

Online Appendix

For “Investing in the ‘New Economy’: Mutual Fund Performance and the Nature of the Firm”

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This Appendix reports on additional robustness tests to accompany the results in “Investing in the ‘New Economy’: Mutual Fund Performance and the Nature of the Firm”.

In Table A1, I perform robustness checks to see whether the main results hold across funds which vary in their attributes. At the end of each quarter t , I double-sort based on IIR and, independently, based on the following fund attributes: *TNA*, *Fund Age*, *Manager Tenure*, *Past Flows*, *Expense Ratio*, *Turnover Ratio*, *Industry Concentration*, and *Active Share*. The funds are divided into two groups, High and Low, including the top and bottom half of the sample. The annualized four-factor alphas are reported for the High and Low groups for each IIR quintile. The results in Table A1 show that the IIR Quintile 1-5 alphas remain positive and nearly always significant across both the High and Low groups for each fund attribute. For instance, the IIR Quintile 1-5 four-factor alpha for the High (Low) *Active Share* groups is a significantly positive 1.73% (3.09%) per year.

In Table A2, the additional tests examine whether the negative relation between IIR and fund performance is driven by outliers in the sample or compositional effects. Table A2 Panel A shows that the results are not driven by the Dotcom bubble and bust period (1997-2002) since they hold in the 1980-1996, 1997-2002, as well as 2003-2009 periods. The results are also robust to the skewness in returns, TNA-weighting the alphas, exclusion of technology stocks in

computing *IIR*, and excluding funds with extreme TNA and risk factor loadings.¹ Table A2 Panel B reports returns for *IIR* decile portfolios within four objective groups which represent about 85% of the sample, with the results demonstrating that the main results do not simply mirror compositional effects related to fund objectives. Also, the results for funds categorized as *Aggressive Growth/Growth* (columns (1)-(2)) and *Small Cap* (columns (5)-(6)), provide evidence consistent with Schultz (2010) and the findings in this study. That is, funds focusing on difficult-to-value growth and small firms generate positive alphas based on net and gross returns for lower *IIR* deciles, and negative or insignificant alphas for higher *IIR* deciles.

¹ Technology stocks are identified based on SIC codes following Loughran and Ritter (2004).

Table A1
Portfolios of Mutual Funds Sorted on Fund Attributes and Portfolio Concentration in Intangibles

Funds are sorted into two groups in each quarter t based on the following fund attributes: *TNA*, *Fund Age*, *Manager Tenure*, *Past Flows*, *Expense Ratio*, *Turnover Ratio*, *Industry Concentration*, and *Active Share*. The Low (High) group indicates funds in the bottom (top) half of the sample in the quarter. *Past Flows* are sorted based on net inflows and net outflows. Funds are then sorted and ranked into quintiles based on *IIR* (defined in Table 1) within each group based on a fund attribute. The table reports the portfolio level four-factor alphas from monthly net excess returns in quarter $t+2$ of the quintile portfolios within each Low/High group. The p -values based on Newey-West robust standard errors with a lag length of 12 months are reported in parentheses. **, * represent statistical significance at the 1% and 5% level.

<i>IIR</i> Quintile (t)	<i>TNA</i>		<i>Fund Age</i>		<i>Manager Tenure</i>		<i>Past Flows</i>	
	Low	High	Low	High	Low	High	Net Outflow	Net Inflow
Quintile 1 (Most Tangibles)	0.93	0.89	1.04*	0.60	0.50	1.21*	0.46	0.83
Quintile 2	0.37	-0.13	0.49	-0.09	0.04	0.67	-0.13	0.31
Quintile 3	-0.37	-0.72	-0.29	-0.46	-0.84	0.28	-0.22	0.06
Quintile 4	-0.20	-0.85	-0.48	-0.47	-0.67	0.15	-0.71	-0.59
Quintile 5 (Most Intangibles)	-0.65	-1.07	-1.12*	-1.03	-1.63	-0.55	-0.99*	-1.02*
Quintile 1-5	1.58*	1.96**	2.16**	1.63*	2.13**	1.76*	1.45	1.85**
(p -value)	(0.02)	(0.01)	(0.00)	(0.03)	(0.00)	(0.02)	(0.06)	(0.00)
Quintile rank (t)	<i>Expense Ratio</i>		<i>Turnover Ratio</i>		<i>Industry Concentration</i>		<i>Active Share</i>	
	Low	High	Low	High	Low	High	Low	High
Quintile 1 (Most Tangibles)	1.07	0.52	1.19*	0.57	0.24	0.84	-0.05	1.16*
Quintile 2	0.05	-0.04	0.38	-0.24	0.27	-0.23	-1.00*	0.71
Quintile 3	-0.33	-0.21	-0.24	-0.97	-0.13	-0.58	-1.38**	0.15
Quintile 4	-0.52	-0.68	-0.26	-1.00*	-0.47	-0.71	-1.53**	-0.21
Quintile 5 (Most Intangibles)	-0.55	-2.02**	-0.96	-1.02*	-0.73	-1.40*	-1.78**	-1.93**
Quintile 1-5	1.62**	2.54**	2.15**	1.59*	0.97	2.24**	1.73*	3.09**
(p -value)	(0.01)	(0.00)	(0.00)	(0.05)	(0.12)	(0.00)	(0.02)	(0.00)

Table A2
Additional Robustness Checks

Panel A reports the portfolio level four-factor alphas in quarter $t+2$ from monthly net excess returns of the decile portfolios including funds ranked based on IIR in each quarter t for various subsamples. The four benchmark factors used to compute alphas are $(RM_t - Rf_t)$, SMB_t , HML_t , and MOM_t and are as defined in Table 3. Columns (1)-(3) report alphas for three subperiods around the technology bubble and bust period of 1997 to 2002. Column (4) reports alphas based on median values in the time series tests. Column (5) reports alphas based on TNA-weighted monthly decile portfolio excess returns. Column (6) excludes portfolio holdings in technology stocks in computing IIR for a fund. Columns (7)-(10) report alphas for samples excluding the top and bottom 5% of the funds in each quarter based on TNA, and fund level factor loadings on the $(RM_t - Rf_t)$, SMB_t , and HML_t factors. Panel B reports the portfolio level four-factor alphas in quarter $t+2$ based on net and gross returns for subsamples selected based on fund objectives. Net Return and Gross Return are defined as the monthly net fund return and the holdings-based buy-and-hold monthly return, respectively. The p -values based on Newey-West robust standard errors with a lag length of 12 months are reported in parentheses. **, * represent statistical significance at the 1% and 5% level.

Table A2 (continued)
Additional Robustness Checks

Panel A: Robustness checks based on excluding outliers										
<i>IIR</i> Decile (<i>t</i>)	Based on Subperiods			Based on Medians	TNA -wt. returns	Excluding Tech stocks	Excluding Extreme TNA	Excluding Extreme β_{MKT}	Excludin Extreme β_{SMB}	Excluding Extreme β_{HML}
	1980- 1996	1997- 2002	2003- 2009							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Decile 1 (Low)	1.61*	3.97	0.98*	1.48*	1.22	1.61*	1.30*	1.20*	1.27*	1.23*
	(0.05)	(0.10)	(0.04)	(0.02)	(0.07)	(0.02)	(0.03)	(0.05)	(0.03)	(0.04)
Decile 2	0.80	3.37	1.01*	0.28	0.38	0.59	0.56	0.40	0.58	0.51
	(0.30)	(0.14)	(0.02)	(0.52)	(0.56)	(0.36)	(0.31)	(0.48)	(0.28)	(0.33)
Decile 3	1.41	1.77	0.44	0.50	0.47	0.05	0.58	0.68	0.68	0.70
	(0.09)	(0.37)	(0.31)	(0.16)	(0.42)	(0.93)	(0.30)	(0.21)	(0.22)	(0.19)
Decile 4	0.29	0.36	0.51	-0.14	0.00	0.34	0.23	0.27	0.21	0.09
	(0.72)	(0.84)	(0.29)	(0.76)	(1.00)	(0.55)	(0.66)	(0.60)	(0.69)	(0.87)
Decile 5	0.45	-2.07	0.45	-0.28	0.18	-0.46	-0.04	0.06	0.05	0.18
	(0.61)	(0.19)	(0.61)	(0.44)	(0.77)	(0.38)	(0.94)	(0.91)	(0.92)	(0.74)
Decile 6	0.11	-1.32	0.53	-0.47	-0.05	-0.12	-0.13	-0.25	-0.04	-0.32
	(0.91)	(0.52)	(0.35)	(0.21)	(0.93)	(0.83)	(0.82)	(0.67)	(0.94)	(0.57)
Decile 7	-0.36	-1.63	0.05	-0.36	-0.02	-0.32	-0.02	-0.20	-0.24	-0.26
	(0.69)	(0.44)	(0.93)	(0.41)	(0.98)	(0.58)	(0.98)	(0.80)	(0.70)	(0.67)
Decile 8	-1.28	-1.21	0.05	-0.65	-0.44	-0.05	-0.22	-0.01	-0.40	-0.10
	(0.10)	(0.71)	(0.94)	(0.26)	(0.58)	(0.90)	(0.76)	(0.97)	(0.56)	(0.88)
Decile 9	-1.24	-6.15	-0.61	-0.90	-0.47	-0.02	-0.34	-0.68	-0.05	-0.35
	(0.20)	(0.10)	(0.35)	(0.20)	(0.65)	(0.98)	(0.59)	(0.25)	(0.97)	(0.63)
Decile 10 (High)	-1.40*	-7.23	-1.45*	-1.44*	-1.12	-0.72	-1.21	-0.87	-0.85	-1.04*
	(0.05)	(0.07)	(0.03)	(0.03)	(0.20)	(0.15)	(0.16)	(0.15)	(0.10)	(0.05)
Decile 1-10	3.01**	11.20**	2.43**	2.92**	2.34**	2.33**	2.51**	2.07*	2.12**	2.27**
(<i>p</i> -value)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.04)	(0.00)	(0.00)
Quintile 1-5	2.03*	6.78**	1.96**	1.98**	1.83*	1.72*	1.81*	1.53	1.83**	1.93*
(<i>p</i> -value)	(0.02)	(0.00)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.06)	(0.01)	(0.05)

Table A2 (continued)
Additional Robustness Checks

Panel B: Robustness checks based on selected objectives								
<i>IIR Decile (t)</i>	<i>Aggressive Growth/ Growth</i>		<i>Growth & Income</i>		<i>Small Cap</i>		<i>Large Cap</i>	
	Net Return	Gross Return	Net Return	Gross Return	Net Return	Gross Return	Net Return	Gross Return
	(1)	(2)	(3)	(4)	(5)	(6)	(5)	(6)
Decile 1 (Low)	1.47*	3.20**	1.01	2.61**	2.57**	4.80**	0.63	1.71*
	(0.02)	(0.00)	(0.10)	(0.00)	(0.00)	(0.00)	(0.29)	(0.03)
Decile 2	0.20	1.36	0.31	1.43*	2.95**	4.81**	0.70	1.76*
	(0.72)	(0.08)	(0.56)	(0.03)	(0.00)	(0.00)	(0.18)	(0.02)
Decile 3	0.30	1.91**	0.32	1.67*	1.79	4.01**	-0.38	1.90**
	(0.61)	(0.01)	(0.51)	(0.02)	(0.09)	(0.00)	(0.50)	(0.00)
Decile 4	-0.19	1.51*	0.47	1.86**	2.30*	3.98**	-0.41	0.76
	(0.74)	(0.04)	(0.36)	(0.01)	(0.05)	(0.00)	(0.42)	(0.27)
Decile 5	-0.40	1.05	-0.26	1.11	1.63	3.72**	-0.33	1.11
	(0.53)	(0.14)	(0.56)	(0.06)	(0.11)	(0.01)	(0.56)	(0.06)
Decile 6	-0.52	1.20	-0.34	1.23*	0.99	2.58*	-0.43	1.22
	(0.41)	(0.11)	(0.48)	(0.05)	(0.43)	(0.02)	(0.43)	(0.07)
Decile 7	-0.32	1.30	-0.41	1.42*	1.01	2.21*	-0.47	0.91
	(0.64)	(0.12)	(0.38)	(0.03)	(0.20)	(0.05)	(0.40)	(0.22)
Decile 8	-0.42	0.94	-0.62	0.72	1.03	0.44	-0.39	0.82
	(0.59)	(0.29)	(0.18)	(0.22)	(0.18)	(0.61)	(0.51)	(0.13)
Decile 9	-0.42	0.73	-0.71	0.70	0.28	0.16	-1.12	0.11
	(0.67)	(0.53)	(0.09)	(0.25)	(0.85)	(0.92)	(0.10)	(0.87)
Decile 10 (High)	-1.51*	-0.90	-0.60	0.37	-1.12*	-0.60	-1.31	0.04
	(0.05)	(0.13)	(0.29)	(0.30)	(0.03)	(0.79)	(0.06)	(0.98)
Decile 1-10	2.98**	4.10**	1.61*	2.24**	3.69**	5.40**	1.94*	1.67*
(<i>p</i> -value)	(0.00)	(0.00)	(0.05)	(0.00)	(0.00)	(0.00)	(0.05)	(0.05)
Quintile 1-5	2.02**	2.55**	1.13	1.81**	2.30**	4.22**	1.03	1.30
(<i>p</i> -value)	(0.01)	(0.00)	(0.08)	(0.01)	(0.01)	(0.00)	(0.07)	(0.06)

References

Loughran, T., and J. Ritter. "Why has IPO Underpricing Changed Over Time?" *Financial Management*, 33 (2004), 5-37.