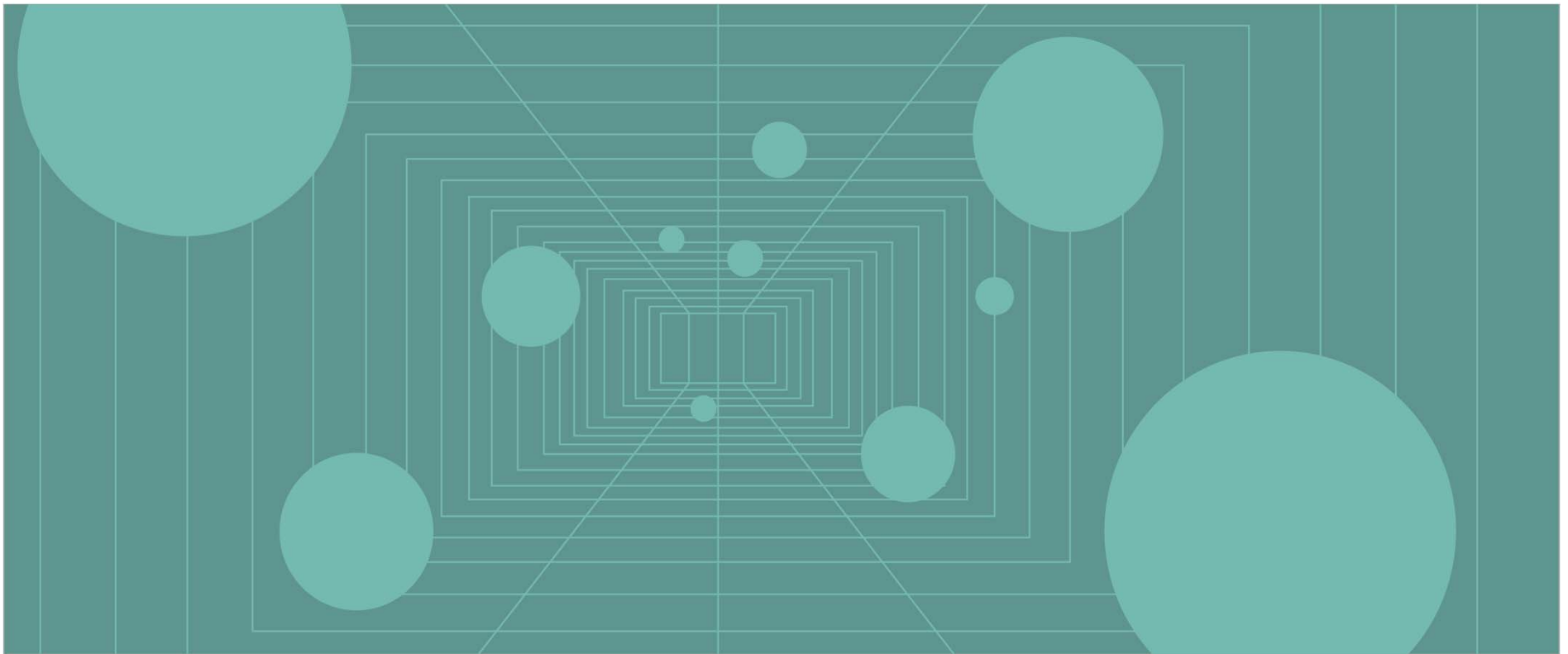


EMERGING MARKETS EQUITY MANAGER PERFORMANCE

ANALYSIS OF 2020 AND PERFORMANCE SINCE 2000



Summary Observations

- Slightly more than half of active emerging markets equity managers underperformed the MSCI Emerging Markets Index (gross of fees) in 2020—the fourth time the median manager has underperformed the benchmark out of the last five years. The median manager trailed the index by 30 basis points (bps). After applying a fee proxy of 90 bps, 53% of managers underperformed. However, 15% of managers outperformed the index by more than 1,000 bps, representing significant value-add.
- Country bets can have a large impact on relative performance. The median manager held a more than 750 bp underweight to China at the start of 2020, which was likely a headwind to manager returns since China outperformed the broader index by a whopping 1,119 bps in USD terms. However, managers implementing out-of-benchmark bets to the United States likely benefited as US equities bested the MSCI Emerging Markets Index.
- Managers' sector allocations also can differ substantially from the index. The median manager held moderate overweight position to the top three performing sectors in 2020, providing a tailwind for manager performance relative to the benchmark; however, managers were heavily underweight other top-performing sectors—communication services and materials—creating a net drag on performance.

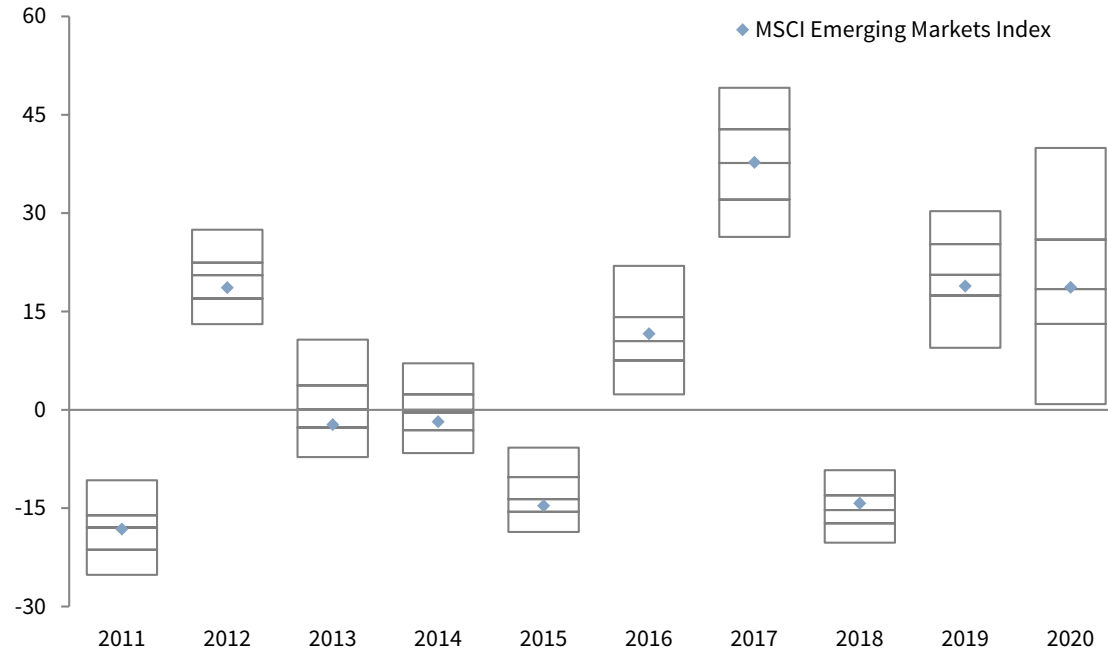
Summary Observations (continued)

- Active managers tend to make off-benchmark bets and hold some cash, so three factors can create a better environment for active management: outperformance of small-cap stocks, outperformance of stocks in frontier markets, and outperformance of cash over the index. Just one of these factors were present in 2020—the MSCI Emerging Markets Small Cap Index topped the MSCI Emerging Markets Index by 98 bps.
- Persistence in manager performance is rare, and movement among performance quintiles is fairly common. Of the top-performing quintile of emerging markets equity managers in the 2011–15 period, 15% placed in the bottom quintile over the subsequent five-year period (2016–20). Similarly, 15% of bottom-performing managers in the initial five-year period were in the top quintile in the most recent five-year period.

Slightly more than half of managers underperformed the index in 2020

EMERGING MARKETS EQUITY MANAGERS ANNUAL RETURNS BY QUANTILES

2011–20 • Percent (%)



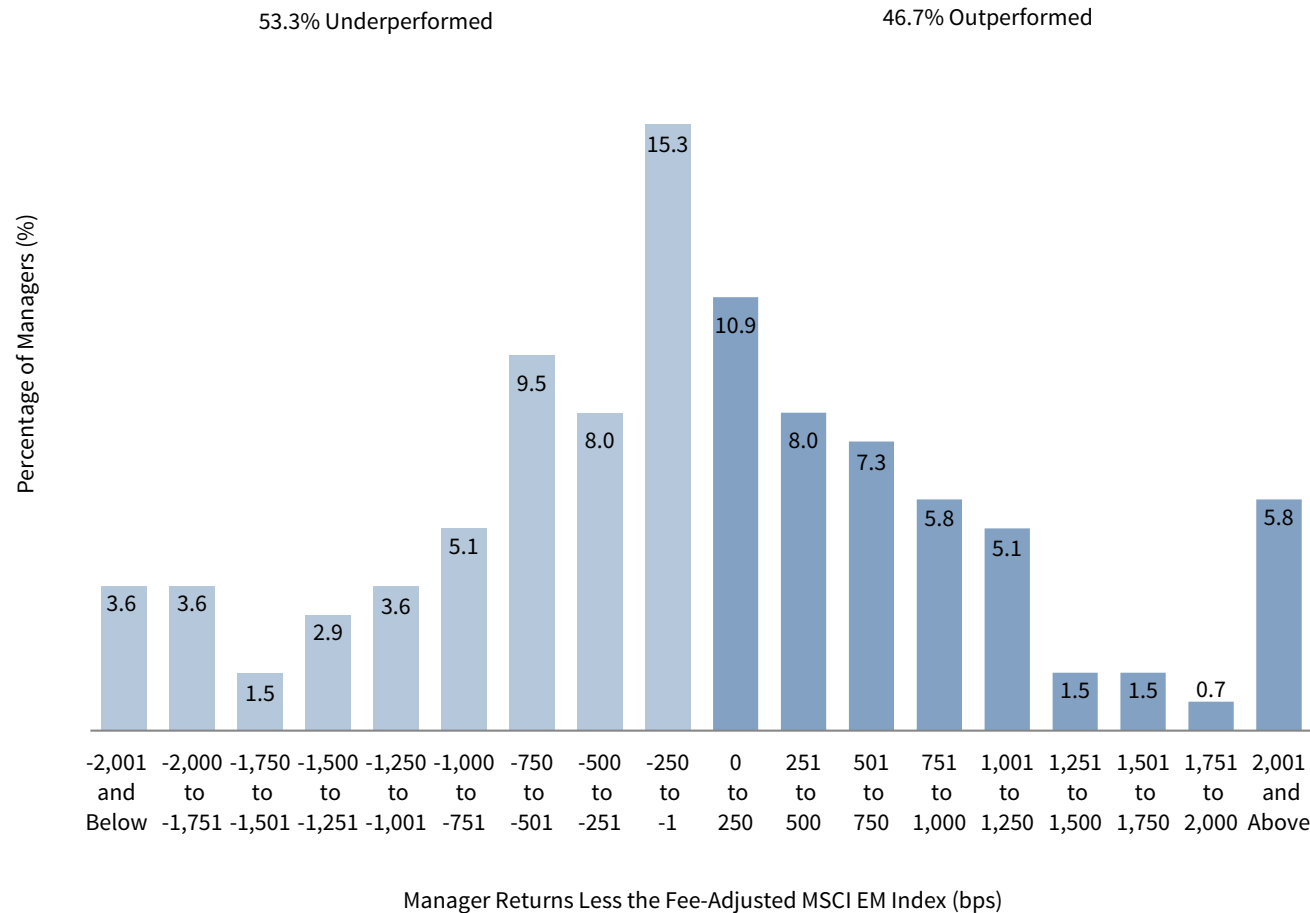
On a median basis, active managers trailed the MSCI Emerging Markets Index for the fourth time in five years, after having outperformed in six consecutive years from 2010 to 2015.

5th Percentile	-10.8	27.5	10.7	7.1	-5.8	21.9	49.1	-9.2	30.3	39.9
25th Percentile	-16.1	22.4	3.7	2.4	-10.3	14.2	42.8	-13.0	25.3	26.0
Median	-17.9	20.5	0.1	-0.4	-13.6	10.5	37.7	-15.3	20.6	18.4
75th Percentile	-21.3	17.0	-2.7	-3.1	-15.6	7.5	32.0	-17.3	17.4	13.1
95th Percentile	-25.2	13.1	-7.2	-6.6	-18.6	2.4	26.4	-20.3	9.5	0.9
MSCI EM Index	-18.2	18.6	-2.3	-1.8	-14.6	11.6	37.8	-14.2	18.9	18.7
# of Managers	108	122	144	152	162	167	163	166	168	137
% Outperforming	51.9	68.0	71.5	65.8	63.0	40.7	49.7	38.0	63.1	49.6
% Underperforming	48.1	32.0	28.5	34.2	37.0	59.3	50.3	62.0	36.9	50.4

Relative to the fee-adjusted index, 47% of managers outperformed

MANAGER RETURNS RELATIVE TO THE FEE-ADJUSTED MSCI EMERGING MARKETS INDEX

Calendar Year 2020 • *n* = 137

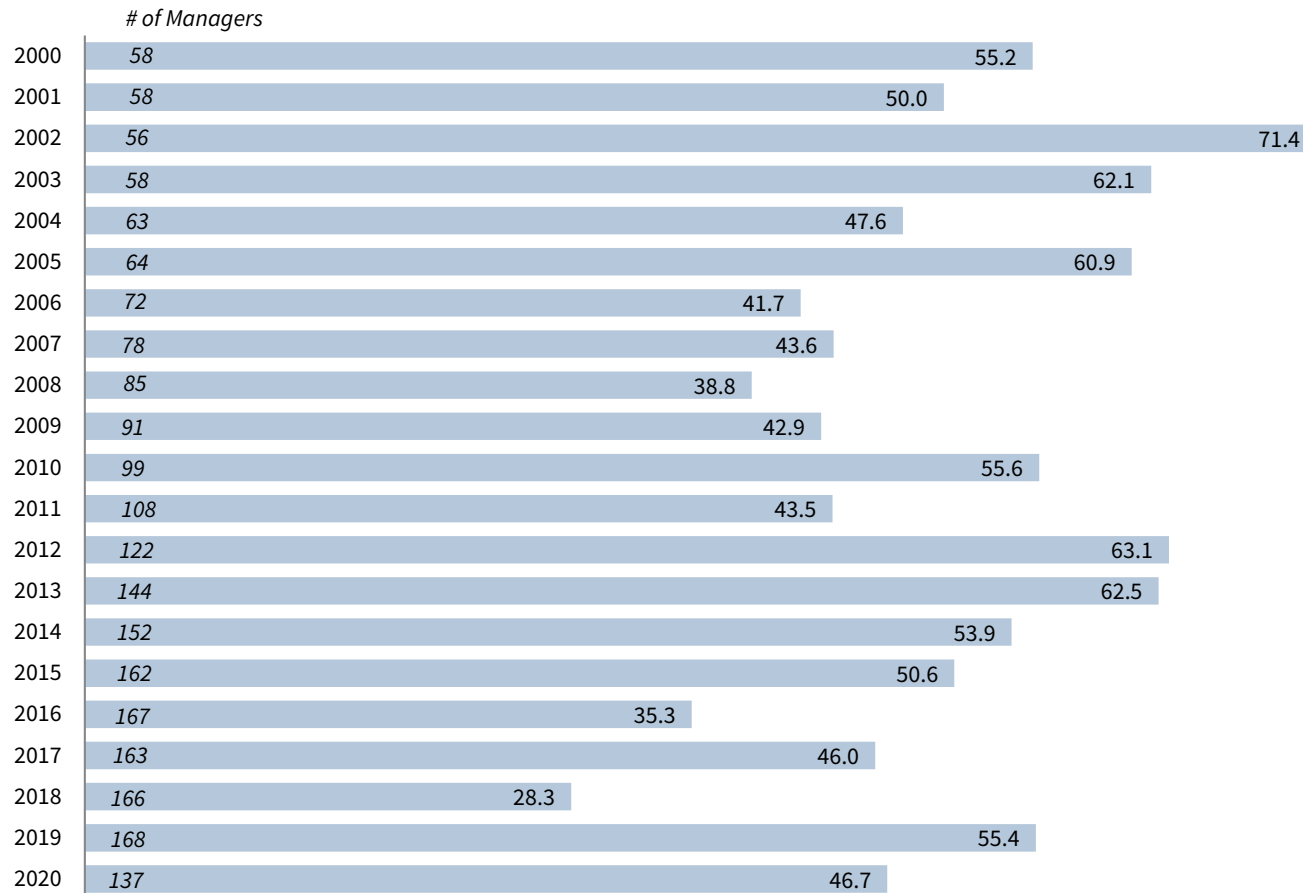


After adjusting for fees, just 47% of managers outperformed the index. However, 15% of managers added significant value, topping the index by more than 1,000 bps.

Active manager outperformance is cyclical

PERCENTAGE OF EMERGING MARKETS EQUITY MANAGERS OUTPERFORMING THE FEE-ADJUSTED MSCI EMERGING MARKETS INDEX

2000-20



Emerging markets equity managers underperformed the fee-adjusted index in four of the past five years. This is in contrast to the years immediately following the Global Financial Crisis, when managers outperformed five of six years from 2010 through 2015.

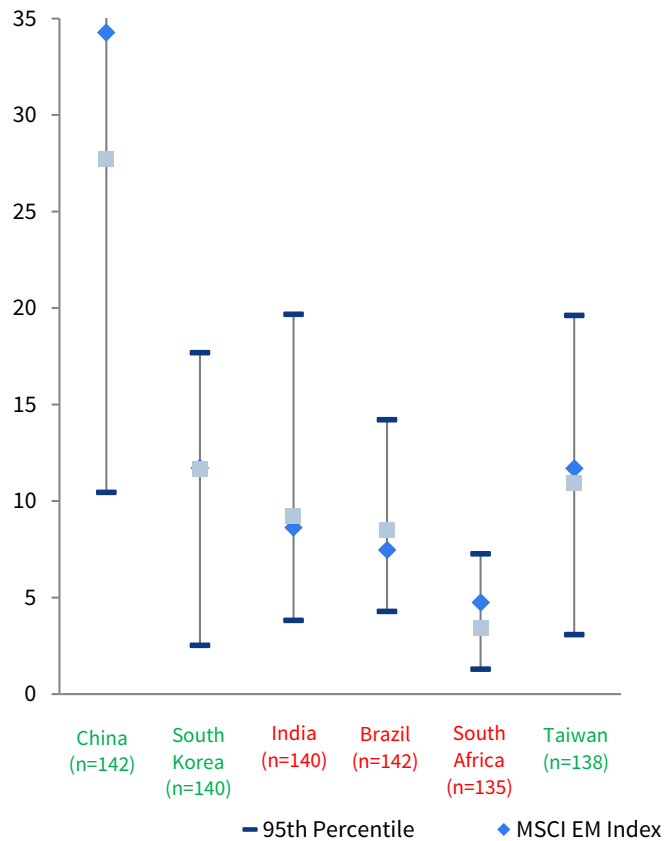
Since 2000, the median manager has underperformed as many years as outperformed.

Country bets can significantly affect relative performance

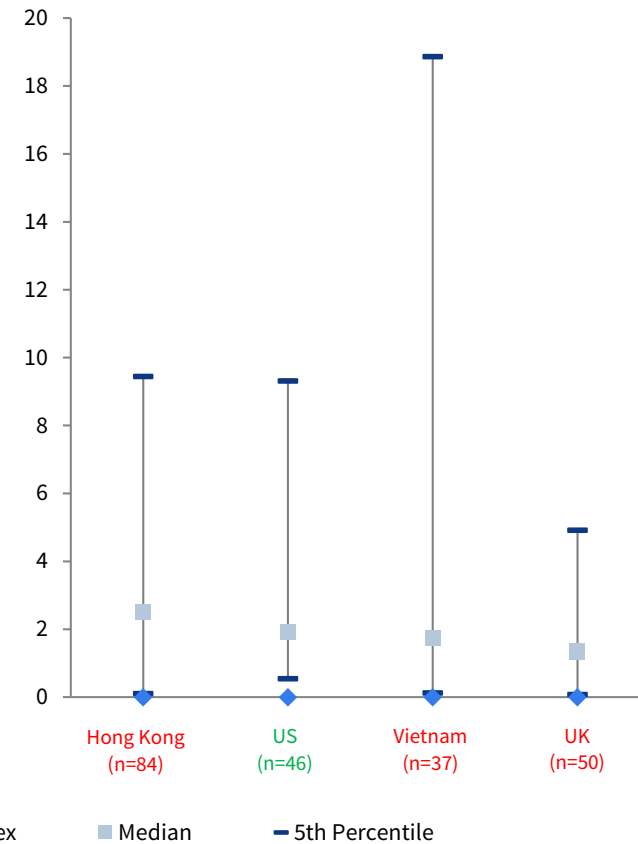
EMERGING MARKETS EQUITY MANAGERS' COUNTRY ALLOCATIONS VS THE MSCI EAFE INDEX

n = 152

Non-Zero Manager Allocations to MSCI Emerging Markets Countries with > 4% Weight



Non-Zero Manager Allocations to Off-Benchmark Countries Where >2% Managers Have Allocations



The median manager's underweight to China was a headwind in 2020, as the country outperformed the MSCI Emerging Markets Index by a whopping 1,119 bps.

Sources: Cambridge Associates LLC, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties. Notes: Countries are sorted by median manager weight. A country name in red indicates that the country underperformed the MSCI EM Index in 2020, while green country names indicate outperformance. The chart only includes data for 152 managers that provided geographic allocation as of year-end 2019. Index weights represent year-end geographic allocations of the MSCI EM Index. The n provided for each country represents the total number of products exposed to a given country as of year-end 2018, and percentile, median, and average figures are calculated only from products with exposure to the country shown. Cambridge Associates LLC's (CA) manager universe statistics are derived from CA's proprietary Investment Manager Database. Manager that do not report in US dollars, exclude cash reserves from reported total returns, or have less than \$50 million in product assets are excluded.

Managers' different sector allocations can affect relative performance

EMERGING MARKETS EQUITY MANAGERS' MEDIAN SECTOR ALLOCATIONS VERSUS INDEX WEIGHT

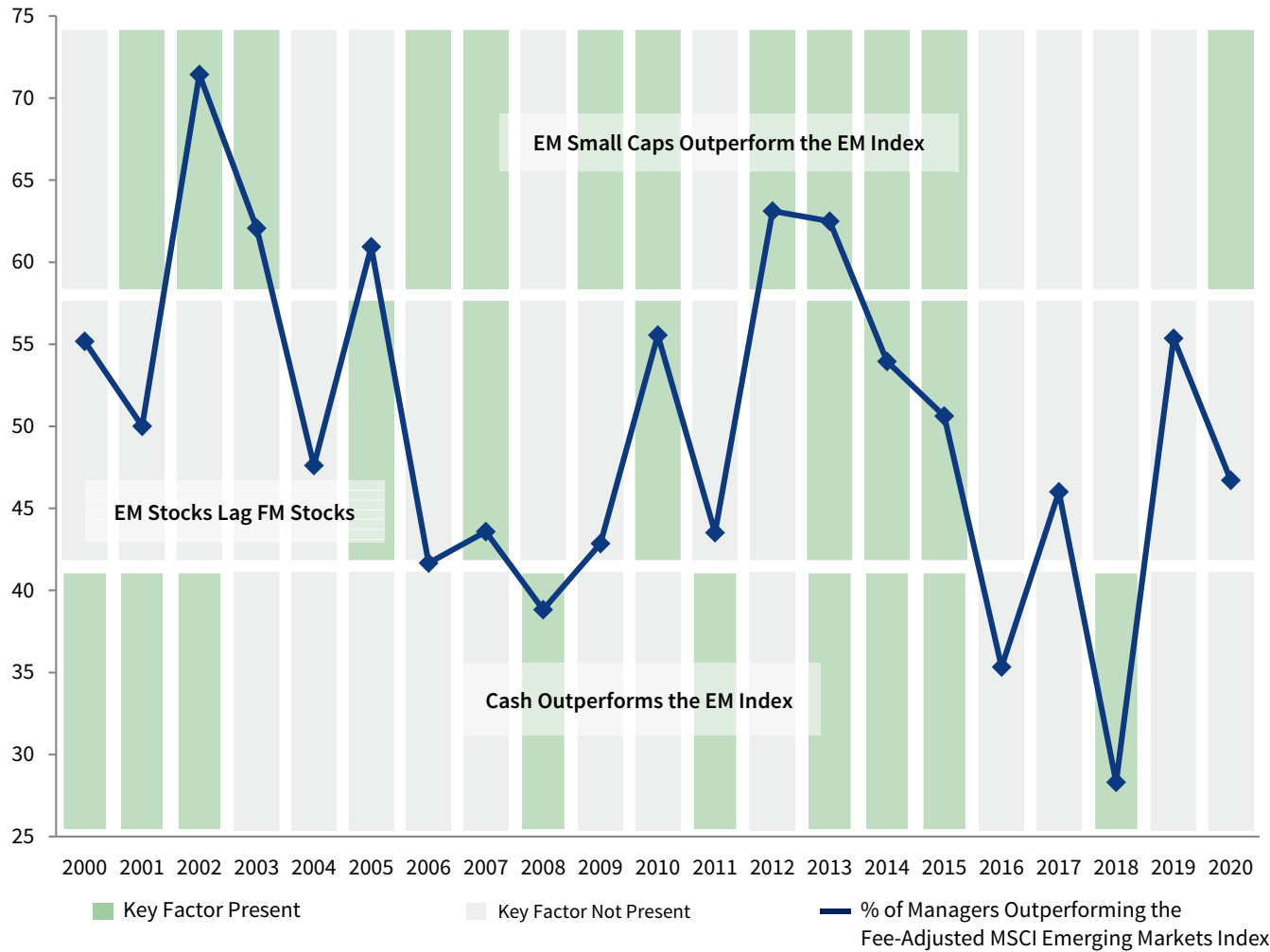
Percent (%) • *n* = 155

	Manager Median Underweight/Overweight vs Index (bps)		12/31/2019 Index Weight (%)	CY 2020 Index Returns	Net Allocation Effect (+/-)
	Underweight vs Index	Overweight vs Index			
Utilities	-79		2.6	-4.8	+
Real Estate	-54		3.0	-16.7	+
Materials	-154		7.4	25.3	-
IT		142	15.7	60.9	+
Industrials		116	5.3	5.3	-
Healthcare		20	2.8	52.9	+
Financials	-38		24.2	-7.8	+
Energy	-201		7.4	-15.0	+
Con Stap		19	6.3	11.0	-
Con Disc		66	14.2	36.8	+
Comm Svcs *	-242		11.0	27.7	-
			MSCI EM	18.7	

Sector allocation bets can have an impact on performance. In 2020, the median manager allocated moderate overweights to the top three performing sectors, providing a tailwind to performance. However, other top-performing sectors—communication services and materials—were heavily underweighted, creating a net drag on manager performance relative to the benchmark.

The environment was not favorable for active managers in 2020

PERCENTAGE OF MANAGERS OUTPERFORMING FEE-ADJUSTED MSCI EMERGING MARKETS INDEX
2000-20

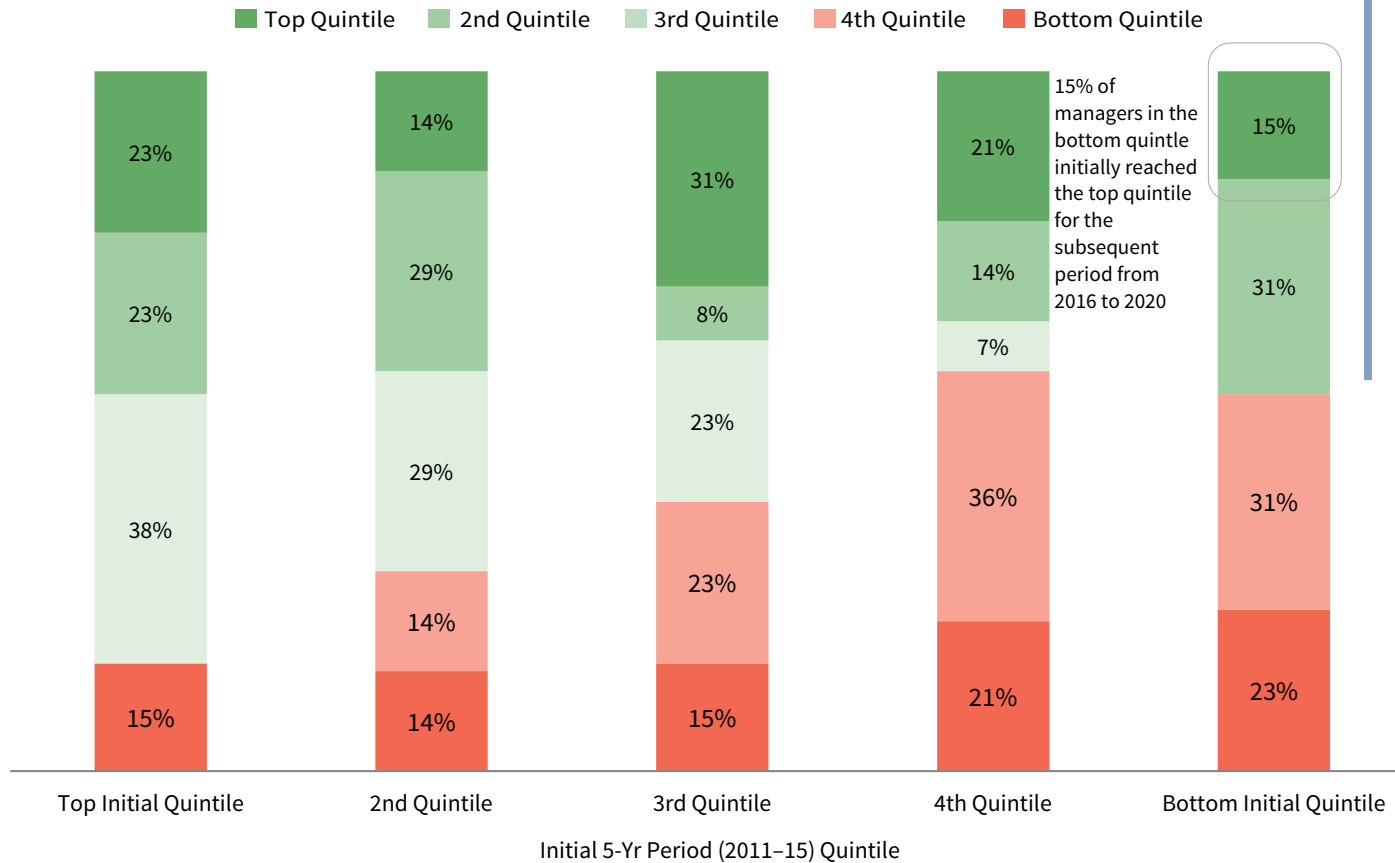


Many factors contribute to active manager out-performance, but the presence of three key factors can create a more favorable environment for active management in general. Only one of these factors was observed in 2020, marking the fifth consecutive year where one or fewer of these factors were present.

Movement between top and bottom quintiles is fairly common

ANALYSIS OF EMERGING MARKETS EQUITY MANAGER RETURNS BY QUINTILE OVER FIVE-YEAR PERIODS 2011–20 • n = 67

Percent of Managers in Subsequent 5-Yr Period (2016–20) Quintile



Past performance is not a guarantee of future results—15% of top-performing managers in the initial five-year period fell to the bottom quintile in the subsequent five-year period; similarly, 15% of bottom-performing managers in the initial five-year period reached the top quintile in the most recent five-year period.

APPENDIX: YEAR-BY-YEAR ANALYSIS OF KEY FACTORS CONTRIBUTING TO A MORE OR LESS FAVORABLE ENVIRONMENT FOR ACTIVE MANAGEMENT



Small company outperformance is typically a consistent tailwind for active managers

In 2020, small caps outperformed large-cap equivalents, but the median manager trailed the benchmark MSCI Emerging Markets Index—the first time the median manager underperformed while small caps bested large caps since 2009

ASSESSING THE IMPACT OF CAPITALIZATION BIAS IN ACTIVE MANAGER PORTFOLIOS

2000–20

Active Managers Have Outperformed the MSCI EM Index 55% of the Time When the Index Has Beaten the MSCI EM Small Cap Index ...

Year	Total Return (%)				MSCI EM Minus MSCI EM SC (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	MSCI EM SC	Median EM Equity Manager	<i>n</i>		
2016	11.6	2.6	10.5	167	9.0	-1.1
2011	-18.2	-27.0	-17.9	108	8.8	0.2
2019	18.9	11.9	20.6	168	7.0	1.7
2008	-53.2	-58.1	-53.9	85	4.9	-0.7
2000	-30.6	-35.1	-28.5	58	4.5	2.1
2018	-14.2	-18.3	-15.3	166	4.1	-1.0
2005	34.5	31.0	36.4	64	3.6	1.9
2017	37.8	34.2	37.7	163	3.5	-0.1
2004	26.0	24.7	26.1	64	1.3	0.1

Mean 1.4 -3.8 1.7 5.2 **0.3**

... and Outperformed the MSCI EM Index 83% of the Time When the Index Lagged the MSCI EM Small Cap Index

Year	Total Return (%)				MSCI EM Minus MSCI EM SC (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	MSCI EM SC	Median EM Equity Manager	<i>n</i>		
2006	32.6	33.1	32.9	72	-0.5	0.4
2020	18.7	19.7	18.4	137	-1.0	-0.3
2007	39.8	42.3	39.9	78	-2.5	0.2
2001	-2.4	0.4	-1.4	58	-2.8	1.0
2014	-1.8	1.3	-0.4	152	-3.2	1.4
2013	-2.3	1.3	0.1	144	-3.6	2.4
2003	56.3	60.2	58.4	58	-3.9	2.1
2002	-6.0	-2.1	-3.5	56	-3.9	2.5
2012	18.6	22.6	20.5	122	-4.0	1.9
2015	-14.6	-6.6	-13.6	162	-8.0	1.0
2010	19.2	27.5	20.4	99	-8.3	1.2
2009	79.0	114.3	78.9	91	-35.3	-0.1

Mean 19.8 26.2 20.9 -6.4 **1.1**

Off-benchmark holdings can benefit managers

The median manager has consistently outperformed when frontier equities outperform emerging markets. In 2020, frontier underperformed, and the median active managers trailed the index

ASSESSING THE IMPACT OF FRONTIER MARKETS EQUITIES ON ACTIVE MANAGER PERFORMANCE

2003–20

Active Managers Have Outperformed the MSCI EM Index 50% of the Time When the Index Has Beaten the MSCI Frontier Index ...

Year	Total Return (%)				MSCI EM Minus MSCI FM (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	MSCI Frontier	Median EM Equity Manager	<i>n</i>		
2009	79.0	11.7	78.9	91	67.3	-0.1
2006	32.6	-8.9	32.9	72	41.4	0.4
2020	18.7	1.7	18.4	137	17.0	-0.3
2003	56.3	43.6	58.4	58	12.7	2.1
2012	18.6	9.2	20.5	122	9.4	1.9
2016	11.6	3.2	10.5	167	8.4	-1.1
2017	37.8	32.3	37.7	163	5.4	-0.1
2004	26.0	22.7	26.1	63	3.3	0.2
2018	-14.2	-16.2	-15.3	166	2.0	-1.0
2008	-53.2	-54.1	-53.9	85	0.9	-0.7
2019	18.9	18.3	20.6	168	0.5	1.7
2011	-18.2	-18.4	-17.9	108	0.2	0.2
Mean	17.8	3.8	18.1		14.1	0.3

... and Outperformed the MSCI EM Index Every Year When the Index Lagged the MSCI Frontier Index

Year	Total Return (%)				MSCI EM Minus MSCI FM (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	MSCI Frontier	Median EM Equity Manager	<i>n</i>		
2015	-14.6	-14.1	-13.6	162	-0.5	1.0
2007	39.8	42.1	39.9	78	-2.3	0.2
2010	19.2	24.2	20.4	99	-5.0	1.2
2014	-1.8	7.2	-0.4	152	-9.0	1.4
2013	-2.3	26.3	0.1	144	-28.6	2.4
2005	34.5	72.7	36.4	64	-38.2	1.9
Mean	12.5	26.4	13.8		-13.9	1.3

Cash outperformance helps active managers top their benchmark...

...But equities exceeded the 91-Day T-Bill in 2020, creating a headwind for managers with excess cash to outperform the index

ASSESSING THE IMPACT OF CASH DRAG ON ACTIVE MANAGER PERFORMANCE

2000-20

Active Managers Have Beaten the MSCI Emerging Markets Index 67% of the Time When the Index Has Beaten the 91-Day T-Bill ...

Year	Total Return (%)				MSCI EM Minus T-Bill (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	91-Day T-Bill	Median EM Equity Manager	<i>n</i>		
2009	79.0	0.2	78.9	91	78.8	-0.1
2003	56.3	1.1	58.4	58	55.1	2.1
2017	37.8	0.9	37.7	163	36.9	-0.1
2007	39.8	5.0	39.9	78	34.8	0.2
2005	34.5	3.1	36.4	64	31.5	1.9
2006	32.6	4.8	32.9	72	27.7	0.4
2004	26.0	1.3	26.1	63	24.6	0.2
2010	19.2	0.1	20.4	99	19.1	1.2
2012	18.6	0.1	20.5	122	18.5	1.9
2020	18.7	0.7	18.4	137	18.0	-0.3
2019	18.9	2.3	20.6	168	16.6	1.7
2016	11.6	0.3	10.5	167	11.3	-1.1
Mean	32.7	1.7	33.4		31.1	0.7

... And Beaten the MSCI Emerging Markets Index 78% of the Time When the Index Has Lagged the 91-Day T-Bill

Year	Total Return (%)				MSCI EM Minus T-Bill (ppts)	Mgr Value Added vs MSCI EM (ppts)
	MSCI EM	91-Day T-Bill	Median EM Equity Manager	<i>n</i>		
2014	-1.8	0.0	-0.4	152	-1.9	1.4
2013	-2.3	0.1	0.1	144	-2.3	2.3
2001	-2.4	4.4	-1.4	58	-6.8	0.9
2002	-6.0	1.8	-3.5	56	-7.8	2.5
2015	-14.6	0.1	-13.6	162	-14.7	1.0
2018	-14.2	1.9	-15.3	166	-16.1	-1.0
2011	-18.2	0.1	-17.9	108	-18.3	0.2
2000	-30.6	6.2	-28.5	58	-36.8	2.1
2008	-53.2	2.1	-53.9	85	-55.2	-0.7
Mean	-15.9	1.8	-14.9		-17.8	1.0



**CAMBRIDGE
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