Research article

Do fund managers in the Chinese mutual fund market deliver positive risk-adjusted returns? Yes, but it is mainly observed for local fund managers

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Supplementary

Appendix

Table A.1. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed US mutual fund returns, July 2001–July 2021 (net returns).

Percentiles of $t(\alpha)$ estimates for the entire US cross-section (Net Returns)			
Percentiles	Actual	Simulated	% (Simulated < Actual)
1	−5.59	−2.35	0.0%
5	−3.16	−1.66	0.0%
10	−2.47	−1.27	0.1%
20	−1.67	−0.84	0.1%
30	−1.22	−0.50	0.1%
40	−0.88	−0.28	0.2%
50	−0.56	0.00	0.2%
60	−0.21	0.25	0.7%
70	0.13	0.55	2.1%
80	0.52	0.86	6.6%
90	1.10	1.31	23.9%
95	1.69	1.67	58.5%
97	2.15	1.88	80.5%
99	2.71	2.34	87.1%

Source: Author's calculations.

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of $t(\alpha)$ estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of $t(\alpha)$ estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Table A.2. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed mutual fund returns, July 2001–July 2021 — factor portfolios = emerging market factors from Kenneth French's homepage.

Percentiles of $t(\alpha)$ estimates for the entire cross-section (Net Returns)			
Percentiles	Actual	Simulated	% (Simulated < Actual)
1	−1.93	−2.33	73.2%
5	−1.11	−1.61	77.4%
10	−0.76	−1.25	77.4%
20	−0.29	−0.83	82.1%
30	0.05	−0.49	84.5%
40	0.35	−0.28	86.8%
50	0.61	0.00	88.7%
60	0.87	0.23	90.2%
70	1.18	0.46	91.9%
80	1.53	0.70	93.0%
90	2.04	1.11	95.0%
95	2.36	1.46	94.9%
97	2.55	1.60	93.7%
99	3.03	2.09	95.1%

Source: Author's calculations.

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of t(α) estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of t(α) estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Table A.3. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed mutual fund returns, January 2002–December 2013 – (same period as Yang and Lui, 2017).

Percentiles of $t(\alpha)$ estimates for the entire cross-section (Net Returns)			
Percentiles	Actual	Simulated	% (Simulated < Actual)
1	−2.99	−2.53	23.1%
5	−2.04	−1.67	16.9%
10	−1.53	−1.29	22.3%
20	−1.05	−0.83	23.2%
30	−0.80	−0.46	19.2%
40	−0.58	−0.22	15.0%
50	−0.33	0.00	13.9%
60	−0.11	0.29	12.9%
70	0.15	0.54	11.2%
80	0.48	0.88	13.2%
90	0.97	1.27	18.8%
95	1.33	1.64	20.1%
97	1.73	1.94	38.5%
99	2.53	2.35	69.1%

Source: Author's calculations.

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of $t(\alpha)$ estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of $t(\alpha)$ estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Table A.4. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed mutual fund returns July 2001–July 2021 (gross returns).

Percentiles of $t(\alpha)$ estimates for the entire cross-section (gross returns)			
Percentiles	Actual	Simulated	% (Simulated < Actual)
1	−2.52	−2.60	55.4%
5	−1.66	−1.74	60.1%
10	−1.15	−1.39	69.7%
20	−0.60	−0.92	81.2%
30	−0.13	−0.58	91.4%
40	0.24	−0.25	95.8%
50	0.63	0.00	98.6%
60	1.07	0.25	99.3%
70	1.44	0.53	99.7%
80	1.78	0.87	99.5%
90	2.30	1.38	99.6%
95	2.70	1.73	98.9%
97	3.09	1.92	98.8%
99	3.51	2.48	98.4%

Source: Author's calculations.

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of t(α) estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of t(α) estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentage of simulated values that are below the actual value.

Table A.5. Percentiles of $t(\alpha)$ estimates for simulated and actual actively mutual fund returns from July 2001 to July 2021 (local vs. foreign) (net returns).

Percentiles	Actual	Simulated	% (Simulated < Actual)	Actual	Simulated	% (Simulated < Actual)
	Panel A: Local fund managers			Panel B: Foreign fund managers		
1	−2.47	−2.55	*53.4%*	−2.91	−2.64	*30.3%*
5	−1.76	−1.79	*48.9%*	−2.08	−1.70	*20.1%*
10	−1.15	−1.36	*70.5%*	−1.55	−1.32	*26.9%*
20	−0.57	−0.91	*81.0%*	−1.06	−0.85	*28.0%*
30	0.01	−0.60	*96.5%*	−0.64	−0.52	*36.8%*
40	0.52	−0.26	*99.6%*	−0.29	−0.25	*44.7%*
50	0.97	−0.01	*99.9%*	0.01	0.00	*47.7%*
60	1.23	0.27	*99.9%*	0.41	0.26	*64.4%*
70	1.58	0.52	*99.6%*	0.82	0.57	*77.5%*
80	1.96	0.84	*99.4%*	1.24	0.94	*83.8%*
90	2.43	1.35	*99.5%*	1.74	1.32	*84.9%*
95	2.89	1.71	*99.4%*	2.09	1.70	*82.7%*
97	3.09	1.94	*99.0%*	2.33	1.93	*81.6%*
99	3.62	2.38	*99.1%*	2.88	2.44	*83.6%*

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of t(α) estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of t(α) estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Table A.6. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed small & mid-cap and large cap mutual fund returns (local vs. foreign), July 2001–July 2021 (net returns).

| Percentiles	All			Local			Foreign		
	Actual	Simulated	% (Simulated < Actual)	Actual	Simulated	% (Simulated < Actual)	Actual	Simulated	% (Simulated < Actual)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Small-Cap Fund Managers									
1	−2.45	−2.42	45.2%	−1.67	−2.35	89.8%	−2.87	−2.31	17.0%
5	−1.42	−1.65	66.5%	−1.05	−1.63	87.5%	−2.11	−1.60	13.8%
10	−0.66	−1.25	92.1%	−0.38	−1.28	97.4%	−0.88	−1.24	80.0%
20	−0.10	−0.82	97.3%	0.12	−0.83	98.7%	−0.26	−0.80	91.4%
30	0.25	−0.48	98.0%	0.67	−0.51	99.9%	−0.01	−0.46	89.1%
40	0.71	−0.25	99.3%	1.07	−0.26	99.8%	0.20	−0.24	85.8%
50	1.15	0.00	99.6%	1.41	0.00	99.8%	0.59	0.01	91.6%
60	1.48	0.27	99.9%	1.68	0.23	99.9%	1.05	0.32	97.6%
70	1.78	0.52	99.8%	1.96	0.50	99.9%	1.40	0.56	97.2%
80	2.06	0.84	99.9%	2.30	0.79	99.9%	1.72	0.85	97.4%
90	2.55	1.27	99.7%	2.75	1.24	99.9%	2.07	1.29	96.2%
95	3.02	1.63	99.7%	3.21	1.59	99.9%	2.55	1.62	97.5%
97	3.21	1.88	99.4%	3.53	1.78	99.8%	2.90	1.87	98.2%
99	3.75	2.29	98.9%	4.07	2.18	99.7%	3.20	2.17	95.0%
Panel B: Large-Cap Fund Managers									
1	−2.91	−2.57	21.5%	−2.64	−2.38	28.5%	−2.85	−2.55	26.7%
5	−2.15	−1.73	15.7%	−2.30	−1.76	14.5%	−1.95	−1.67	24.1%
10	−1.71	−1.36	16.2%	−2.05	−1.41	10.4%	−1.55	−1.26	24.3%
20	−1.13	−0.88	24.1%	−1.09	−0.92	32.5%	−1.13	−0.82	23.8%
30	−0.83	−0.51	22.8%	−0.68	−0.61	38.7%	−0.88	−0.46	21.2%
40	−0.55	−0.27	22.6%	−0.47	−0.27	29.0%	−0.58	−0.23	24.2%
50	−0.22	0.00	28.4%	0.07	0.00	60.3%	−0.32	0.00	25.4%
60	0.17	0.30	42.3%	0.76	0.30	92.6%	−0.00	0.24	30.8%
70	0.73	0.57	70.5%	1.07	0.59	90.1%	0.47	0.55	49.0%
80	1.10	0.91	75.1%	1.35	0.95	84.0%	0.87	0.81	56.7%
90	1.56	1.31	72.8%	2.01	1.36	89.4%	1.40	1.30	65.9%
95	2.05	1.76	79.3%	2.28	1.68	87.5%	1.62	1.63	54.0%
97	2.28	1.95	78.1%	2.39	1.94	82.9%	2.05	1.84	66.4%
99	2.58	2.42	67.0%	2.69	2.38	75.2%	2.57	2.32	70.5%

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of t(α) estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of t(α) estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Table A.7. Percentiles of $t(\alpha)$ estimates for simulated and actual actively managed value and growth mutual fund returns (local vs. foreign), July 2001–July 2021 (net returns).

Percentiles	All			Local			Foreign		
	Actual	Simulated	% (Simulated < Actual)	Actual	Simulated	% (Simulated < Actual)	Actual	Simulated	% (Simulated < Actual)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Value funds									
1	−3.27	−2.11	*4.8%*	−1.80	−1.94	*53.8%*	−3.42	−1.83	*0.5%*
5	−2.20	−1.66	*14.1%*	−0.87	−1.47	*81.3%*	−2.94	−1.49	*1.0%*
10	−1.06	−1.32	*69.4%*	−0.55	−1.17	*81.9%*	−2.00	−1.15	*8.2%*
20	−0.69	−0.92	*65.5%*	0.30	−0.82	*93.1%*	−0.97	−0.77	*32.2%*
30	−0.35	−0.60	*69.1%*	0.90	−0.51	*97.5%*	−0.76	−0.44	*28.4%*
40	0.17	−0.27	*88.3%*	1.14	−0.27	*95.8%*	−0.65	−0.21	*19.5%*
50	0.66	0.00	*95.4%*	1.21	−0.01	*93.8%*	−0.36	0.00	*21.6%*
60	1.12	0.27	*97.0%*	1.32	0.17	*91.6%*	0.08	0.24	*35.5%*
70	1.26	0.56	*92.3%*	1.69	0.40	*94.0%*	0.17	0.55	*24.2%*
80	1.64	0.84	*93.1%*	2.02	0.70	*95.0%*	0.42	0.86	*23.8%*
90	2.11	1.28	*94.3%*	2.42	1.02	*96.1%*	1.30	1.19	*60.0%*
95	2.43	1.60	*93.3%*	2.69	1.35	*96.4%*	1.62	1.51	*62.9%*
97	2.63	1.77	*92.8%*	3.08	1.55	*97.9%*	1.81	1.69	*62.6%*
99	3.28	2.04	*96.2%*	3.40	1.81	*98.2%*	2.13	1.90	*67.8%*
Panel B: Growth funds									
1	−2.38	−2.39	*44.1%*	−2.78	−2.42	*26.3%*	−2.38	−2.26	*37.5%*
5	−1.60	−1.65	*51.0%*	−1.28	−1.75	*83.8%*	−1.70	−1.62	*41.1%*
10	−1.27	−1.27	*47.1%*	−1.13	−1.36	*69.3%*	−1.30	−1.27	*45.5%*
20	−0.92	−0.86	*38.9%*	−0.76	−0.90	*62.8%*	−0.93	−0.86	*40.1%*
30	−0.54	−0.52	*45.4%*	−0.53	−0.59	*53.8%*	−0.54	−0.55	*45.6%*
40	−0.22	−0.28	*50.3%*	0.03	−0.28	*80.2%*	−0.23	−0.25	*51.8%*
50	0.24	0.00	*71.2%*	0.31	0.00	*81.6%*	0.18	0.00	*66.6%*
60	0.59	0.27	*78.7%*	0.66	0.27	*87.2%*	0.59	0.27	*76.1%*
70	0.95	0.56	*83.1%*	0.95	0.56	*86.2%*	0.95	0.53	*81.2%*
80	1.34	0.87	*86.8%*	1.17	0.88	*78.1%*	1.35	0.79	*84.5%*
90	1.74	1.28	*85.0%*	1.83	1.31	*87.9%*	1.72	1.23	*82.4%*
95	2.05	1.64	*82.4%*	2.13	1.66	*85.1%*	2.04	1.57	*81.1%*
97	2.28	1.86	*83.0%*	2.47	1.89	*88.6%*	2.25	1.81	*81.4%*
99	2.63	2.28	*79.3%*	2.76	2.19	*84.2%*	2.57	2.17	*76.8%*

Note(s): The leftmost column of the table shows the respective percentile. The column next to it, "Actual," shows the percentiles of $t(\alpha)$ estimates of the actual cross-section. The "Simulated" column shows the average of all 10,000 percentiles of $t(\alpha)$ estimates of the different iterations of the bootstrap simulation. The rightmost column depicts the percentages of simulated values that are below the actual value.

Chinese Managers with Kenneth French Emerging Markets factors + Momentum
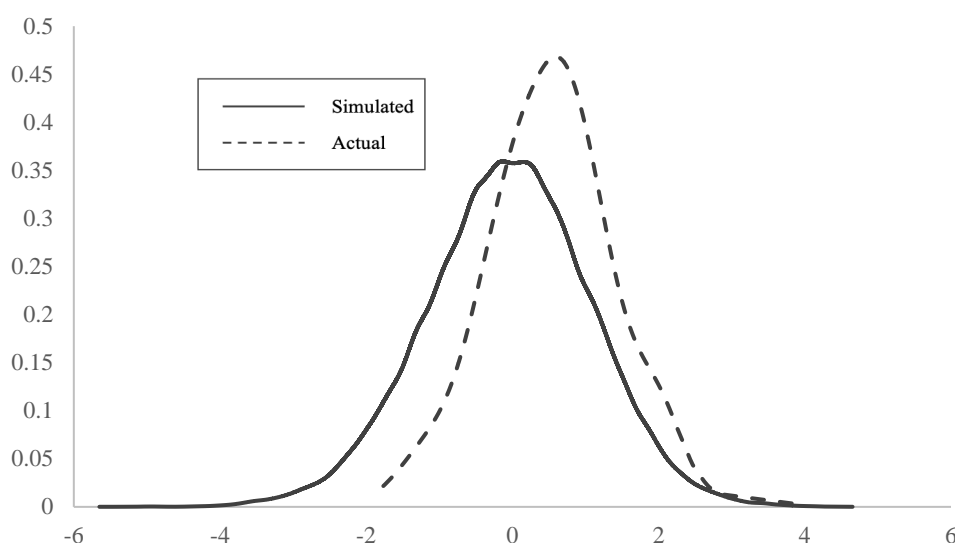
Foreign Managers with Kenneth French Emerging Markets factors + Momentum
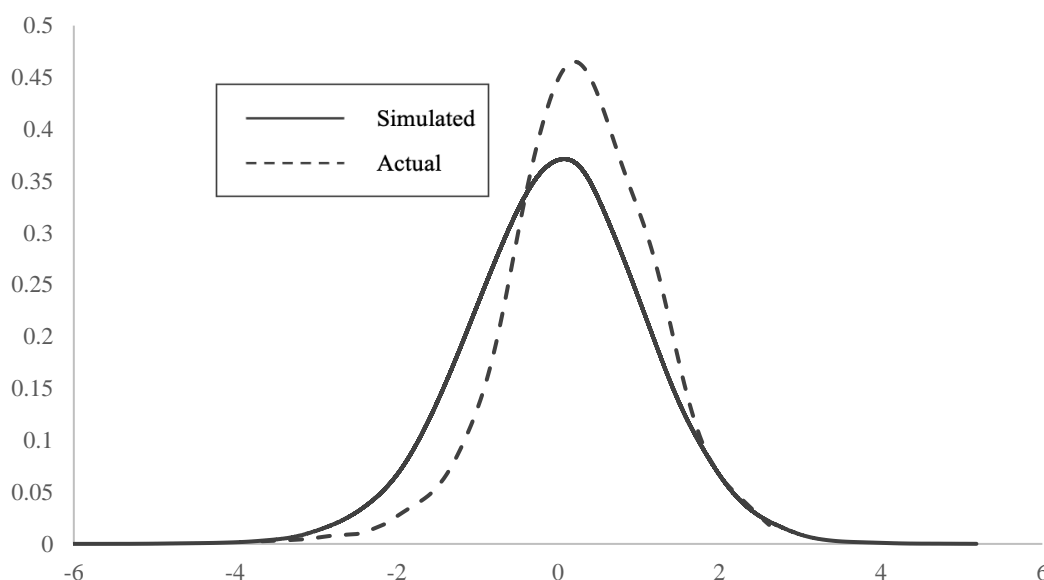

Figure A.1. Kernel density function of simulated and actual $t(\alpha)$ for local versus foreign cross-section of mutual funds including the Momentum factor in the benchmark (net returns).

When including the Emerging Markets Momentum factor from the Kenneth French library to the performance evaluation benchmark, the differences in skill between Chinese and foreign manager remain, while slightly less noticeable. This result indicates a higher exposure to the Momentum factor of Chinese managers compared to their foreign equivalents.