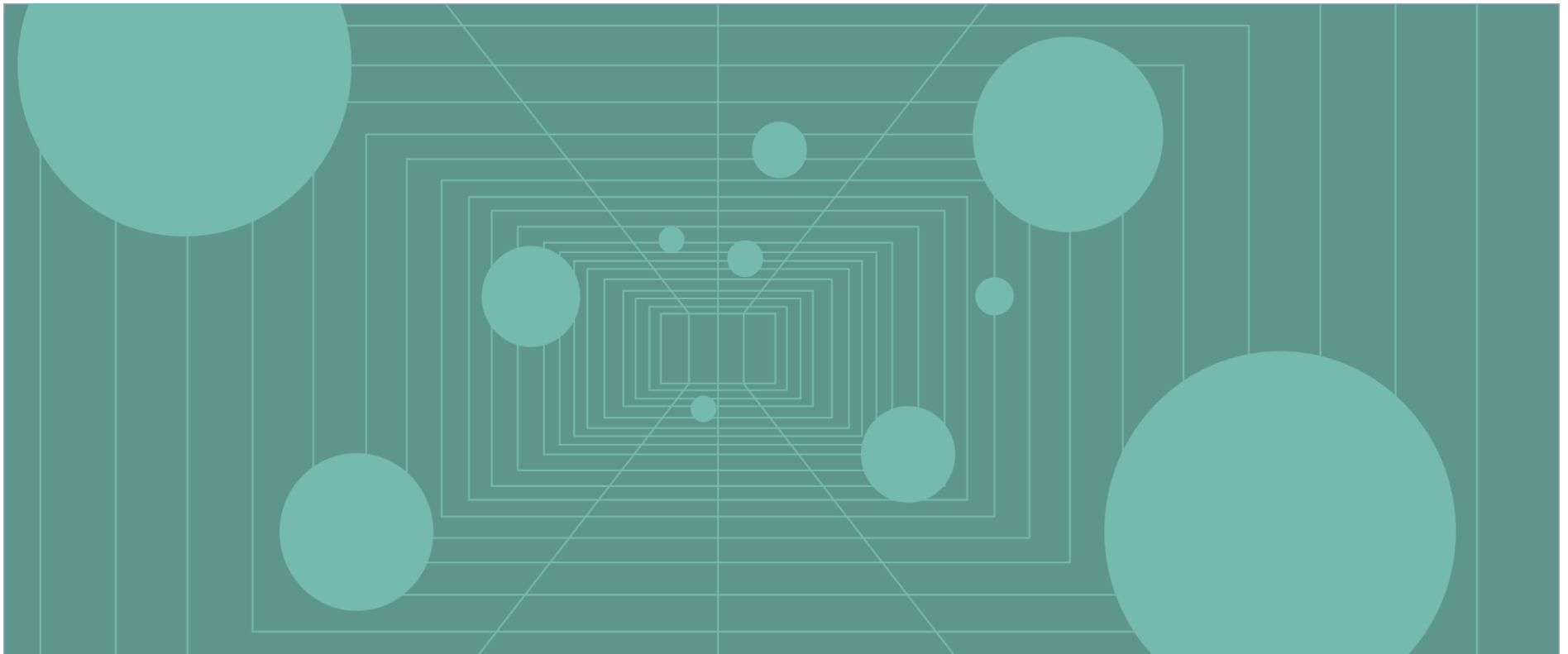


GLOBAL EQUITY MANAGER PERFORMANCE

ANALYSIS OF 2018 AND PERFORMANCE SINCE 2000



Summary Observations

- In 2018, 52% of active global managers underperformed the MSCI World Index gross of fees, with the median manager underperforming by 20 basis points (bps). This marked a reversal from active managers' strong outperformance in 2017. After incorporating a fee proxy of 70 bps, 57% of active managers underperformed the index, but 22% outperformed by more than 250 bps, representing significant value-add. Post-2007, the percentage of managers outperforming has been lower than during the 2000–07 period. On average, about 50% of managers outperformed the fee-adjusted index from 2008 to 2018, versus an average of 58% from 2000 to 2007.
- In 2018, growth was the only style that beat the broad index, with the median growth manager besting the MSCI World Index by 85 bps. However, the median growth manager underperformed versus the MSCI World Growth Index by 112 bps. Value struggled; the median value manager underperformed the headline index by about 222 bps, as well as the MSCI World Value Index by 15 bps. Growth managers have been in favor recently and have the strongest returns over one-, three-, and five-year periods.
- Managers' sector allocations can differ substantially from the index. Healthcare and utilities were the only two sectors in the black for the year, yet managers held underweight positions to each of those sectors on a median basis. Managers also underweighted consumer staples and real estate, which each outperformed the broader index. Among manager overweight positions, the industrials sector dragged, underperforming the broader index by 583 bps.

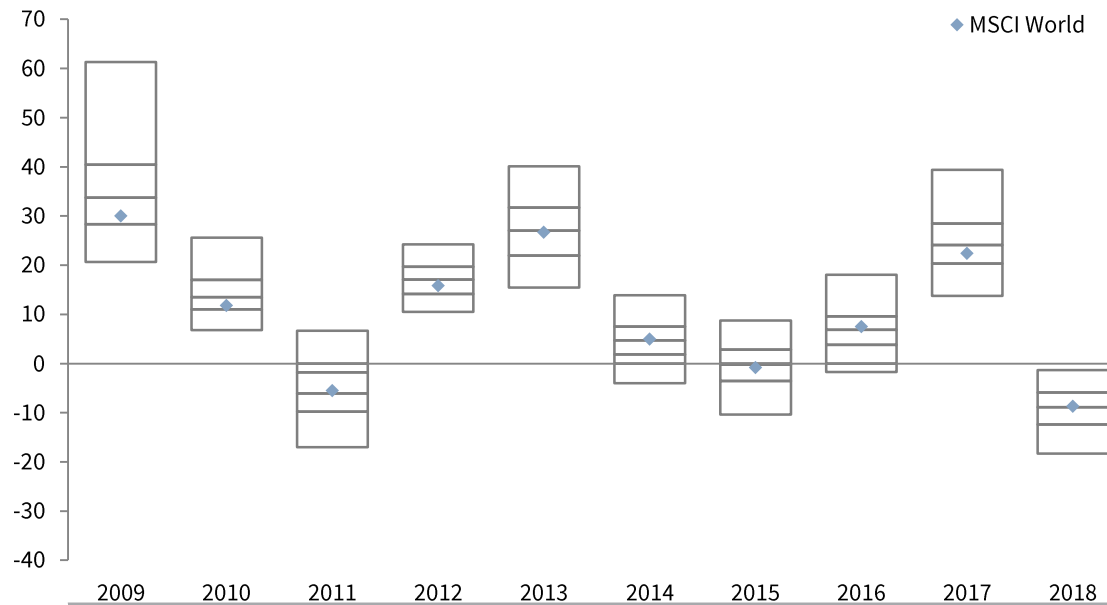
Summary Observations (continued)

- US equities are by far the largest weight in MSCI World; when MSCI World outperforms the US, managers have consistently outperformed as they tend to be underweight US equities. US equities outperformed the MSCI World Index by 367 bps in 2018, yet managers were nearly 1,000 bps underweight to the US, which may have contributed to relative underperformance. Of the index's remaining five largest country weights, managers were only overweight France, which underperformed the MSCI World Index in USD terms.
- Exposure to emerging markets has historically provided a tailwind to active global equity managers, but in 2018, the MSCI Emerging Markets Index underperformed the MSCI World Index by nearly 600 bps, impacting global managers with emerging markets exposure. China, where the largest number of managers had exposure and where average and median exposure was highest, underperformed the MSCI World Index in USD terms by more than 1,000 bps, creating a drag on returns. The remaining three countries where more than 30% of managers had exposure were South Korea, Brazil, and India, where performance was mixed.
- Persistence in manager performance is rare, and movement among performance quintiles is fairly common. Only 11% of top quintile-performing managers in the five-year period from 2009 to 2013 remained in the top quintile during the five-year period from 2014 to 2018, while nearly half of top quintile managers in the initial period subsequently moved into the bottom two quintiles.

52% of managers underperformed the index in 2018

GLOBAL EQUITY MANAGER ANNUAL RETURNS BY QUANTILES

2009-18 • Percent (%)



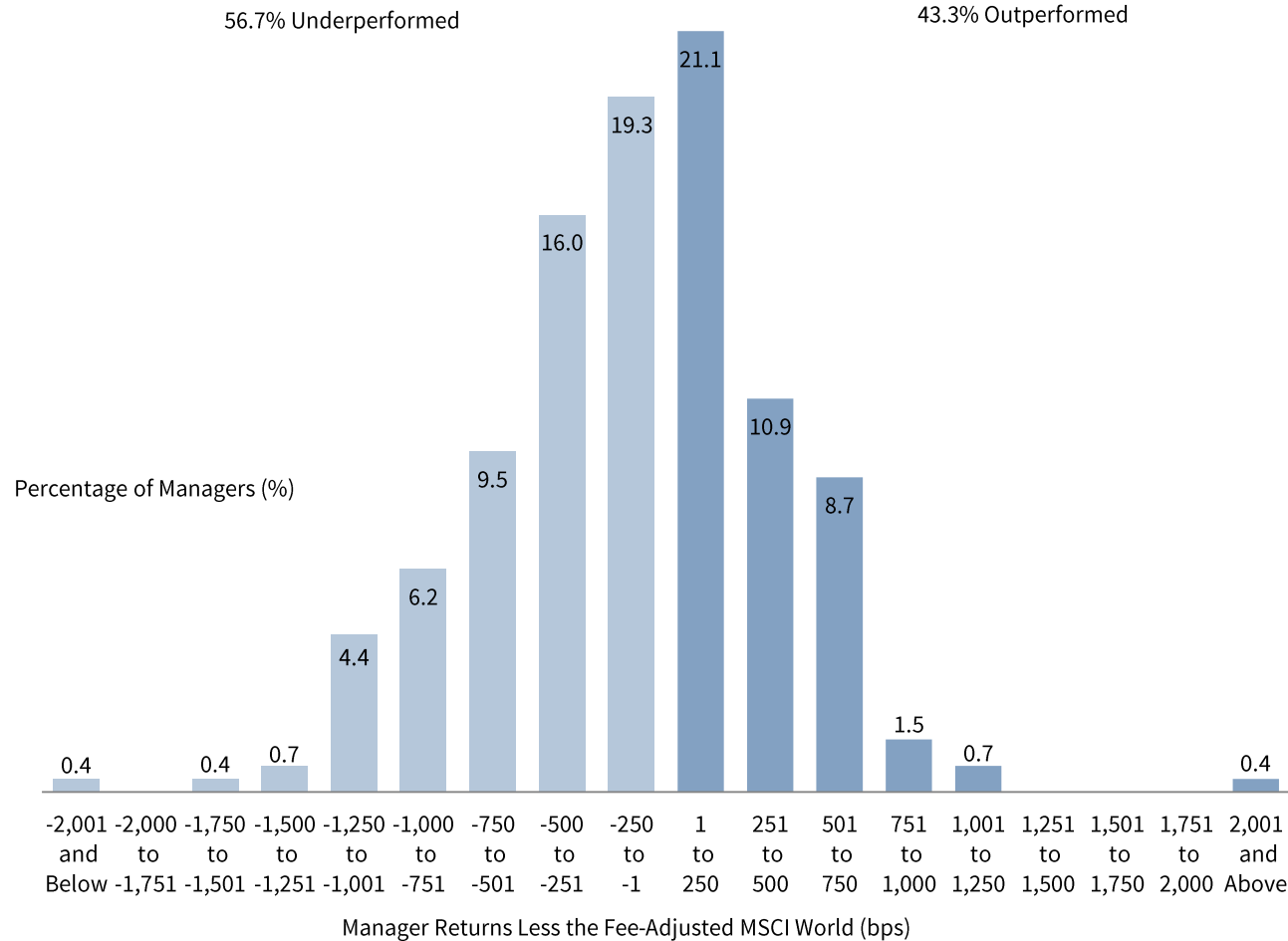
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
5th Percentile	61.3	25.6	6.7	24.2	40.1	13.9	8.7	18.0	39.4	-1.3
25th Percentile	40.5	17.0	-1.8	19.7	31.7	7.5	2.8	9.6	28.5	-5.9
Median	33.7	13.5	-6.1	17.1	27.0	4.7	-0.2	6.9	24.1	-8.9
75th Percentile	28.3	11.0	-9.8	14.1	22.0	1.9	-3.6	3.8	20.4	-12.4
95th Percentile	20.6	6.8	-17.0	10.5	15.5	-4.0	-10.4	-1.7	13.8	-18.3
MSCI World	30.0	11.8	-5.5	15.8	26.7	4.9	-0.9	7.5	22.4	-8.7
# of Managers	237	255	273	277	298	311	324	320	316	275
% Outperforming	64.6	71.8	47.6	59.2	52.0	47.9	54.9	43.8	60.8	47.6
% Underperforming	35.4	28.2	52.4	40.8	48.0	52.1	45.1	56.3	39.2	52.4

The majority of active managers underperformed the index in 2018, a reversal from 2017. Value managers, which represent a larger subset of the sample, lagged the broader index, while growth outperformed.

Adjusted for fees, 57% of managers underperformed the index in 2018

MANAGER RETURNS RELATIVE TO THE FEE-ADJUSTED MSCI WORLD INDEX

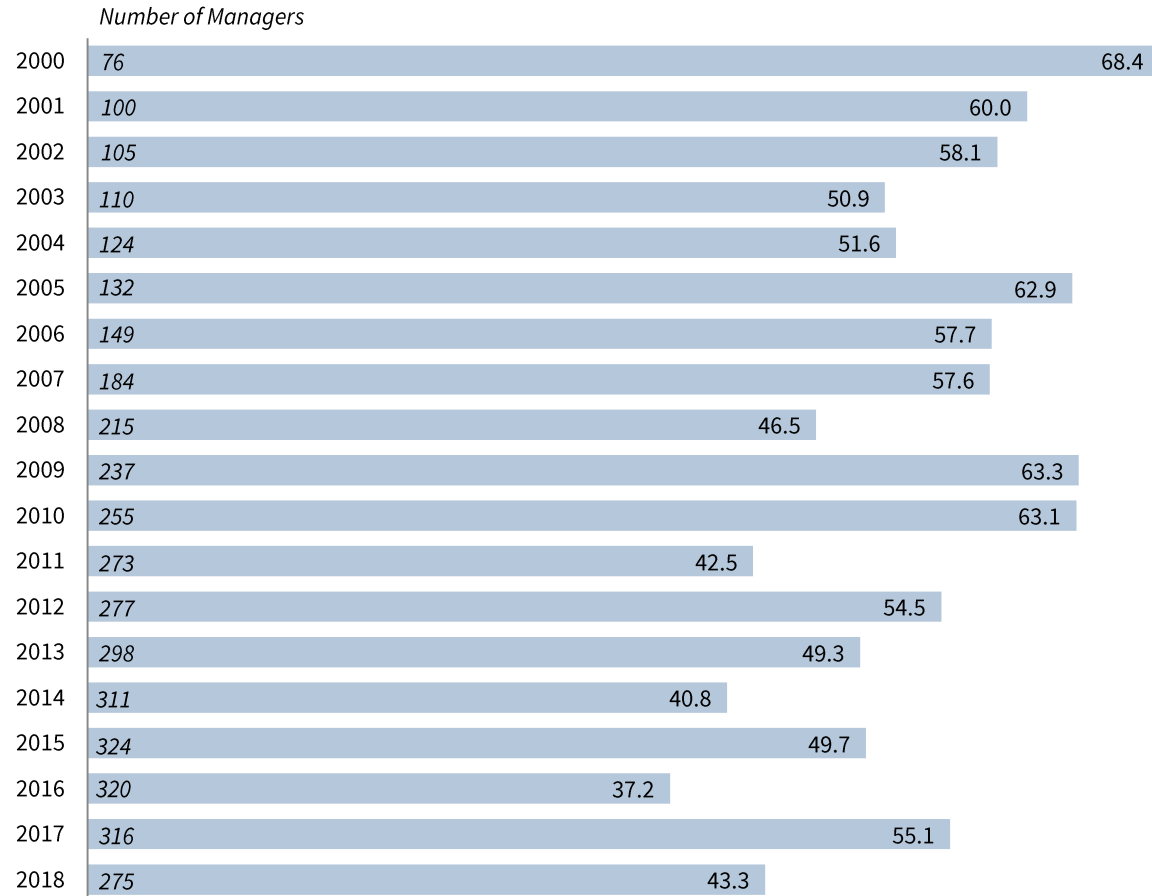
Calendar Year 2018 • n = 275



One-fifth of managers outperformed the fee-adjusted index by more than 250 bps, representing meaningful value-add.

Active manager performance is cyclical

PERCENTAGE OF GLOBAL EQUITY MANAGERS OUTPERFORMING THE FEE-ADJUSTED MSCI WORLD INDEX
2000–18 • Percent (%)

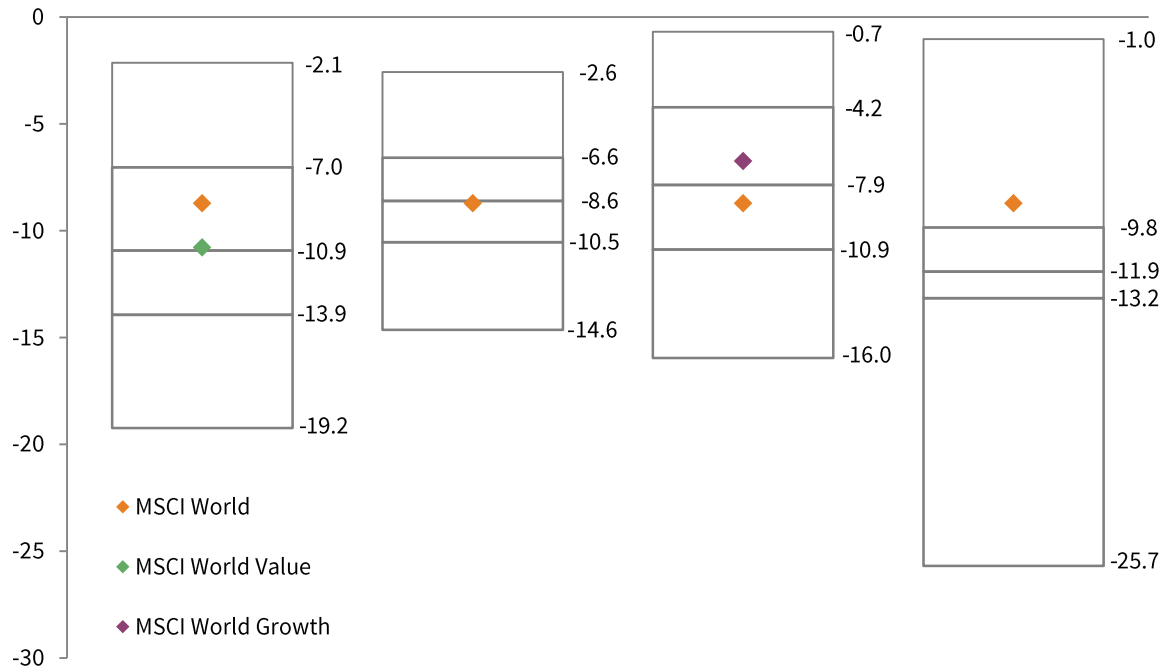


In six of the last eight years, the majority of managers have underperformed the fee-adjusted index. This stands in sharp contrast to the 2000–10 period, when the lion’s share of active managers outperformed the fee-adjusted index in all but one year.

Growth was the only style that outperformed the overall MSCI World Index

GLOBAL EQUITY MANAGER UNIVERSE RETURN QUANTILES BY INVESTMENT PHILOSOPHY

Calendar Year 2018 • Percent (%)



The median growth manager fared better than other styles in 2018 and topped the broad index, but trailed the growth index. Value managers lagged the broader index, as well as their benchmark.

	Value	Diverse	Growth	Opportunistic
High	20.6	-2.0	3.1	-0.4
Manager Median	-10.9	-8.6	-7.9	-11.9
Low	-21.0	-20.2	-17.1	-36.2
Index*	-10.8*	-8.7	-6.7*	-8.7
Number of Managers	83	44	55	14



* The MSCI World Value Index returned -10.8% in 2018; and the MSCI World Growth Index returned -6.7%.

Sources: Cambridge Associates LLC, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Cambridge Associates LLC's (CA) manager universe statistics are derived from CA's proprietary Investment Manager Database. Managers 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. Performance is generally reported gross of investment management fees. Only managers with performance available for the entire period measured are included.

Investment styles go in and out of favor over time

THE CYCLICAL NATURE OF GLOBAL EQUITY INVESTMENT PHILOSOPHIES

2000–18 • Percent (%)

Annual Total Returns

Year	Median Growth Mgr		Median Value Mgr		Median Opportunistic Mgr		MSCI World
	Median	<i>n</i>	Median	<i>n</i>	Median	<i>n</i>	
2000	-13.8	29	1.4	22	---	---	-13.2
2001	-19.3	35	-7.2	31	---	---	-16.8
2002	-20.8	38	-13.9	34	---	---	-19.9
2003	30.9	37	38.9	38	---	---	33.1
2004	14.4	36	17.7	43	---	---	14.7
2005	13.4	35	9.9	45	12.9	10	9.5
2006	19.7	35	22.2	52	22.6	13	20.1
2007	14.8	36	7.2	60	13.9	18	9.0
2008	-44.4	43	-39.5	66	-43.1	18	-40.7
2009	35.3	48	33.4	74	39.5	16	30.0
2010	15.5	54	13.0	78	15.0	17	11.8
2011	-7.6	55	-5.4	85	-7.9	17	-5.5
2012	16.9	54	17.0	85	17.1	17	15.8
2013	25.2	59	28.2	92	28.8	16	26.7
2014	4.9	63	3.8	96	4.3	20	4.9
2015	2.7	67	-2.8	96	-0.6	20	-0.9
2016	4.0	62	9.0	93	3.9	19	7.5
2017	31.5	65	21.9	90	24.3	18	22.4
2018	-7.9	55	-10.9	83	-11.9	14	-8.7

Average Annual Compound Returns: Periods Ended December 31, 2018

Trailing 10-Yr	11.9	26	10.4	51	---	---	9.7
Trailing 5-Yr	6.7	45	4.1	73	4.2	14	4.6
Trailing 3-Yr	7.9	48	6.2	79	5.1	14	6.3

Growth has topped value in recent years, with higher median manager returns in four of the past five years. Styles can experience cyclical shifts; value outperformed growth for five straight years from 2000 to 2004.

Managers' differing sector allocations can influence relative returns

GLOBAL EQUITY MANAGERS' MEDIAN SECTOR ALLOCATIONS VERSUS INDEX WEIGHT

As of December 31, 2018 • Percent (%) • n = 221

	Manager Median Underweight/Overweight vs Index (bps)		12/31/2017 Index Weight (%)	CY 2018 Index Returns	Net Allocation Effect (+/-)
	Underweight vs Index	Overweight vs Index			
Cons Disc		33	12.3	-5.5	+
Cons Staples	-146		9.0	-10.1	-
Energy	-156		6.3	-15.8	+
Financials		-30	18.1	-17.0	+
Healthcare	-100		11.8	2.5	-
Industrials		23	11.6	-14.5	-
IT		38	16.8	-2.6	+
Materials	-87		5.2	-16.9	+
Real Estate	-172		3.1	-6.4	-
Telecomm*		-52	2.8	-10.0	+
Utilities	-127		3.0	2.0	-
			MSCI World	-8.7	

On a median basis, managers started the year with an underweight position to healthcare, which was the top-performing sector in 2018.

Managers are more likely to beat the index when developed markets outperform US

ASSESSING THE IMPACT OF US EQUITIES ON ACTIVE MANAGER PERFORMANCE

2000-18

Active Managers Have Outperformed the MSCI World Index
100% of the Time When the Index Has Beaten the
MSCI US Index...

Year	Total Return (%)				MSCI World Minus MSCI US (ppts)	Mgr Value Added vs MSCI World (ppts)
	MSCI World	MSCI US	Glo Equity Manager	Median <i>n</i>		
2006	20.1	14.7	21.4	149	5.4	1.3
2003	33.1	28.4	34.2	110	4.7	1.0
2004	14.7	10.1	15.5	124	4.6	0.8
2005	9.5	5.1	11.5	132	4.3	2.0
2009	30.0	26.3	33.7	237	3.7	3.7
2007	9.0	5.4	10.9	184	3.6	1.8
2002	-19.9	-23.1	-18.2	105	3.2	1.7
2017	22.4	21.2	24.1	316	1.2	1.7
2012	15.8	15.3	17.1	277	0.5	1.2
Mean	15.0	11.5	16.7		3.5	1.7

...and Outperformed the MSCI World Index 60%
of the Time When the Index Lagged the MSCI US Index

Year	Total Return (%)				MSCI World Minus MSCI US (ppts)	Mgr Value Added vs MSCI World (ppts)
	MSCI World	MSCI US	Glo Equity Manager	Median <i>n</i>		
2000	-13.2	-12.8	-8.2	76	-0.3	5.0
2015	-0.9	0.7	-0.2	324	-1.6	0.7
2010	11.8	14.8	13.5	255	-3.0	1.7
2008	-40.7	-37.6	-40.5	215	-3.1	0.2
2016	7.5	10.9	6.9	320	-3.4	-0.7
2018	-8.7	-5.0	-8.9	275	-3.7	-0.2
2001	-16.8	-12.4	-13.4	100	-4.4	3.4
2013	26.7	31.8	27.0	298	-5.1	0.3
2011	-5.5	1.4	-6.1	273	-6.9	-0.5
2014	4.9	12.7	4.7	311	-7.8	-0.2
Mean	-3.5	0.4	-2.5		-3.9	1.0

US is the largest weight in MSCI World, but in 2018 managers were underweight US on a median basis, which outperformed the MSCI World Index by 367 bps.

Exposure to emerging markets was a negative factor in 2018

ASSESSING THE IMPACT OF EMERGING MARKET EQUITIES ON ACTIVE MANAGER PERFORMANCE

2000-18

Active Managers Have Outperformed the MSCI World Index 57% of the Time When the Index Has Beaten the MSCI EM Index ...

Year	Total Return (%)				MSCI World Minus MSCI EM (ppts)	Mgr Value Added vs MSCI World (ppts)
	MSCI World	MSCI EM	Median Glo Equity Manager	n		
2013	26.7	-2.6	27.0	298	29.3	0.3
2000	-13.2	-30.6	-8.2	76	17.4	5.0
2015	-0.9	-14.9	-0.2	324	14.0	0.7
2011	-5.5	-18.4	-6.1	273	12.9	-0.5
2008	-40.7	-53.3	-40.5	215	12.6	0.2
2014	4.9	-2.2	4.7	311	7.1	-0.2
2018	-8.7	-14.6	-8.9	275	5.9	-0.2
Mean	-5.3	-19.5	-4.6		14.2	0.7

... and Outperformed the MSCI World Index 92% of the Time When the Index Has Lagged the MSCI EM Index

Year	Total Return (%)				MSCI World Minus MSCI EM (ppts)	Mgr Value Added vs MSCI World (ppts)
	MSCI World	MSCI EM	Median Glo Equity Manager	n		
2012	15.8	18.2	17.1	277	-2.4	1.2
2016	7.5	11.2	6.9	320	-3.7	-0.6
2010	11.8	18.9	13.5	255	-7.1	1.7
2004	14.7	25.6	15.5	124	-10.8	0.8
2006	20.1	32.1	21.4	149	-12.1	1.3
2002	-19.9	-6.2	-18.2	105	-13.7	1.7
2001	-16.8	-2.6	-13.4	100	-14.2	3.4
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2003	33.1	55.8	34.1	110	-22.7	1.0
2005	9.5	34.0	11.5	132	-24.5	2.0
2007	9.0	39.4	10.9	184	-30.4	1.8
2009	30.0	78.5	33.7	237	-48.5	3.7
Mean	11.4	28.5	13.1		-17.1	1.7

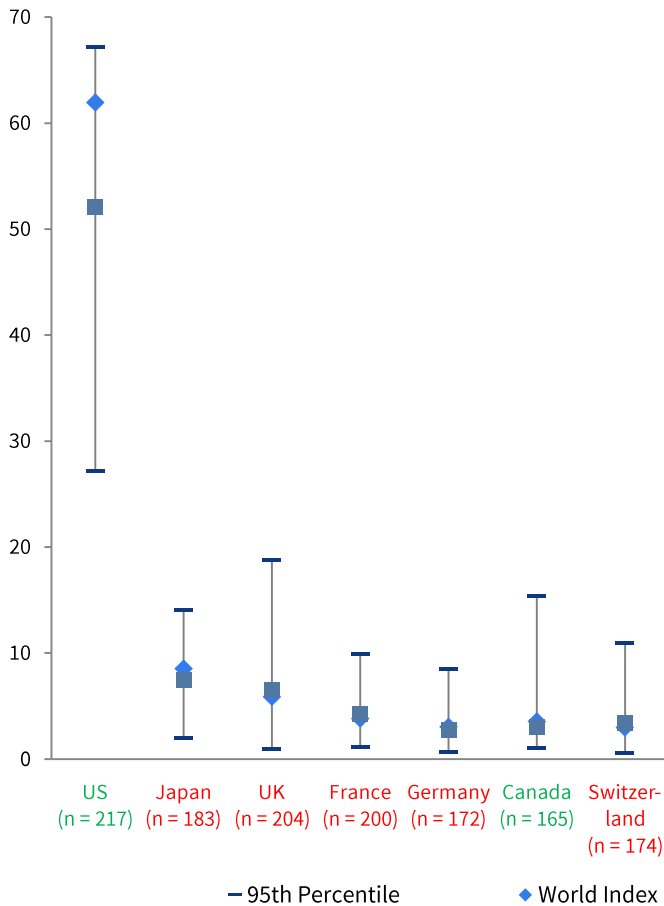
Emerging markets lagged developed markets substantially in 2018, which presented a challenge for active managers that place off-benchmark bets in emerging markets countries.

Country bets can significantly affect relative performance

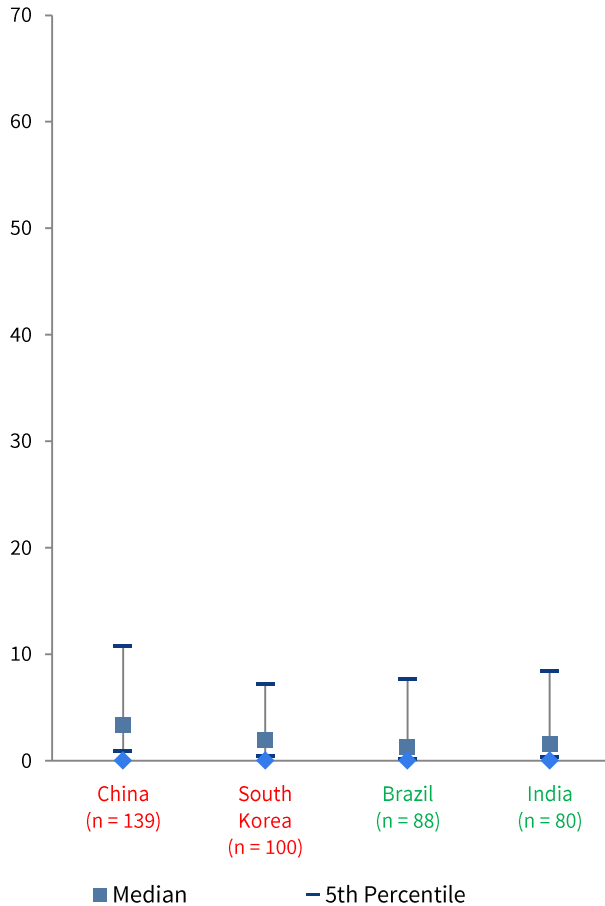
GLOBAL EQUITY MANAGERS' COUNTRY ALLOCATIONS VS THE MSCI WORLD INDEX

As of December 31, 2018 • n = 220

Manager Allocations to 7 MSCI World Countries with > 3% Weight



Off-Benchmark Countries Where >30% Managers Have Allocations



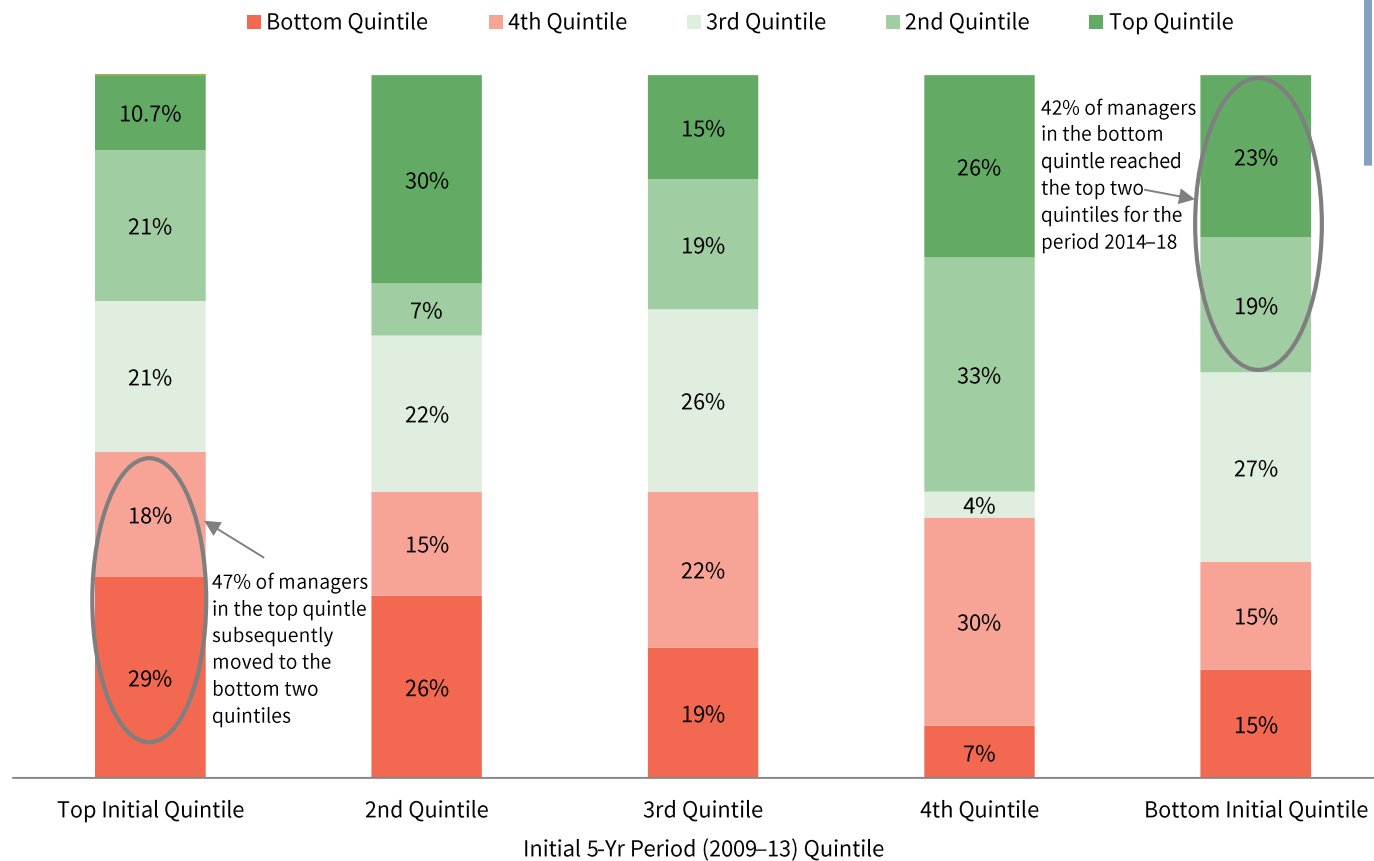
The median manager's 332 bp off-benchmark bet on China was a drag in 2018, as the country underperformed the MSCI World Index by more than 1,000 bps.

Movement between top and bottom quintiles is common

ANALYSIS OF GLOBAL EQUITY MANAGER RETURNS BY QUINTILE OVER FIVE-YEAR PERIODS

2009–18 • n = 135

Percent of Managers in Subsequent 5-Yr Period (2014–18) Quintile



Nearly half of the top-performing managers in the initial five-year period fell to the bottom two quintiles in the subsequent five-year period.



Contributors to this report include Sean Duffin, Melanie Blum, Morgen Ellis, and Greg Gonsalves.

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