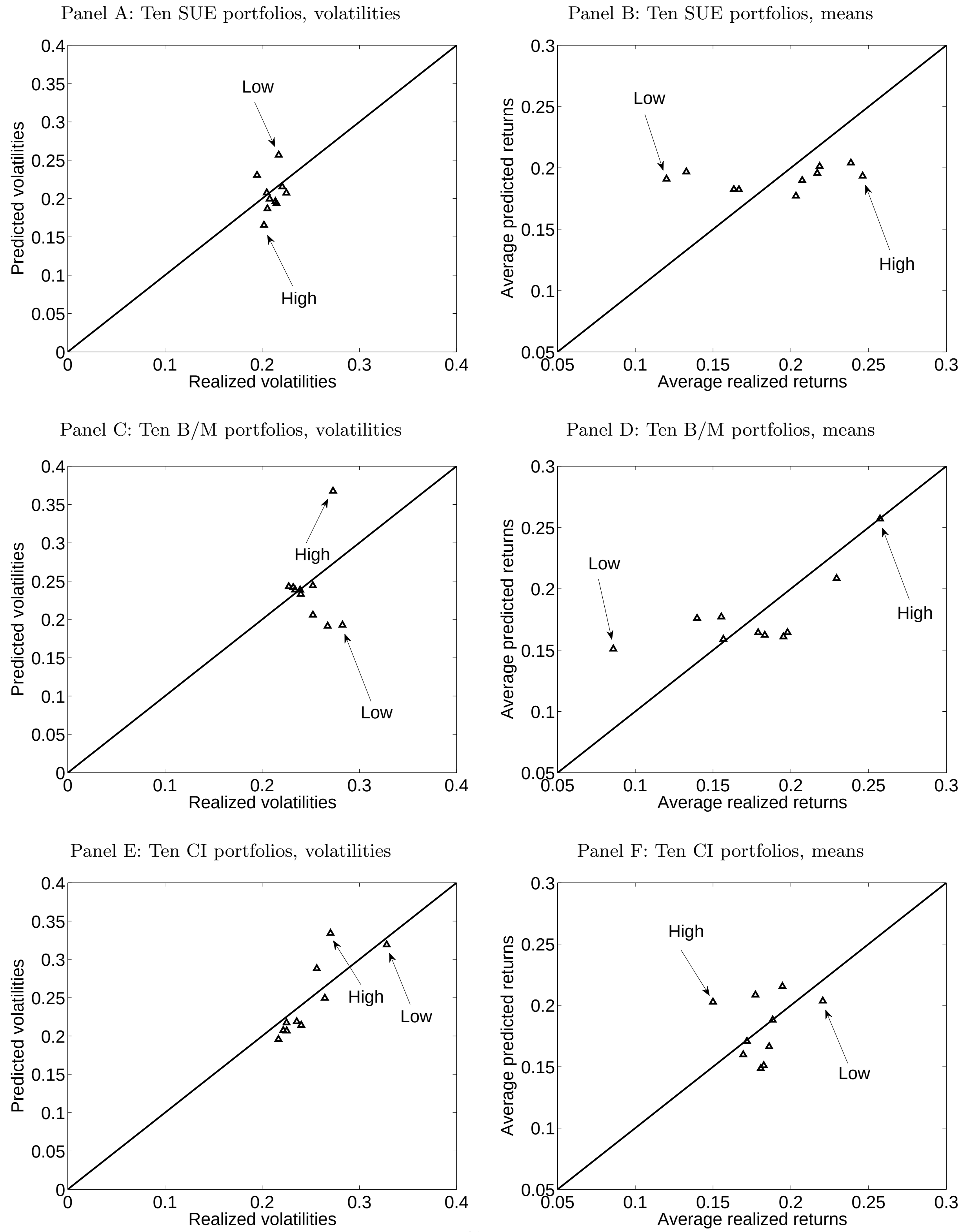

Figure A11 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Time-Invariant Tax Rates

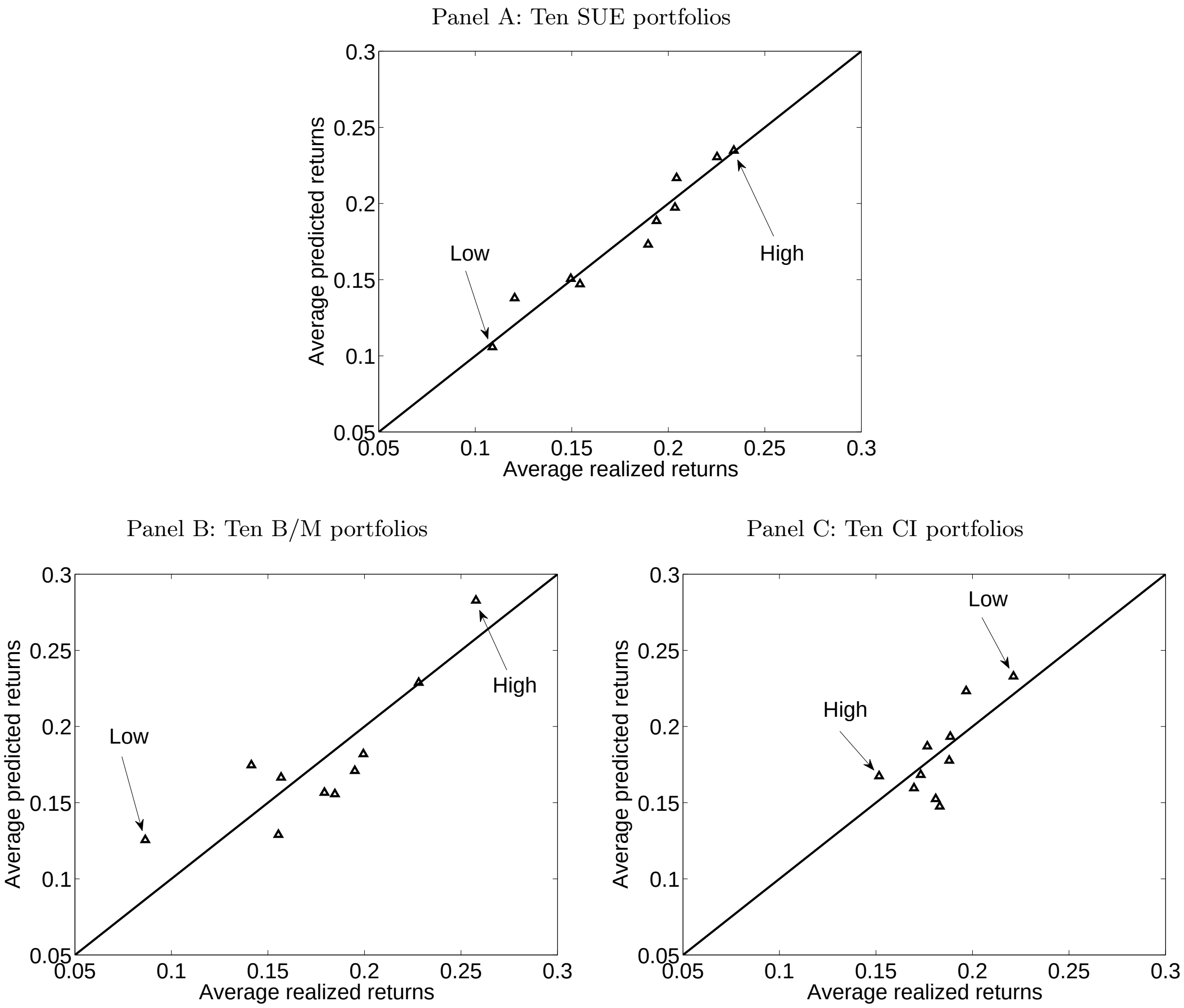

Figure A12 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, Time-Invariant Tax Rates

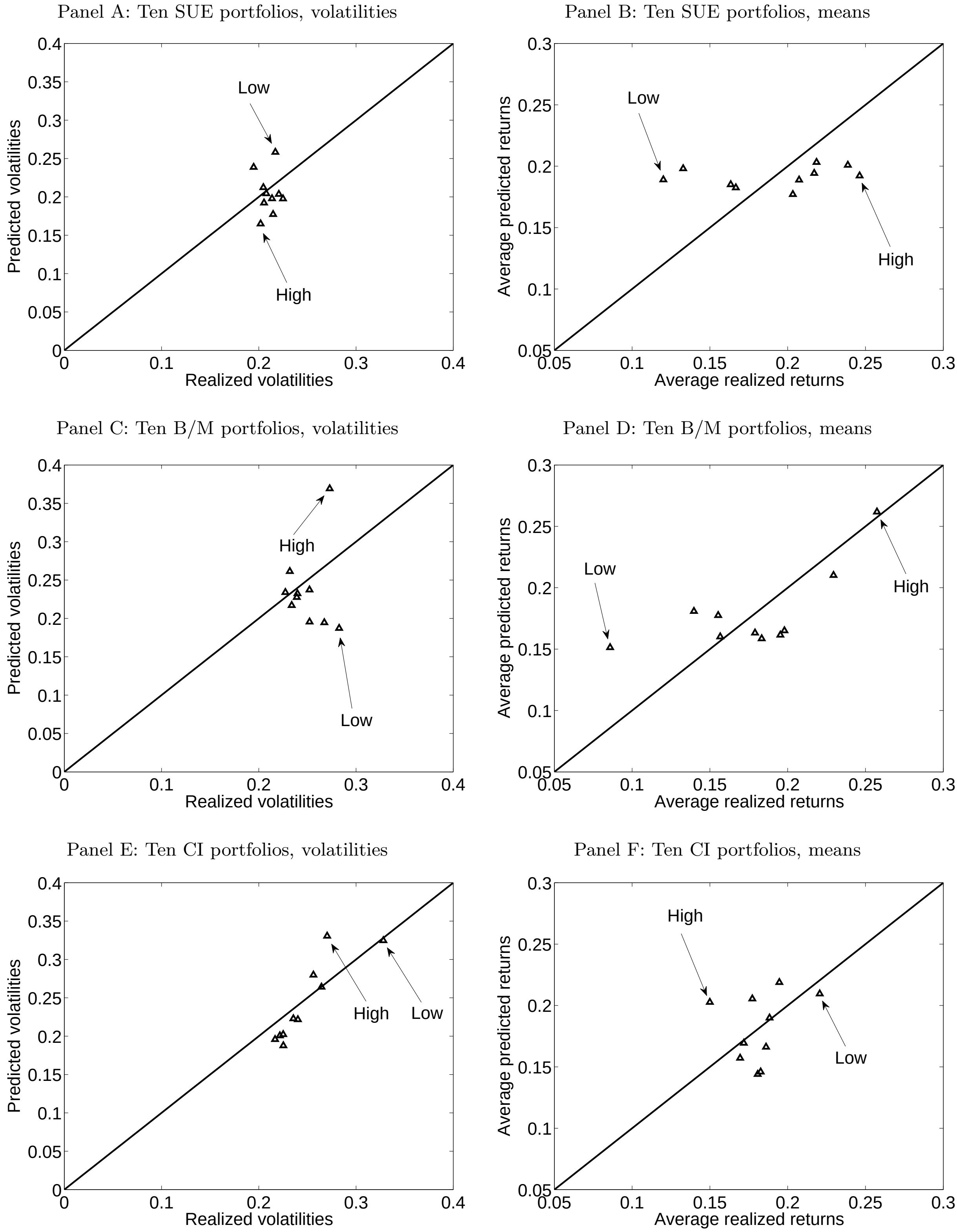

Figure A13 : Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Time-Invariant Tax Rates

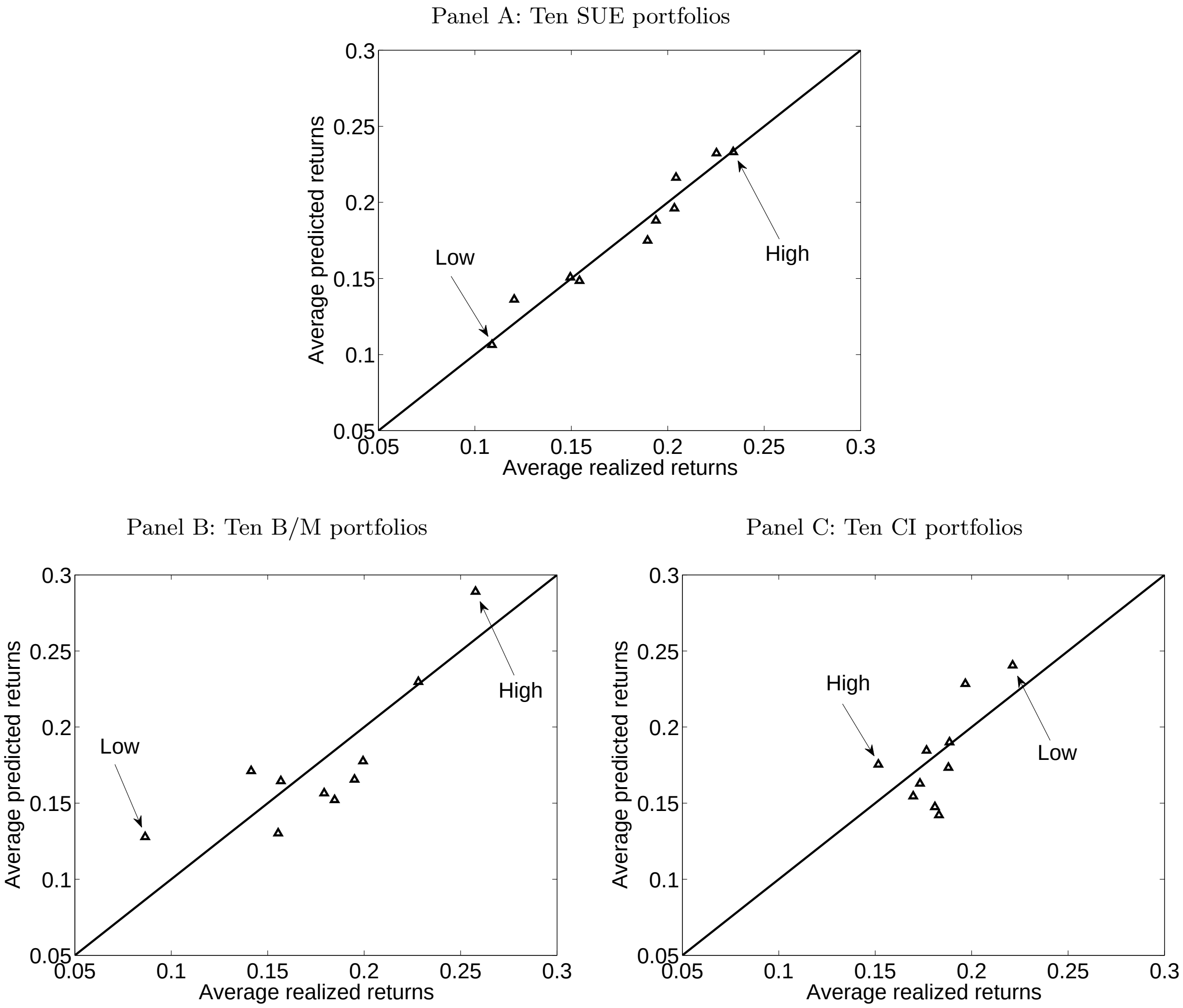

Figure A14 : Predicted Stock Return Volatilities versus Realized Stock Return Volatilities, Average Predicted Stock Returns versus Average Realized Stock Returns, The q-theory Model, Matching Both Expected Returns and Variances, Time-Invariant Tax Rates