Institutional Ownership and Return Predictability Across Economically Unrelated Stocks

Internet Appendix: Robustness Checks

Table IA-1: FFC4 alphas and factor loadings

This table reports the weekly alphas (in percent) and betas of industry-neutral portfolios of stocks sorted based on predicted cumulative abnormal returns (CARs) from economically unrelated stock pairs. Quintile 1 has the lowest predicted CARs, while quintile 5 has the highest. For each quintile of stocks, we report the value-weighted Alpha (*Alpha*) and the loadings on the market factor (*Market Beta*), size factor (*Size Beta*), book-to-market factor (*Book-to-Mkt Beta*), and momentum factor (*Momentum Beta*) in a Fama-French-Carhart four-factor regression. The average number of stocks in each portfolio is reported under *# Stocks* . The row labeled Q5-Q1 shows the difference between quintile 5 and quintile 1. *t* -statistics are reported in parentheses below the coefficient estimates.

Quintile	Alpha	Market Beta	Size Beta	Book-to-Mkt Beta	Momentum Beta	# Stocks
1 (Low)	-0.119	1.026	0.082	0.187	-0.050	356
	(-5.3)	*(100.2)*	*(4.5)*	*(10.4)*	*(-5.1)*	
2	-0.054	0.943	-0.113	0.045	-0.013	368
	(-3.1)	*(117.6)*	*(-8.0)*	*(3.2)*	*(-1.7)*	
3	-0.001	0.944	-0.148	0.012	-0.006	368
	(-0.1)	*(121.4)*	*(-10.9)*	*(0.9)*	*(-0.8)*	
4	0.044	1.021	-0.069	-0.004	0.013	368
	(2.6)	*(131.8)*	*(-5.1)*	*(-0.3)*	*(1.8)*	
5 (High)	0.076	1.112	0.142	-0.096	0.006	380
	(3.5)	*(111.9)*	*(8.2)*	*(-5.4)*	*(0.6)*	
Q5 - Q1	0.195	0.086	0.061	-0.283	0.056	
	(5.7)	*(5.5)*	*(2.2)*	*(-10.2)*	*(3.7)*	

Table IA-2: Return predictability and characteristic-based explanations

This table reports the weekly excess return in percent for portfolios based on double sorts of predicted cumulative abnormal returns (CARs) and other characteristics, from 1980 to 2010. For each characteristic, we form 25 portfolios by independent industry-neutral sorts on predicted CAR and the firm characteristic. The portfolios are formed and rebalanced weekly. We report value-weighted excess returns above risk-free rate for each of the 25 portfolios. The row labeled Q5-Q1 shows the difference in estimate for quintile 5 minus quintile 1, with the *t*-statistic in parentheses below the difference. The last two columns on the left panel show the difference in returns between the stocks in the highest characteristic quintile and those in the lowest characteristic quintile, with the *t*-statistic in parentheses to the right. The average number of stocks in each portfolio is listed on the right of each panel. Earnings surprise is measured by three-day abnormal returns for the earnings announcement within the past 60 days of portfolio formation. Size, book-to-market ratio, and past returns are as of the month prior to portfolio formation.

Panel A: Predicted CAR by market capitalization (size) quintiles

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Small)	2	3	4	5 (Big)	Big - Small		1 (Small)	2	3	4	5 (Big)
1 (Low)	0.130	0.106	0.097	0.096	0.017	-0.109	*(-2.2)*	93	81	71	61	51
2	0.166	0.132	0.167	0.115	0.065	-0.105	*(-2.2)*	66	69	71	76	86
3	0.210	0.182	0.166	0.149	0.114	-0.096	*(-2.0)*	59	65	71	78	96
4	0.213	0.213	0.181	0.160	0.183	-0.030	*(-0.6)*	60	69	74	79	87
5 (High)	0.286	0.264	0.192	0.179	0.227	-0.054	*(-1.0)*	79	84	82	74	60
Q5 - Q1	0.155	0.158	0.091	0.079	0.211							
	(4.6)	*(4.7)*	*(2.9)*	*(2.3)*	*(4.8)*							

Panel B: Predicted CAR by book-to-market (growth versus value) quintiles

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Growth)	2	3	4	5 (Value)	Value - Growth		1 (Growth)	2	3	4	5 (Value)
1 (Low)	0.018	0.015	0.051	-0.027	0.147	0.119	*(2.3)*	55	59	67	78	97
2	0.059	0.085	0.068	0.149	0.137	0.082	*(1.6)*	57	71	76	80	84
3	0.130	0.146	0.121	0.135	0.128	-0.001	*(0.0)*	65	77	78	76	73
4	0.158	0.144	0.218	0.215	0.214	0.047	*(0.9)*	75	80	76	71	65
5 (High)	0.208	0.191	0.251	0.196	0.318	0.102	*(1.8)*	103	81	70	63	62
Q5 - Q1	0.189	0.174	0.203	0.228	0.172							
	(3.5)	*(3.3)*	*(4.0)*	*(3.8)*	*(3.4)*							

Panel C: Predicted CAR by past 1-week return (weekly reversal) quintiles

	Mean Excess Return (%)							Average # Stocks				
Pred. CAR Quintile	1 (Loser)	2	3	4	5 (Winner)	Winner - Loser		1 (Loser)	2	3	4	5 (Winner)
1 (Low)	0.393	0.140	0.037	-0.090	-0.251	-0.641	*(-9.9)*	75	70	68	68	75
2	0.567	0.196	0.152	-0.058	-0.259	-0.817	*(-13.3)*	66	77	78	77	71
3	0.579	0.294	0.146	-0.031	-0.245	-0.819	*(-13.1)*	65	76	79	77	71
4	0.576	0.420	0.245	0.019	-0.221	-0.800	*(-12.2)*	68	74	75	76	75
5 (High)	0.664	0.353	0.198	0.129	-0.099	-0.757	*(-10.8)*	83	71	68	71	89
Q5 - Q1	0.269	0.213	0.154	0.224	0.153							
	(4.4)	*(4.0)*	*(2.9)*	*(4.2)*	*(2.7)*							

Panel D: Predicted CAR by past 1-month return (monthly reversal) quintiles

	Mean Excess Return (%)							Average # Stocks				
Pred. CAR Quintile	1 (Loser)	2	3	4	5 (Winner)	Winner - Loser		1 (Loser)	2	3	4	5 (Winner)
1 (Low)	0.080	0.104	0.075	-0.026	-0.032	-0.103	*(-1.6)*	74	69	68	68	77
2	0.116	0.159	0.120	0.028	-0.005	-0.123	*(-2.0)*	65	76	79	77	72
3	0.216	0.171	0.158	0.101	0.007	-0.203	*(-3.2)*	64	76	79	77	71
4	0.310	0.226	0.154	0.157	0.104	-0.207	*(-3.1)*	68	75	76	76	74
5 (High)	0.195	0.286	0.209	0.208	0.218	0.034	*(0.5)*	84	71	67	70	87
Q5 - Q1	0.113	0.174	0.139	0.234	0.251							
	(1.8)	*(3.1)*	*(2.5)*	*(4.4)*	*(4.8)*							

Panel E: Predicted CAR by past 12-month to 2-month return (momentum) quintiles

	Mean Excess Return (%)							Average # Stocks				
Pred. CAR Quintile	1 (Loser)	2	3	4	5 (Winner)	Winner - Loser		1 (Loser)	2	3	4	5 (Winner)
1 (Low)	-0.034	0.060	0.050	0.023	0.131	0.162	*(2.3)*	98	79	66	58	56
2	0.050	0.078	0.088	0.037	0.168	0.115	*(1.8)*	73	84	81	73	57
3	0.132	0.103	0.129	0.126	0.185	0.049	*(0.7)*	63	77	82	79	66
4	0.119	0.146	0.169	0.204	0.217	0.095	*(1.4)*	59	70	76	82	81
5 (High)	0.058	0.143	0.185	0.198	0.301	0.242	*(3.5)*	63	59	63	76	119
Q5 - Q1	0.089	0.082	0.139	0.175	0.169							
	(1.4)	*(1.4)*	*(2.6)*	*(3.4)*	*(3.4)*							

Panel F: Predicted CAR by past 60-month to 13-month return (long-run reversal) quintiles

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Loser)	2	3	4	5 (Winner)	Winner - Loser		1 (Loser)	2	3	4	5 (Winner)
1 (Low)	0.143	0.068	-0.014	-0.040	0.025	-0.116	*(-1.9)*	105	75	57	43	32
2	0.154	0.112	0.079	0.079	0.033	-0.119	*(-2.1)*	67	79	73	62	43
3	0.210	0.185	0.136	0.108	0.097	-0.110	*(-2.0)*	51	68	74	73	58
4	0.298	0.193	0.208	0.214	0.131	-0.168	*(-3.1)*	44	57	67	77	79
5 (High)	0.223	0.246	0.274	0.252	0.193	-0.030	*(-0.5)*	46	45	53	68	124
Q5 - Q1	0.084	0.174	0.281	0.293	0.170							
	(1.4)	*(3.2)*	*(5.0)*	*(5.0)*	*(2.8)*							

Panel G: Predicted CAR by earnings surprise (earnings momentum) quintiles

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Bad)	2	3	4	5 (Good)	Good - Bad		1 (Bad)	2	3	4	5 (Good)
1 (Low)	0.036	-0.014	-0.006	0.093	0.127	0.092	*(1.7)*	88	68	57	59	83
2	0.090	0.072	0.048	0.080	0.155	0.071	*(1.4)*	72	78	76	72	71
3	0.183	0.075	0.107	0.175	0.208	0.030	*(0.6)*	65	77	82	76	68
4	0.071	0.184	0.150	0.209	0.194	0.119	*(2.2)*	62	74	81	79	70
5 (High)	0.151	0.137	0.289	0.223	0.242	0.089	*(1.5)*	67	68	74	82	88
Q5 - Q1	0.118	0.155	0.292	0.131	0.116							
	(1.9)	*(2.7)*	*(5.2)*	*(2.5)*	*(2.2)*							

Panel H: Predicted CAR by Amihud illiquidity quintiles

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Low)	2	3	4	5 (High)	High - Low		1 (Low)	2	3	4	5 (High)
1 (Low)	0.024	0.052	0.109	0.078	0.080	0.055	*(1.1)*	49	61	70	80	95
2	0.071	0.097	0.141	0.154	0.106	0.032	*(0.7)*	80	74	70	70	72
3	0.119	0.119	0.177	0.164	0.180	0.059	*(1.2)*	88	77	71	66	65
4	0.185	0.173	0.184	0.168	0.177	-0.005	*(-0.1)*	80	78	74	69	65
5 (High)	0.224	0.174	0.192	0.266	0.281	0.061	*(1.1)*	58	76	82	82	81
Q5 - Q1	0.198	0.124	0.079	0.181	0.205							
	(4.3)	*(3.3)*	*(2.3)*	*(5.4)*	*(5.4)*							

Panel I: Predicted CAR by NYSE/AMEX trading volume quintiles

	Mean Excess Return (%)							Average # Stocks				
Pred. CAR Quintile	1 (Low)	2	3	4	5 (High)	High - Low		1 (Low)	2	3	4	5 (High)
1 (Low)	0.103	0.051	0.080	0.050	0.016	-0.086	*(-1.6)*	45	42	39	37	37
2	0.149	0.111	0.098	0.126	0.069	-0.083	*(-1.7)*	38	41	42	44	47
3	0.210	0.184	0.088	0.141	0.099	-0.113	*(-2.3)*	36	39	42	45	50
4	0.171	0.144	0.173	0.147	0.184	0.013	*(0.3)*	36	41	43	44	48
5 (High)	0.258	0.202	0.222	0.221	0.206	-0.046	*(-0.8)*	44	48	47	43	42
Q5 - Q1	0.144	0.145	0.139	0.177	0.184							
	(3.2)	*(4.0)*	*(3.7)*	*(4.3)*	*(4.0)*							

Panel J: Predicted CAR by NYSE/AMEX turnover quintiles

	Mean Excess Return (%)							Average # Stocks				
Pred. CAR Quintile	1 (Low)	2	3	4	5 (High)	High - Low		1 (Low)	2	3	4	5 (High)
1 (Low)	0.002	-0.033	0.023	0.066	0.059	0.051	*(0.7)*	42	39	38	38	43
2	0.072	0.094	0.067	0.120	0.157	0.075	*(1.2)*	41	45	44	43	40
3	0.129	0.083	0.124	0.146	0.093	-0.039	*(-0.6)*	39	45	45	43	40
4	0.186	0.180	0.188	0.172	0.124	-0.059	*(-0.9)*	38	44	44	44	43
5 (High)	0.220	0.248	0.225	0.142	0.236	0.017	*(0.2)*	40	40	41	44	59
Q5 - Q1	0.206	0.290	0.196	0.074	0.173							
	(3.2)	*(5.0)*	*(3.9)*	*(1.4)*	*(3.0)*							

Table IA-3: Stocks traded every day

This table reports the weekly excess returns and alphas (in percent) of industry-neutral portfolios of stocks sorted based on predicted cumulative abnormal returns (CARs) from economically unrelated stock pairs, with only stocks that trade every day during the prior 12 months included in the stock pairs. Quintile 1 has the lowest predicted CARs, while quintile 5 has the highest. For each quintile of stocks, we report the value-weighted excess return above the risk-free rate (*ER*) and the value-weighted alphas from CAPM (*CAPM*), the Fama-French three-factor model (*FF3*), and the Fama-French-Carhart four-factor model (*FFC4*). The average number of stocks in each portfolio is reported under *# Stocks*. The row labeled Q5-Q1 shows the difference between quintile 5 and quintile 1. *t*-statistics are reported in parentheses below the coefficient estimates.

Quintile	ER	CAPM	FF3	FFC4	# Stocks
1 (Low)	0.016	-0.112	-0.136	-0.123	271
	(0.3)	*(-4.7)*	*(-6.0)*	*(-5.5)*	
2	0.075	-0.042	-0.044	-0.043	283
	(1.3)	*(-2.4)*	*(-2.5)*	*(-2.5)*	
3	0.117	-0.002	-0.001	0.002	283
	(2.0)	*(-0.1)*	*(-0.1)*	*(0.1)*	
4	0.169	0.041	0.046	0.042	283
	(2.8)	*(2.4)*	*(2.7)*	*(2.5)*	
5 (High)	0.202	0.060	0.070	0.068	295
	(2.9)	*(2.7)*	*(3.2)*	*(3.1)*	
Q5 - Q1	0.186	0.172	0.206	0.191	
	(5.0)	*(4.7)*	*(5.9)*	*(5.5)*	

Table IA-4: Number of stock pairs

This table reports the weekly excess return in percent for portfolios based on double sorts of predicted cumulative abnormal returns (CARs) and the number of economically unrelated stock pairs for each target stock, from 1980 to 2010. We form 25 portfolios by independent industry-neutral sorts on predicted CAR and the number of stock pairs. The portfolios are formed and rebalanced weekly. We report value-weighted excess returns above risk-free rate for each of the 25 portfolios. The row labeled Q5-Q1 shows the difference in estimate for quintile 5 minus quintile 1, with the *t*-statistic in parentheses below the difference. The last two columns of the left panel show the difference in returns between the stocks in the highest number-of-pairs quintile and those in the lowest number-of-pairs quintile, with the *t*-statistic in parentheses to the right. The average number of stocks in each portfolio is listed on the right.

	Mean Excess Return (%)							**Average # Stocks**				
Pred. CAR Quintile	1 (Low)	2	3	4	5 (High)	High - Low		1 (Low)	2	3	4	5 (High)
1 (Low)	0.074	0.010	0.039	0.035	0.037	-0.024	*(-0.5)*	84	72	68	65	67
2	0.122	0.099	0.048	0.054	0.106	-0.012	*(-0.2)*	58	72	77	80	82
3	0.204	0.100	0.167	0.112	0.096	-0.102	*(-2.0)*	56	72	78	81	83
4	0.186	0.222	0.116	0.174	0.172	-0.007	*(-0.1)*	60	74	77	78	80
5 (High)	0.211	0.215	0.250	0.193	0.243	0.039	*(0.7)*	94	80	70	66	71
Q5 - Q1	0.137	0.193	0.215	0.161	0.201							
	(2.6)	*(3.5)*	*(3.8)*	*(2.9)*	*(3.6)*							