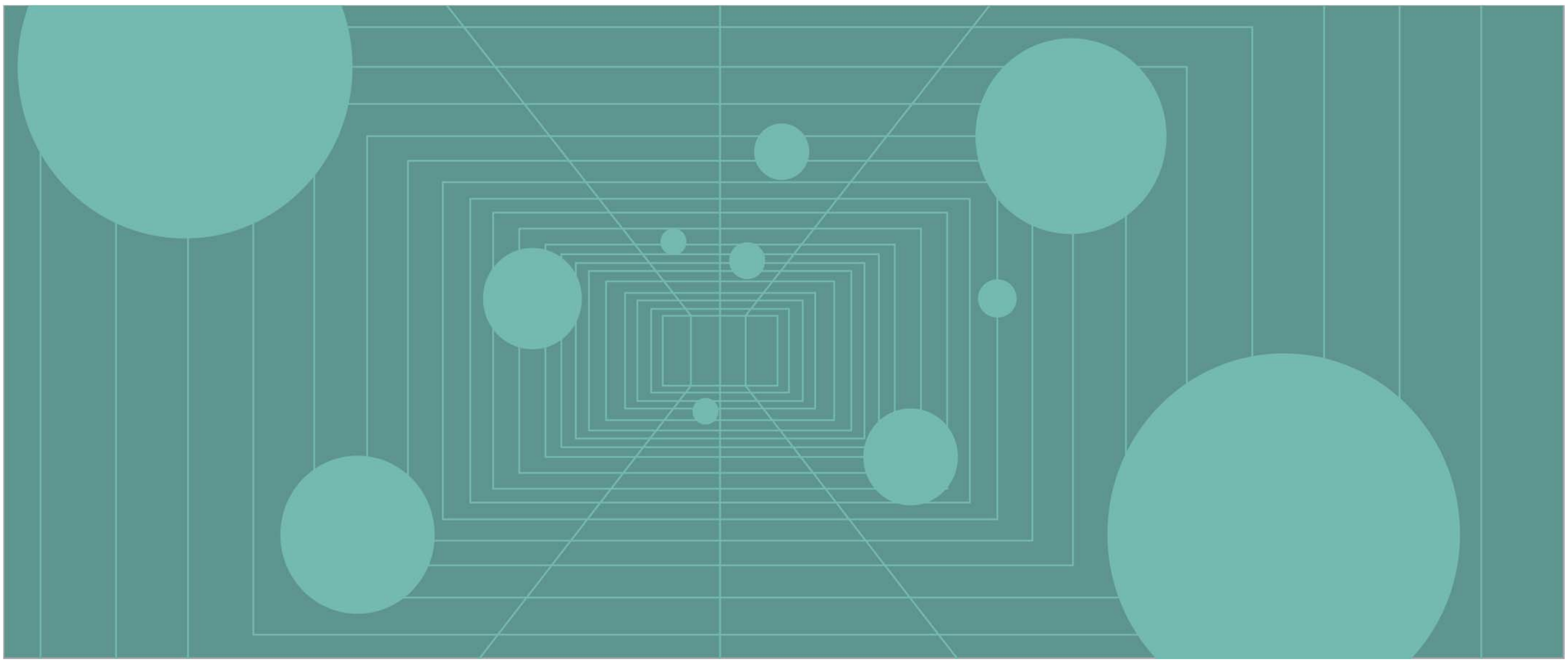
US MID- TO LARGE-CAP EQUITY MANAGER PERFORMANCE

ANALYSIS OF 2017 AND PERFORMANCE SINCE 2000



CAMBRIDGE ASSOCIATES

2018

Summary Observations

- Despite strong overall returns, active managers continued their now four-year streak of underperformance against the index, with 54.4% underperforming (gross of fees) in 2017. For the year, the median US mid- to large-cap manager underperformed the Russell 1000® Index by 70 basis points (bps). With fees (a proxy of 60 bps), the percentage of underperformers increases to 58.2%. Style preference had a big impact: the average growth manager in our universe performed very well against the Russell 1000®, but underperformed the Russell 1000® Growth Index, whereas the median value manager (a larger constituent of our overall universe) underperformed the Russell 1000® but significantly outperformed the Russell 1000® Value Index's 13.6% return. Overall, more than a quarter of managers outperformed the fee-adjusted index by 250 bps or more, representing substantial value add.
- Growth stocks made a notable return to favor in 2017 after playing second fiddle to value stocks in 2016. Divergence between growth and value was 1,061 bps, the largest divergence since 2001. Relative to CA's overall manager median, active growth managers had their best rolling four-quarter period (6.86 percentage points above the composite median) since the period ended third quarter 2000. Conversely, value managers had their worst rolling four-quarter performance versus the composite median since second quarter 2008, a period encompassing the height of the global financial crisis. Still, the median value manager outperformed the Russell 1000® Value Index, and top quartile managers outperformed by over 1,000 bps, even after a fee proxy.
- The success of active managers is cyclical and affected by several factors. Factors that can create a more favorable environment for active management include larger companies underperforming, non-US developed market stocks outperforming US stocks, and cash outperforming stocks. In recent years most of these factors have been absent. In 2017, US stocks did lag non-US stocks, but the presence of this factor alone was not enough to help the median manager outperform. In fact, 2017 was the first time in the 2000–17 period that the median US mid- to large-cap manager lagged the MSCI US Index even as non-US stocks outperformed US stocks.

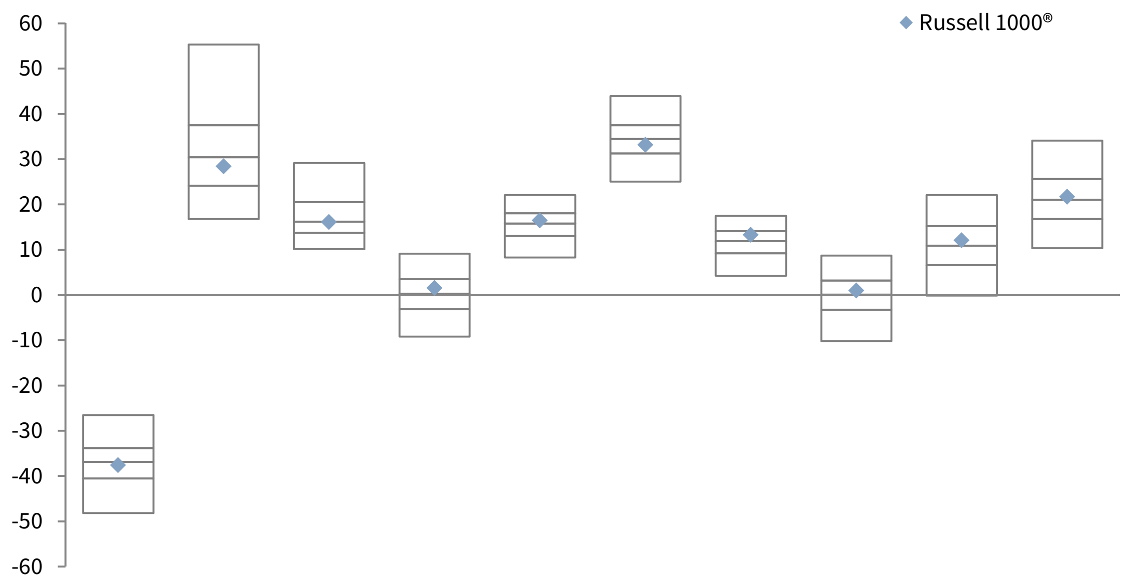
Summary Observations (continued)

- Sector allocation can also play a role in relative performance. The three sectors that contributed the most return (based on their weighted contributions) to the Russell 1000® for 2017 were financials, information technology, and health care. Managers were underweight on both a median and average basis for information technology (underweight by a median of 69 bps), which was the top-performing sector and significantly outperformed the overall index. Their overweight to financials, which underperformed the index overall, was a modest bet at 80 bps overweight. They were about even with the index in health care (overweight 1 bp), earning minimal excess from the sector's slight index outperformance. All told, the five sectors that managers held a median underweight position in contributed nearly 890 bps to the index's 2017 return.
- High dispersion in stock returns is often thought to mean more managers will outperform. In fact, the relationship is weak. Rather, stock dispersion increases the dispersion of managers' excess returns—greater stock dispersion gives managers more of an opportunity to separate from the pack, but this can be to the upside or the downside. In 2017, the dispersion of stock returns was the lowest since in our 2000–17 data set, but the dispersion in manager excess returns actually crept up, and was the highest it has been since 2009. Stock dispersion has been markedly low in recent years, but there is still plenty of room for those skilled at selecting active managers to see improved returns.
- Persistence in manager outperformance is rare, and movement among performance quintiles is fairly common. Of the top-performing quintile of US mid- to large-cap equity managers over the past five years, nearly half placed in the bottom two quintiles over the prior five-year period. Long term, more than half of managers in the top-performing quintile over the past ten years found themselves in the bottom quintile for at least one three-year period, a factor that endures regardless of investment style.

54% of active US equity managers underperformed the index in 2017

US MID- TO LARGE-CAP EQUITY MANAGER ANNUAL RETURNS BY QUARTILES

2008–17 • Percent (%)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
5th Percentile	-26.6	55.3	29.2	9.1	22.0	43.9	17.5	8.7	22.0	34.1
25th Percentile	-33.9	37.5	20.5	3.5	18.0	37.5	14.1	3.2	15.2	25.6
Median	-36.8	30.5	16.2	0.3	15.7	34.5	11.9	0.1	10.9	21.0
75th Percentile	-40.5	24.1	13.7	-3.2	13.0	31.3	9.2	-3.2	6.6	16.7
95th Percentile	-48.2	16.8	10.1	-9.2	8.3	25.1	4.2	-10.2	-0.1	10.3
Russell 1000®	-37.6	28.4	16.1	1.5	16.4	33.1	13.2	0.9	12.1	21.7
# of Managers	*1,359*	*1,324*	*1,291*	*1,272*	*1,251*	*1,214*	*1,209*	*1,196*	*1,145*	*890*
% Outperforming	**55.8**	**57.2**	**50.7**	**39.2**	**42.0**	**60.9**	**35.0**	**43.1**	**42.5**	**45.5**
% Underperforming	**44.1**	**44.2**	**50.8**	**60.8**	**58.0**	**39.9**	**64.8**	**56.9**	**58.8**	**54.4**

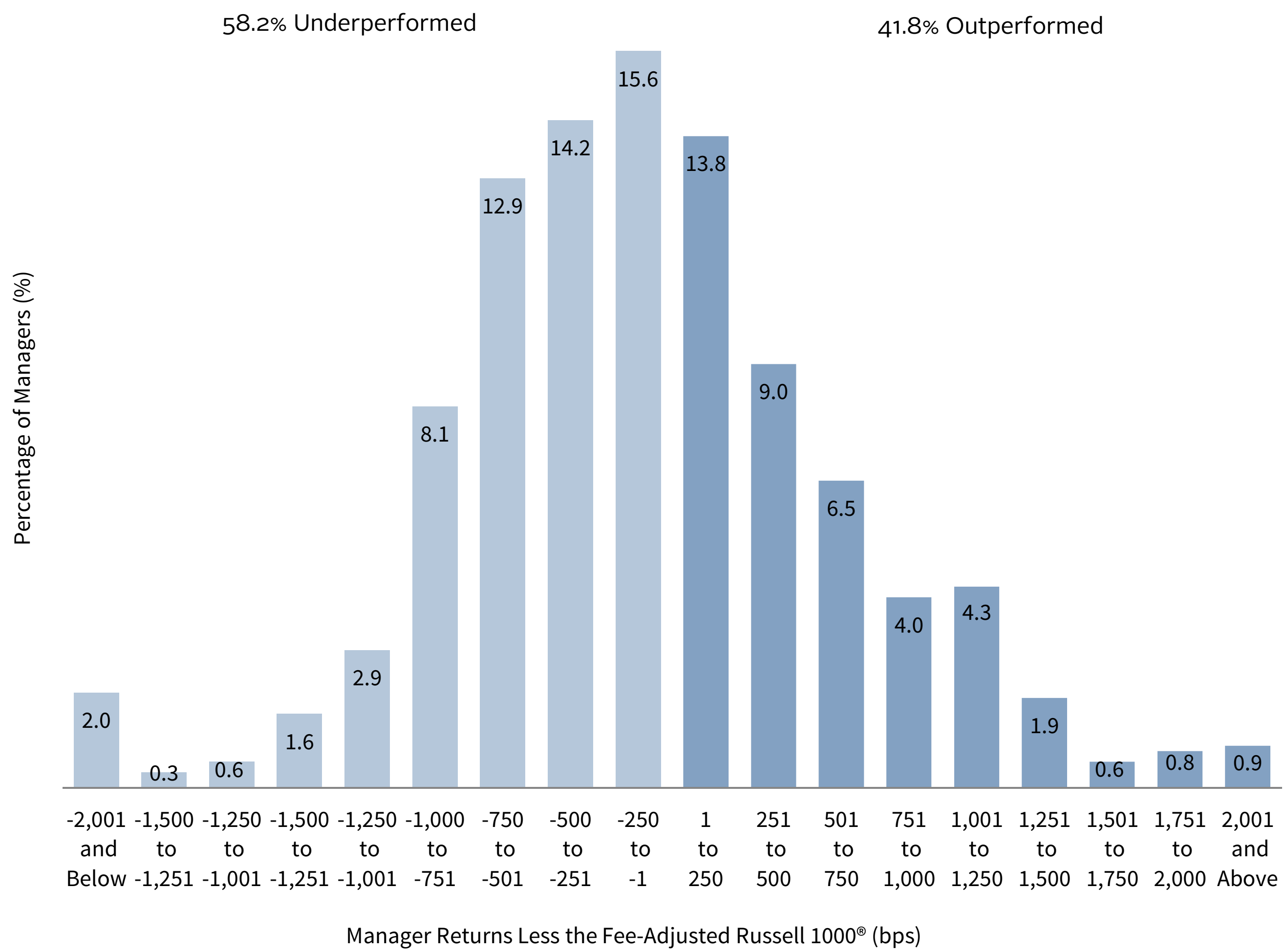
The median manager has underperformed the index in six of the eight years since the global financial crisis

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.

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. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Adjusted for fees, the percentage of underperformers in 2017 was 58%

US MID- TO LARGE-CAP EQUITY MANAGER RETURNS RELATIVE TO THE FEE-ADJUSTED RUSSELL 1000® INDEX
Calendar Year 2017 • *n = 890*



58% represents a significant improvement from the 63% underperforming in 2016, and over a quarter of managers outperformed by 250 bps or more, representing substantial value add

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.
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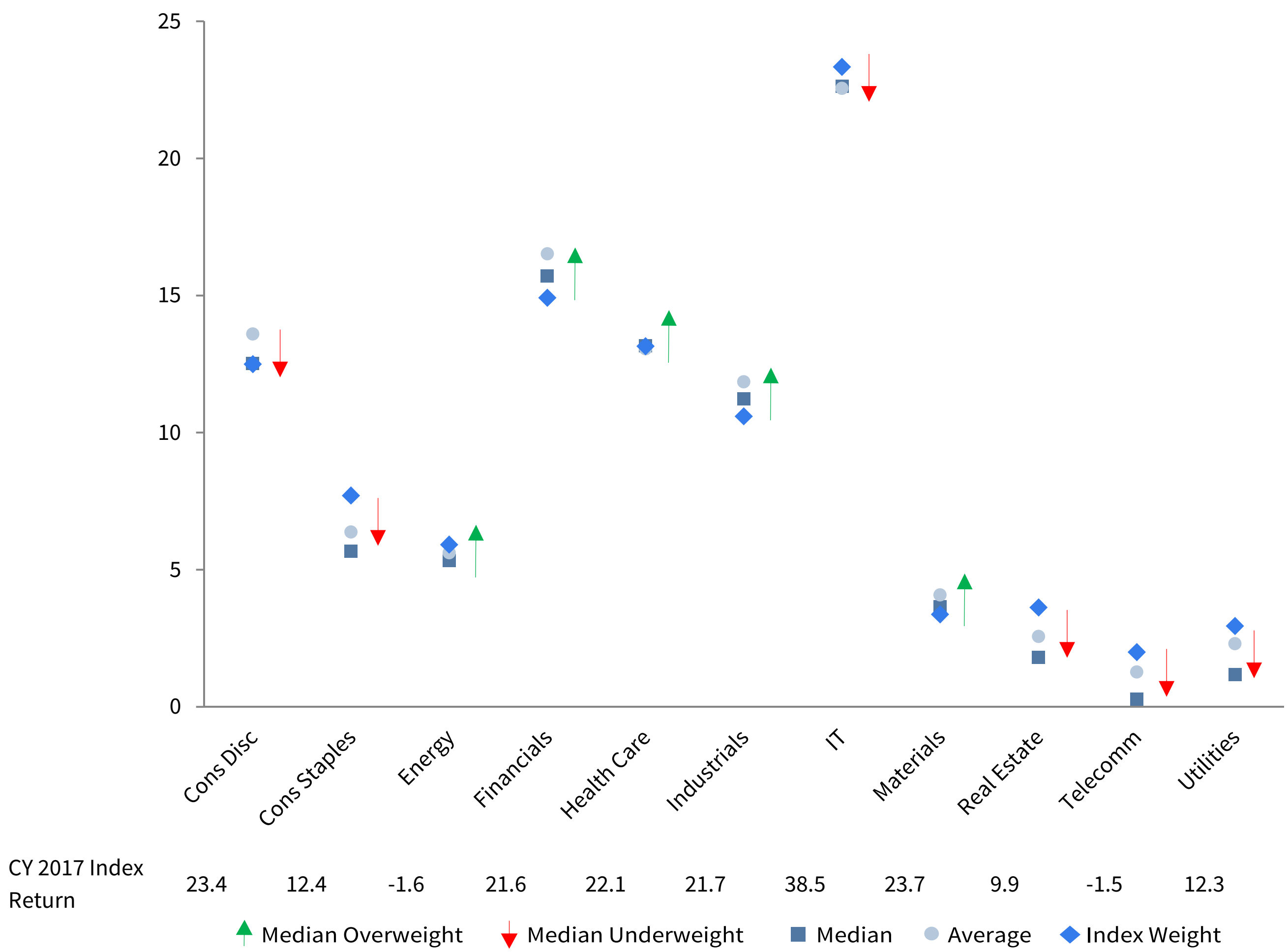
Managers' different sector allocations can affect relative performance

US MID- TO LARGE-CAP EQUITY MANAGER SECTOR ALLOCATIONS VERSUS INDEX WEIGHT
As of December 31, 2017 • Percent (%) • *n = 584*

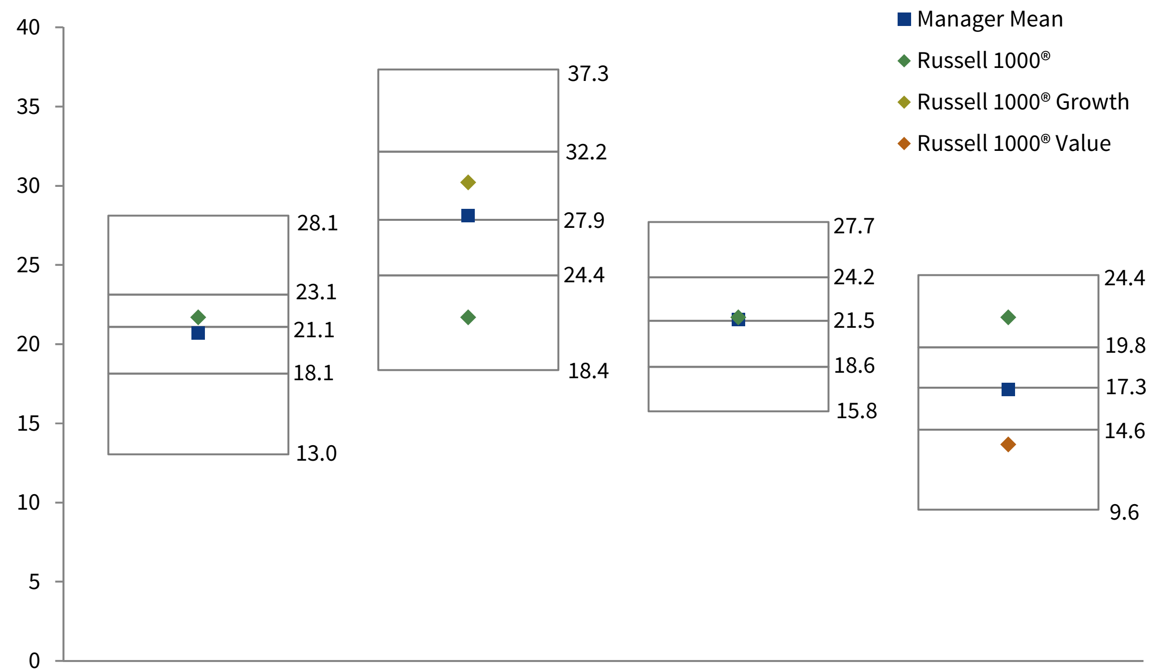


The six sectors where managers were underweight on both an average and median basis contributed ~890 bps to the index's 2017 total return

Sources: Cambridge Associates LLC, Factset Research Systems, Frank Russell Company, and Thomson Reuters Datastream.
Notes: Arrows indicate whether the median manager was overweight (green) or underweight (red) versus the Russell 1000® Index. Only includes data for the 584 managers that provided sector allocations as of year-end 2017. Index weights represent year-end GICS sector allocations of the Russell 1000® Index. 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.

The median growth manager significantly outperformed other styles in 2017

US MID- TO LARGE-CAP EQUITY MANAGER UNIVERSE RETURN QUARTILES BY INVESTMENT PHILOSOPHY
Calendar Year 2017 • Percent (%)



	Diverse	Growth	Opportunistic	Value
High	33.8	49.9	31.7	28.0
Manager Mean	20.7	28.1	21.5	17.1
Low	6.3	10.8	13.0	-1.9
Russell 1000®	21.7	21.7*	21.7	21.7*
Number of Managers	*147*	*260*	*38*	*342*

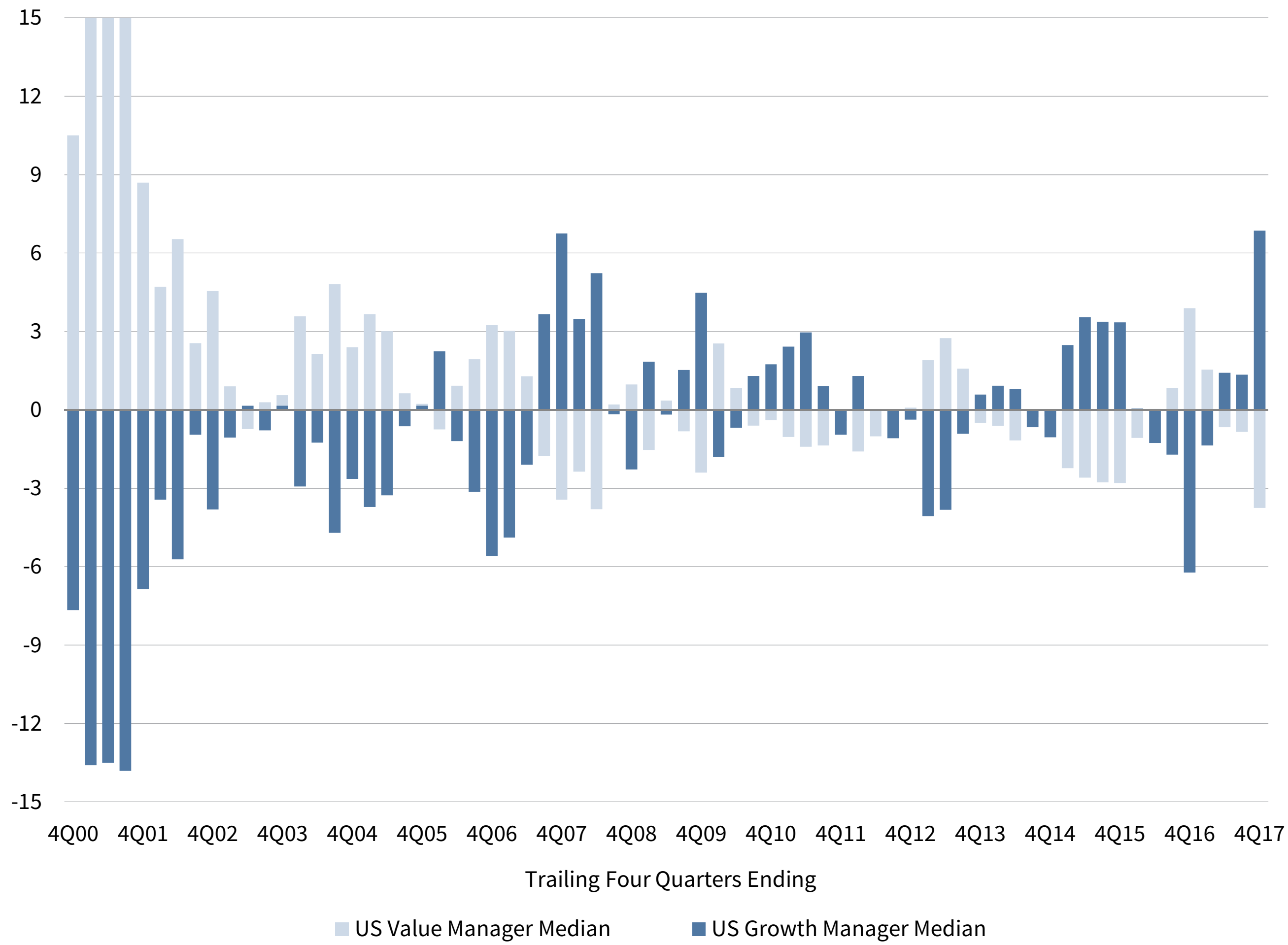
The tilt toward growth in 2017 was a pivot from 2016's value tilt; the median growth manager trailed the growth index

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.
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.
* The Russell 1000® Growth Index returned 30.2% in 2017; the Russell 1000® Value Index returned 13.6%.

Growth surged relative to value in 2017, a reversal from 2016's strong value showing

US GROWTH AND VALUE MANAGER MEDIAN RETURNS RELATIVE TO US EQUITY COMPOSITE MANAGER MEDIAN RETURNS

First Quarter 2000 – Fourth Quarter 2017 • Percentage Point Differential Above/Below Composite Median



Momentum behind growth strategies jumped in the second half of 2017, clawing back most of 2016's relative under-performance

Source: Cambridge Associates LLC.

Notes: Y-axis scale capped for graphing purposes. In the rolling four-quarter periods ended first quarter, second quarter, and third quarter 2001, the median value manager outperformed the composite median by 20.98, 21.09, and 16.72 percentage points, respectively. 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. Number of managers included in medians varies from quarter to quarter. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Investment styles go in and out of favor over time

CYCLICAL NATURE OF US COMMON STOCK INVESTMENT PHILOSOPHIES

2000–17 • Percent (%)

Growth now has the edge over longer time horizons

Annual Total Returns

Year	Median Growth Mgr	*n*	Median Value Mgr	*n*	Median Opportunistic Mgr	*n*	Large-Cap Stocks (Russell 1000®)
2000	-6.5	*390*	**11.6**	*385*	0.6	*60*	-7.8
2001	-16.2	*427*	**-0.6**	*403*	-9.1	*61*	-12.4
2002	-24.5	*442*	**-16.2**	*420*	-19.8	*57*	-21.7
2003	30.8	*443*	**31.1**	*430*	27.9	*58*	29.9
2004	10.6	*446*	**15.6**	*449*	13.4	*59*	11.4
2005	8.4	*446*	**8.5**	*460*	8.3	*59*	6.3
2006	9.3	*454*	**18.2**	*469*	15.3	*59*	15.5
2007	**14.2**	*449*	4.1	*504*	7.8	*59*	5.8
2008	-39.1	*448*	-35.9	*499*	**-34.8**	*58*	-37.6
2009	**34.9**	*431*	28.0	*483*	28.6	*55*	28.4
2010	**17.9**	*402*	15.8	*484*	16.1	*54*	16.1
2011	-0.7	*400*	-0.2	*479*	-0.7	*55*	**1.5**
2012	15.4	*387*	15.8	*472*	16.0	*56*	**16.4**
2013	35.0	*375*	34.0	*455*	**35.1**	*55*	33.1
2014	10.9	*373*	11.6	*454*	11.9	*52*	**13.2**
2015	**3.4**	*370*	-2.7	*444*	-0.1	*52*	0.9
2016	4.7	*343*	**14.8**	*428*	9.2	*51*	12.1
2017	**27.9**	*260*	17.3	*342*	21.5	*38*	21.7

Average Annual Compound Returns: Periods Ended December 31, 2017

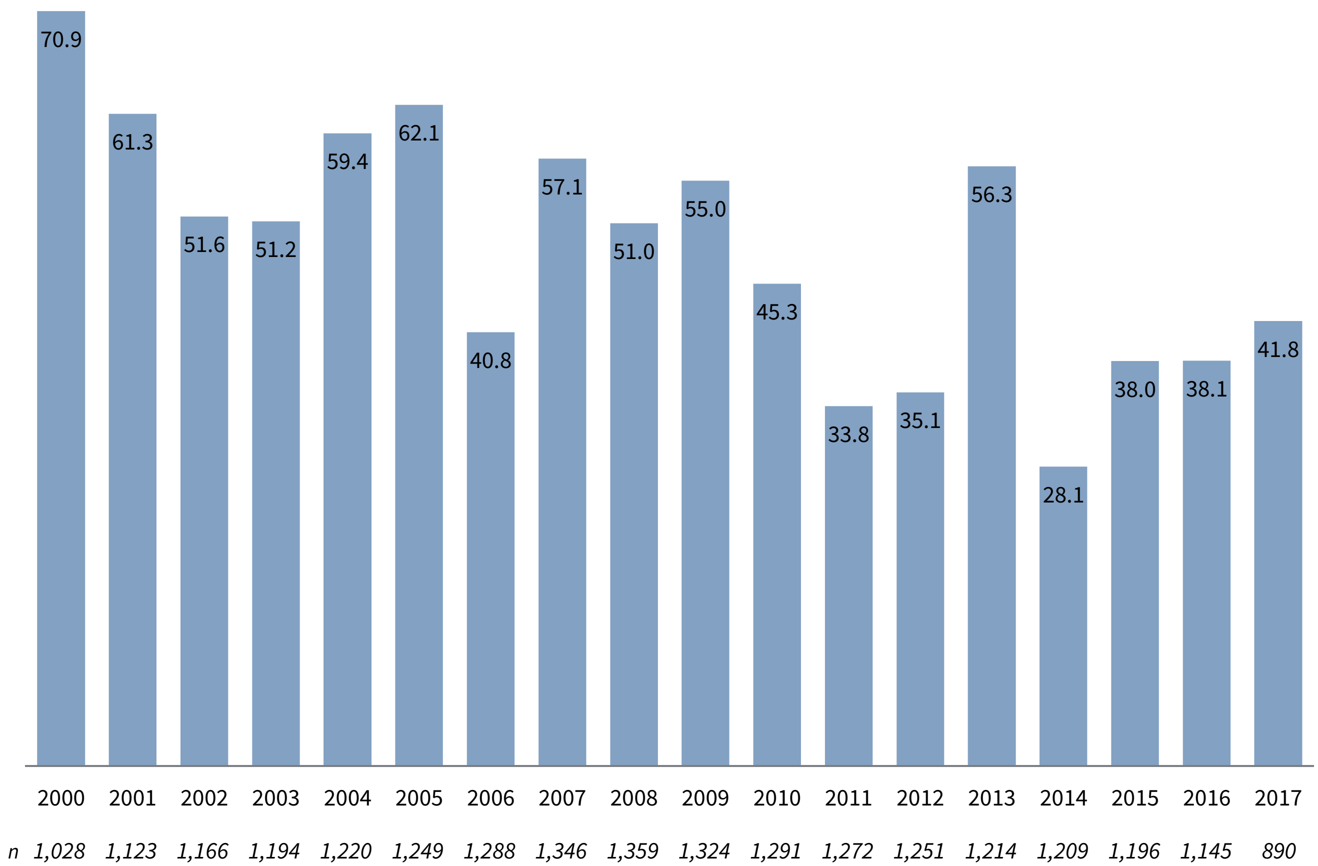
	Median Growth Mgr	*n*	Median Value Mgr	*n*	Median Opportunistic Mgr	*n*	Large-Cap Stocks (Russell 1000®)
Trailing 15-Yr	**11.2**	*130*	10.6	*177*	10.8	*18*	10.2
Trailing 10-Yr	**9.4**	*193*	8.4	*259*	8.4	*29*	8.6
Trailing 5-Yr	**15.7**	*237*	14.6	*322*	15.4	*33*	15.7
Trailing 3-Yr	**11.6**	*254*	9.4	*335*	9.9	*36*	11.2

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.
Notes: The philosophy with the highest return in each period is highlighted. 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. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Active US equity manager relative performance is cyclical

PERCENTAGE OF US MID- TO LARGE-CAP MANAGERS OUTPERFORMING THE FEE-ADJUSTED RUSSELL 1000® INDEX

2000–17

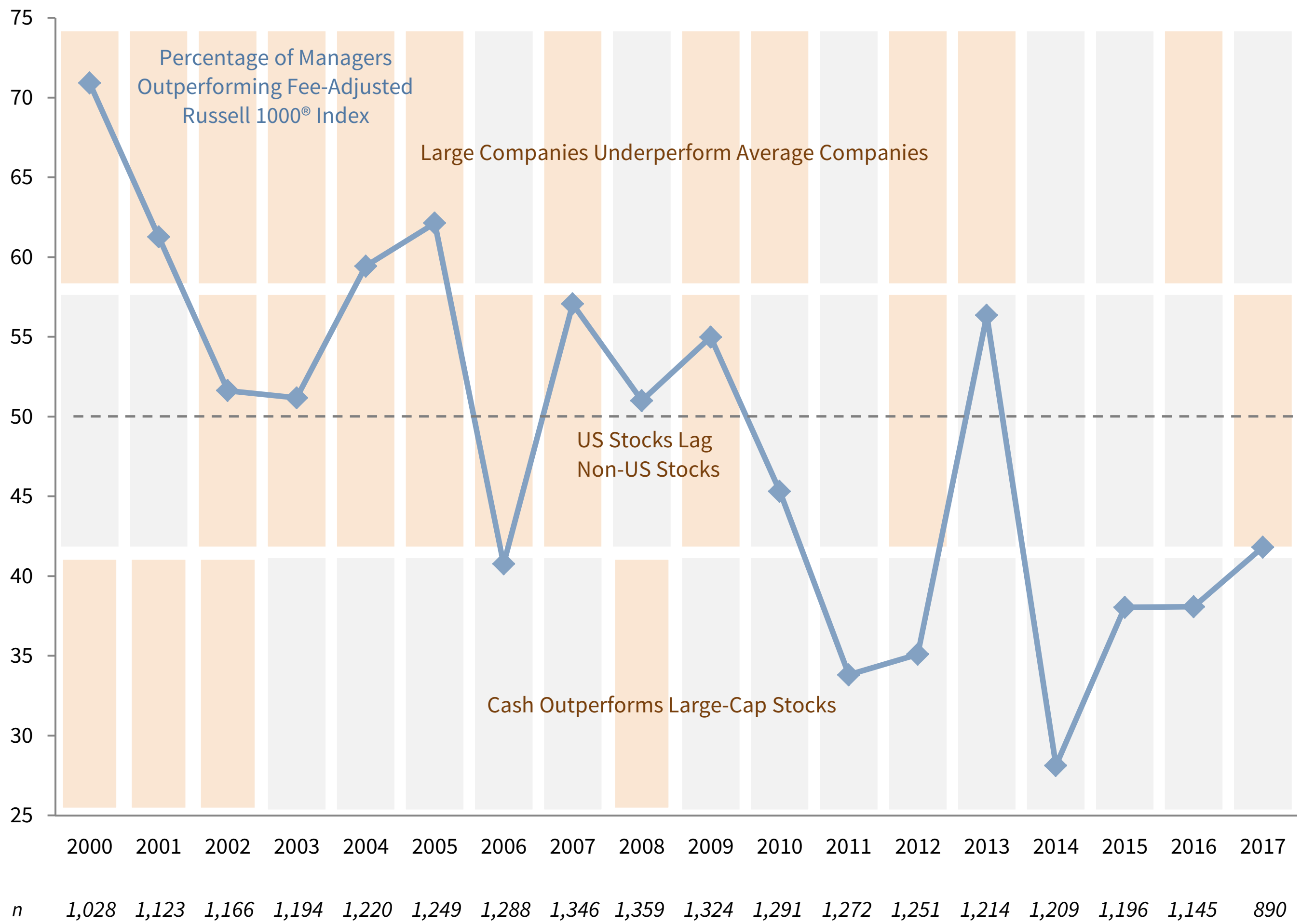


Post global financial crisis, the percentage of managers under-performing the index has remained high

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.
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. We have added 60 bps to the Russell 1000® Index return as a proxy for manager fees. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

US equities' 2017 resurgence alone was not enough to help a majority of active managers outperform

PRESENCE OF FACTORS CONTRIBUTING TO A MORE FAVORABLE ENVIRONMENT FOR ACTIVE MANAGEMENT
2000–17



Many factors contribute to active manager out- or underperformance, but the presence of these three can create a more favorable environment for active management in general. Only one (outperformance from Non-US stocks) was present in 2017

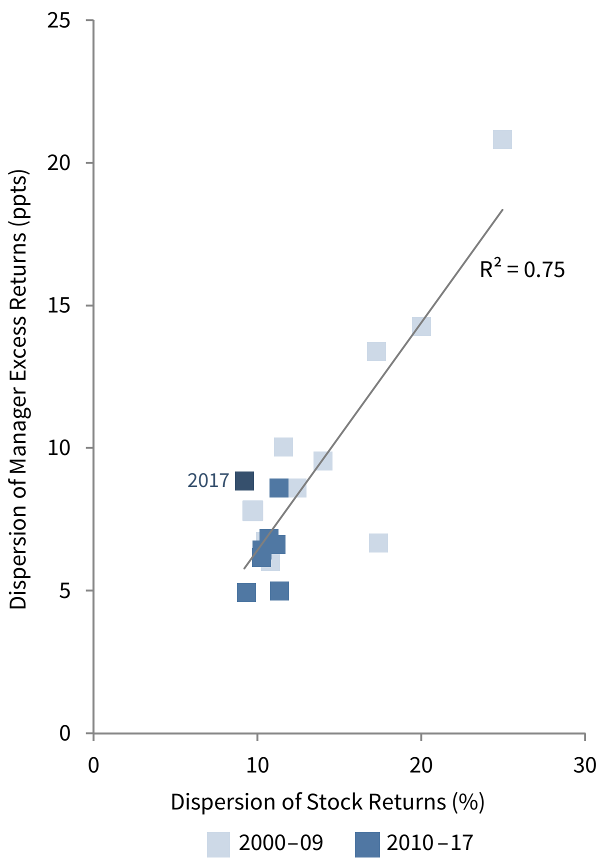
Sources: BofA Merrill Lynch, Cambridge Associates LLC, Federal Reserve, Frank Russell Company, MSCI Inc., and Thomson Reuters Datastream.
Notes: Factors are represented by: capitalization-weighted Russell 1000® Index ("large companies"), equal-weighted Russell 1000® Index ("average companies"), MSCI US Index ("US stocks"), MSCI EAFE Index ("non-US stocks"), BofA Merrill Lynch 91-Day Treasury Bills ("cash"), and Russell 1000® Index ("large-cap stocks"). For more detail on the impact of these factors in each year, see the Appendix. 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. We have added 60 bps to the Russell 1000® Index return as a proxy for manager fees. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Lower dispersion of stock returns often leads to lower dispersion of excess returns

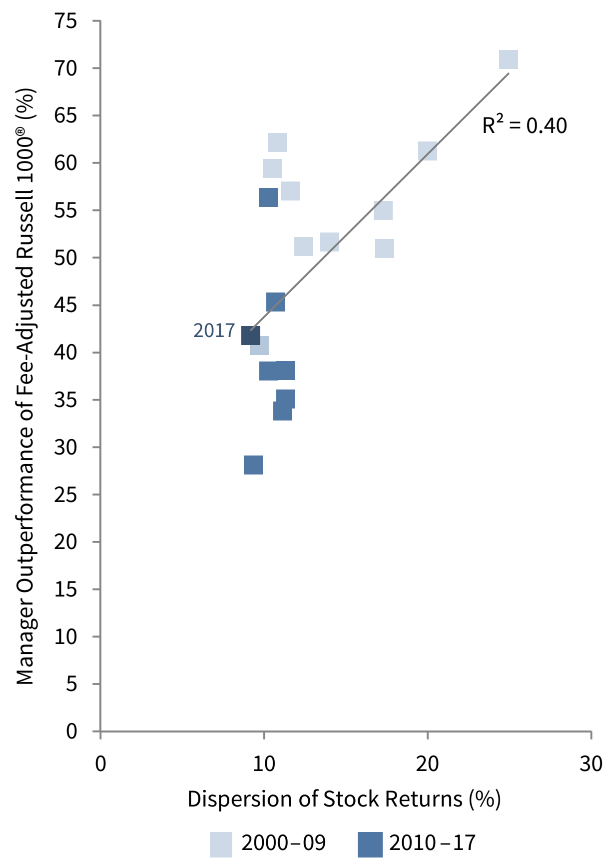
IMPACT OF ANNUAL DISPERSION OF US STOCK RETURNS ON DISPERSION OF MANAGER EXCESS RETURNS AND PERCENT OF MANAGERS OUTPERFORMING

2000–17

Dispersion of Stock Returns and Dispersion of Manager Performance



Dispersion of Stock Returns and Managers Outperforming



Stock return dispersion fell in 2017 relative to recent years, but manager excess return dispersion was actually the highest it has been since 2009

Sources: Cambridge Associates LLC, FactSet Research Systems, Frank Russell Company, and Thomson Reuters Datastream.

Notes: Dispersion of return for stocks is represented by the square root of the sum of the squared differences between returns for each constituent and the index return multiplied by the weight of the constituent in the index. Dispersion of excess returns for managers represents managers in the middle 50% of the return range for US mid- to large-cap managers. 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. We have added 70 bps to the Russell 1000® Index return as a proxy for manager fees. Number of managers included in medians varies from quarter to quarter. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Movement between top and bottom quintiles is fairly common

ANALYSIS OF US MID- TO LARGE-CAP MANAGER RETURNS BY QUINTILE OVER FIVE-YEAR PERIODS

2008–17 • *n = 647*

Where Did They Go?

Initial 5-Yr Period (2008–12) Quintile	Subsequent 5-Yr Period (2013–17) Quintile	% of Managers from Initial Quintile
1	1	14.7%
	2	17.1%
	3	19.4%
	4	17.8%
	5	**31.0%**
2	1	**25.4%**
	2	18.5%
	3	20.0%
	4	19.2%
	5	16.9%
3	1	**23.3%**
	2	21.7%
	3	21.7%
	4	18.6%
	5	14.7%
4	1	17.7%
	2	22.3%
	3	19.2%
	4	**26.2%**
	5	14.6%
5	1	18.6%
	2	20.9%
	3	19.4%
	4	18.6%
	5	**22.5%**

Where Did They Come From?

Subsequent 5-Yr Period (2013–17) Quintile	Initial 5-Yr Period (2008–12) Quintile	% of Managers from Initial Quintile
1	1	14.7%
	2	**25.6%**
	3	23.3%
	4	17.8%
	5	18.6%
2	1	16.9%
	2	18.5%
	3	21.5%
	4	**22.3%**
	5	20.8%
3	1	19.4%
	2	20.2%
	3	**21.7%**
	4	19.4%
	5	19.4%
4	1	17.7%
	2	19.2%
	3	18.5%
	4	**26.2%**
	5	18.5%
5	1	**31.0%**
	2	17.1%
	3	14.7%
	4	14.7%
	5	22.5%

About a third of top-performing managers in the latest five-year period came from the bottom two quintiles (in red at right)

Source: Cambridge Associates LLC.
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.

Long-term outperformers often underperform in shorter-term periods

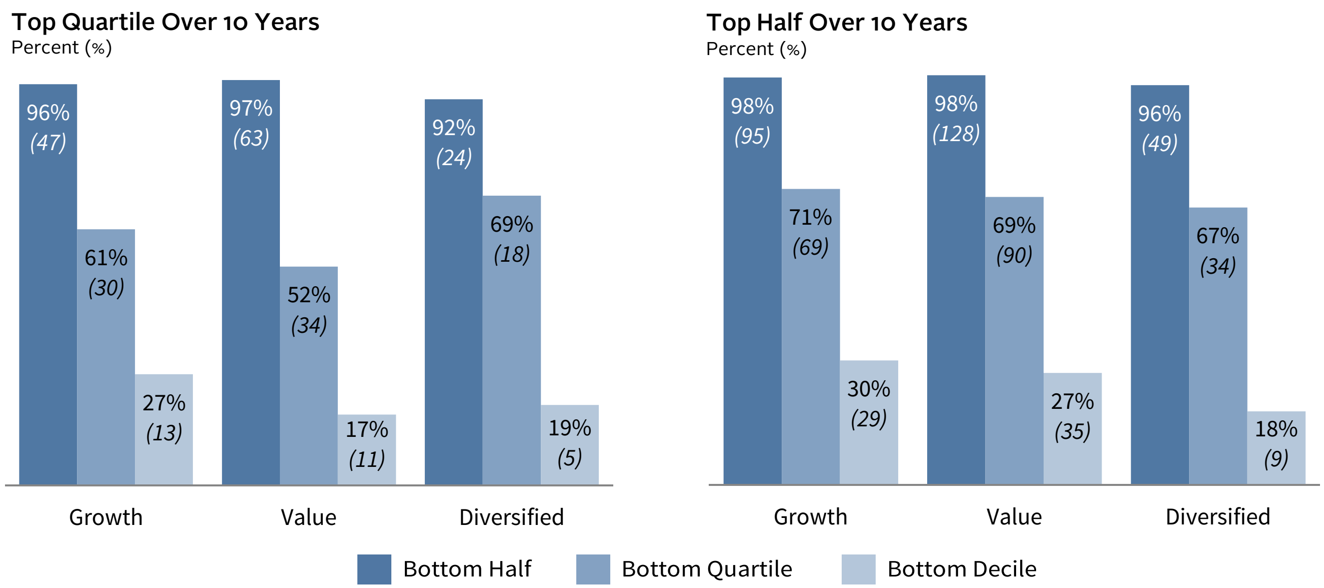
HOW MANY TOP US MID- TO LARGE-CAP MANAGERS UNDERPERFORM?

As of Fourth Quarter 2017

Sample Interpretation:

The left graph shows that 96% of top quartile growth managers in this ten-year period endured at least one three-year period of below-median performance during the ten years in which they were one of the best-performing managers among their peers. 61% of top quartile managers fell into the bottom quartile of growth manager returns for at least one three-year period in this decade. Note that the data apply to the winners—the top quartile managers over ten years.

Percentage (Number) of Top Managers Whose Rolling 3-Year Ranking Fell at Least Once into the Bottom of the Managers' Respective Distribution



Number Ranked in Top Quartile

Growth	Value	Diversified
49	65	26

Number Ranked in Top Half

Growth	Value	Diversified
97	130	51

Over half of all top quartile managers fell into the bottom quartile for at least one three-year period in the past ten years

Source: Cambridge Associates LLC.
Notes: Top managers are selected based on cumulative wealth for the entire ten-year period. 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.

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

Small company outperformance has usually been a tailwind for active managers

The trend held true in 2017, which saw a wider-than-average outperformance of capitalization-weighted stocks

ASSESSING THE IMPACT OF CAPITALIZATION BIAS ON ACTIVE MANAGER PERFORMANCE

2000–17

Active Managers Have Beaten the Russell 1000® Index 75% of the Time When the Largest Companies Have Underperformed the Average Company . . .

Year	Total Return (%) Cap-Wtd R1000®	Total Return (%) Equal-Wtd R1000®	Total Return (%) Median Mid-/Large-Cap Manager	*n*	Cap-Wtd Minus Equal-Wtd (ppts)	Mgr Value Added vs R1000® (ppts)
2009	28.4	52.6	30.5	*1,324*	-24.2	2.0
2000	-7.8	12.4	1.1	*1,028*	-20.1	8.9
2001	-12.5	1.6	-9.3	*1,123*	-14.0	3.1
2003	29.9	42.9	30.6	*1,194*	-13.0	0.7
2004	11.4	19.7	13.2	*1,220*	-8.3	1.8
2005	6.3	14.0	8.3	*1,249*	-7.8	2.0
2010	16.1	23.8	16.2	*1,291*	-7.7	0.1
2016	12.1	16.4	10.9	*1,145*	-4.3	-1.1
2002	-21.7	-17.7	-20.7	*1,166*	-3.9	0.9
2007	5.8	9.5	7.5	*1,346*	-3.7	1.7
2013	33.1	35.3	34.4	*1,214*	-2.2	1.3
2012	16.4	16.5	15.7	*1,251*	-0.1	-0.7
Mean	9.8	18.9	11.5		-9.1	1.7

. . . and Lagged the Index 83% of the Time When the Largest Companies Have Outperformed the Average Company

Year	Total Return (%) Cap-Wtd R1000®	Total Return (%) Equal-Wtd R1000®	Total Return (%) Median Mid-/Large-Cap Manager	*n*	Cap-Wtd Minus Equal-Wtd (ppts)	Mgr Value Added vs R1000® (ppts)
2006	15.5	14.9	15.0	*1,288*	0.5	-0.5
2011	1.5	0.7	0.3	*1,272*	0.8	-1.2
2008	-37.6	-38.9	-36.8	*1,359*	1.3	0.8
2014	13.2	11.1	11.9	*1,209*	2.2	-1.3
2017	**21.7**	**17.4**	**21.0**	***890***	**4.3**	**-0.7**
2015	0.9	-4.0	0.1	*1,196*	4.9	-0.8
Mean	2.5	0.2	1.9		2.3	-0.6

Sources: Cambridge Associates LLC, Frank Russell Company, and Thomson Reuters Datastream.
Notes: The most recent year is bolded. 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. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Off-benchmark holdings can benefit managers

Active managers lagged the MSCI US Index in 2017, marking the first instance since 2000 of relative underperformance when non-US stocks outperformed US stocks

ASSESSING THE IMPACT OF NON-US DEVELOPED MARKET STOCK PERFORMANCE ON ACTIVE MANAGER PERFORMANCE

2000–17

Active Managers Have Outperformed the MSCI US Index 89% of the Time When the Index Has Lagged the MSCI EAFE Index . . .

Year	Total Return (%) MSCI US	MSCI EAFE	Median Mid-/ Large-Cap Manager	*n*	MSCI US Minus MSCI EAFE (ppts)	Mgr Value Added vs MSCI US (ppts)
2006	14.7	26.3	15.0	*1,288*	-11.7	0.3
2003	28.4	38.6	30.6	*1,194*	-10.2	2.2
2004	10.1	20.3	13.2	*1,220*	-10.1	3.1
2005	5.1	13.5	8.3	*1,249*	-8.4	3.1
2002	-23.1	-15.9	-20.7	*1,166*	-7.2	2.4
2007	5.4	11.2	7.5	*1,346*	-5.7	2.1
2009	26.3	31.8	30.5	*1,324*	-5.5	4.2
2017	**21.2**	**25.0**	**21.0**	***890***	**-3.8**	**-0.2**
2012	15.3	17.3	15.7	*1,251*	-2.0	0.4
Mean	11.5	18.7	13.4		-7.2	1.9

. . . and Outperformed the MSCI US Index 56% of the Time When the Index Has Beaten the MSCI EAFE Index

Year	Total Return (%) MSCI US	MSCI EAFE	Median Mid-/ Large-Cap Manager	*n*	MSCI US Minus MSCI EAFE (ppts)	Mgr Value Added vs MSCI US (ppts)
2000	-12.8	-14.2	1.1	*1,028*	1.3	14.0
2015	0.7	-0.8	0.1	*1,196*	1.5	-0.6
2008	-37.6	-43.4	-36.8	*1,359*	5.8	0.7
2010	14.8	7.8	16.2	*1,291*	7.0	1.4
2013	31.8	22.8	34.4	*1,214*	9.0	2.7
2001	-12.4	-21.4	-9.3	*1,123*	9.1	3.1
2016	10.9	1.0	10.9	*1,145*	9.9	0.0
2011	1.4	-12.1	0.3	*1,272*	13.5	-1.1
2014	12.7	-4.9	11.9	*1,209*	17.6	-0.8
Mean	1.0	-7.3	3.2		8.3	2.2

Sources: Cambridge Associates LLC, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: The most recent year is bolded. 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. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

Years of cash outperformance have been good for active managers

But during the few instances when the Russell 1000® Index has lagged the 91-Day T-Bill, active managers have always outperformed

ASSESSING THE IMPACT OF CASH DRAG ON ACTIVE MANAGER PERFORMANCE

2000–17

Active Manager Performance versus the Russell 1000® Index Has Been Mixed When the Index Has Beaten the 91-Day T-Bill . . .

Year	Total Return (%) Russell 1000®	91-Day T-Bill	Median Mid-/ Large-Cap Manager	*n*	R1000® Minus T-Bill (ppts)	Mgr Value Added vs R1000® (ppts)
2013	33.1	0.1	34.4	*1,214*	33.0	1.3
2003	29.9	1.1	30.6	*1,194*	28.7	0.7
2009	28.4	0.2	30.5	*1,324*	28.2	2.0
2017	**21.7**	**0.9**	**21.0**	**890**	**20.8**	**-0.7**
2012	16.4	0.1	15.7	*1,251*	16.3	-0.7
2010	16.1	0.1	16.2	*1,291*	16.0	0.1
2014	13.2	0.0	11.9	*1,209*	13.2	-1.3
2016	12.1	0.3	10.9	*1,145*	11.7	-1.1
2006	15.5	4.8	14.9	*1,288*	10.6	-0.5
2004	11.4	1.3	13.2	*1,220*	10.1	1.8
2005	6.3	3.1	8.3	*1,249*	3.2	2.0
2011	1.5	0.1	0.3	*1,272*	1.4	-1.2
2015	0.9	0.1	0.1	*1,196*	0.9	-0.8
2007	5.8	5.0	7.5	*1,346*	0.8	1.7
Mean	15.2	1.2	15.4		13.9	$\boxed{0.2}$

. . . But When the Russell 1000® Index Has Lagged the 91-Day T-Bill, Active Managers Have Outperformed the Index 100% of the Time

Year	Total Return (%) Russell 1000®	91-Day T-Bill	Median Mid-/ Large-Cap Manager	*n*	R1000® Minus T-Bill (ppts)	Mgr Value Added vs R1000® (ppts)
2000	-7.8	6.2	1.1	*1,028*	-14.0	8.9
2001	-12.4	4.4	-9.3	*1,123*	-16.9	3.1
2002	-21.7	1.8	-20.7	*1,166*	-23.4	0.9
2008	-37.6	2.1	-36.8	*1,359*	-39.7	0.8
Mean	-19.9	3.6	-16.4		-23.5	$\boxed{3.4}$

Sources: BofA Merrill Lynch, Cambridge Associates LLC, Federal Reserve, Frank Russell Company, and Thomson Reuters Datastream.
Notes: The most recent year is bolded. 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. To be included in analysis of any period longer than one quarter, managers must have had performance available for the full period.

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