2ND QUARTER • 2018

ENDOWMENTS QUARTERLY

A LOOK AT ASSET ALLOCATION AND TOTAL RETURNS FOR US ENDOWMENTS AND FOUNDATIONS

The Cambridge Associates US endowment and foundation universe includes colleges and universities, cultural and environmental institutions, health care institutions, independent schools, and other endowed nonprofit institutions as well as foundations. This report provides asset allocation and return analyses for 386 US endowments and foundations that participated in our quarterly survey. The average market value of participating long-term investment portfolios was $1.2 billion. The median value was $293.6 million.

EXAMINING RETURNS

The mean return of the US endowment and foundation universe was 0.6% for the quarter ended June 30, 2018.[1] Trailing one-year returns averaged 8.0%. Returns for the trailing one-year period ranged from 10.7% at the 5th percentile to 5.8% at the 95th percentile.

Per the Consumer Price Index, the rate of inflation was 1.0% for second quarter 2018 and 2.9% for the trailing one-year period. Adjusting nominal returns to reflect inflation, the average real return for US endowments and foundations falls to -0.4% for the second quarter and 5.0% for the trailing one-year period.

RISK-ADJUSTED PERFORMANCE. Risk-adjusted performance is important to evaluate as it measures the total return relative to the total amount of risk taken by the portfolio. The most common approach to measuring risk-adjusted performance is by the Sharpe ratio, which shows how much return above the risk-free rate (T-bills) the investor has earned per unit of risk (defined as the standard deviation of returns). The higher the Sharpe ratio, the more the investor has been compensated for each unit of risk taken.

Risk-adjusted performance comparisons can be complicated when portfolios have significant allocations to private investments. The frequency and timing of private investment valuations can artificially dampen the standard deviation of returns for these assets. Thus, a portfolio with high allocations to private investments can yield a lower volatility statistic that does not fully represent to the amount of risk it has actually taken. For this reason, we have split institutions out into subcategories in Figure 13 based on their allocations to private investments.

1 Returns are reported net of external manager fees for 403 of the 405 insitutions in this universe. Past Cambridge Associates surveys have shown that approximately 15% of institutions also deduct investment oversight costs in the net of fee calculation.

Institutions that had an allocation of over 15% to private investments over the last five years reported an average Sharpe ratio of 1.54, significantly higher than that of the other subgroups with smaller private allocations. While the magnitude of the differences in average Sharpe ratios is partly a function of this group's higher average five-year return, it is also attributable to its lower average standard deviation.

TRAILING ONE-YEAR RESULTS

Asset allocation is a key contributor to the total return that a portfolio earns. Figure 7 explores this relationship and illustrates how general asset allocation structures vary across the four performance quartiles of the overall participant group. In this figure, each institution's asset allocation was averaged across the beginning and ending points for the trailing one-year period. The four quartiles in the heat map table represent the average of the institutions within each quartile.

The chart of index returns in Figure 7 provides the context of the market environment for the period. Private investment indexes are pooled horizon internal rates of return (IRRs) net of fees, expenses, and carried interest, and public indexes are time-weighted returns. Included alongside the private benchmark IRRs are public market returns on a modified public market equivalent basis (mPME). The CA mPME replicates private investment performance under public market conditions and allows for an appropriate comparison of private and public market returns.[2] The mPME analysis evaluates what return would have been earned had the dollars invested in private investments been invested in the public market index instead. Three of the four private investment indexes shown in Figure 7 outperformed their respective mPME.

Endowments and foundations that posted a trailing one-year return in the top quartile had the highest average allocation to PE/VC (13.8%) and private real assets (7.4%). In contrast, institutions in the bottom quartile had the lowest average allocation to both PE/VC (4.7%) and private real assets (2.2%). There was also a considerable difference between the top and bottom quartiles in the average bond allocation. Institutions in the top performance quartile had the lowest average allocation to bonds (6.8%), while those in the bottom performance quartile had the highest average allocation (12.4%).

ONE-YEAR ATTRIBUTION. Although asset allocation is a key driver of performance, it does not fully explain the variation of returns that are reported across different institutions. The execution or implementation of an asset allocation strategy also contributes to the total returns that portfolios earn. We do not have the level of detailed data that is necessary to perform a precise attribution analysis, but our data does allow us to conduct an estimated analysis that can help illuminate the main drivers of performance for the trailing one-year period.

Figure 8 illustrates the results of an estimated attribution analysis based on the one-year return and beginning fiscal year asset allocation of 382 endowments and foundations that provided sufficient data. The portion of the mean participant return

2 Under the CA mPME methodology, the public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME net asset value is a function of mPME cash flows and public index returns.

that can be attributed to asset allocation is calculated using a blend of representative asset class benchmarks weighted according to each institution's asset allocation. The return from other factors is calculated by subtracting the mean asset allocation return from the mean participant return. This "other" portion of returns is principally driven by implementation or execution decisions, which can include active management and manager selection.[3] The attribution analysis estimates the average portfolio generated an asset allocation return of 8.7% for the trailing one-year period and an implementation return of -0.6%. In other words, implementation decisions actually detracted from total investment performance for the average portfolio over this one-year period.

US equities, which returned 14.8% for the trailing one-year period and had the highest average allocation among the detailed asset classes, had the greatest impact of all the asset class return contributors (3.3%). Global ex US developed equities (1.2%) and emerging markets equities (0.7%) also made significant positive contributions to overall portfolio performance. Index returns were positive for all except two asset class (emerging markets bonds and US bonds) over this one-year period.

Figure 8 also provides a breakdown of the attribution data into the four performance quartiles of the overall group, which highlights the different experiences among institutions. The top performance quartile had the highest mean asset allocation return (9.3%) while the bottom performance quartile had the lowest (8.2%). The model estimates that there even a wider gap between the top and bottom performance quartiles when it came to the performance impact of implementation decisions. On average, the top quartile of performers added 70 basis points (bps) in performance through implementation decisions while the bottom quartile lost 200 bps.

A NOTE ON PERFORMANCE REPORTING METHODOLOGIES. The methodology by which private investment returns are reported can have an impact on peer performance statistics, particularly for trailing one-year periods and shorter. Most participants with private investment allocations in this study reported their trailing one-year private investment returns on a partial basis. Under this method, only three quarters of private returns are incorporated for the trailing one-year period. As June 30 valuations become available, second quarter returns will be restated to reflect actual private performance. The lagged basis was the second most frequently used methodology for institutions with private investment allocations. For these investors, the trailing one-year return included four quarters of private investment performance (April 1, 2017, to March 31, 2018).

The key difference between these two methodologies is the extra quarter of private investment performance that is incorporated into the lagged basis methodology. For the trailing one-year return that extra quarter was second quarter 2017, a quarter in which three of the four major private indexes generated positive returns. A portfolio using the lagged methodology would likely report a higher trailing one-year return

3 This model assumes that flows to and from investment managers take place on the last day of the fiscal year. In addition, the analysis uses a standard set of asset class benchmarks that may be more or less representative of the asset allocation policy across different institutions. Therefore, the portion of returns from other factors may also include some residual/unattributable asset allocation effects.

CAMBRIDGE ASSOCIATES PRIVATE INVESTMENT INDEX RETURNS

	One Quarter End-to-End Pooled Return (%)				
	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018
US Private Equity	3.5	4.0	5.3	2.7	NA
US Venture Capital	1.4	3.3	3.0	4.0	NA
Real Estate	3.6	3.1	3.7	2.8	NA
Natural Resources	-0.4	1.6	3.8	0.7	NA

Lagged Basis Partial Basis

Source: Cambridge Associates LLC.
Note: NA indicates data were not available.

relative to that calculated using the partial methodology. The impact of using the lagged basis methodology relative to the partial basis methodology will be greater for portfolios with larger allocations to private investments.

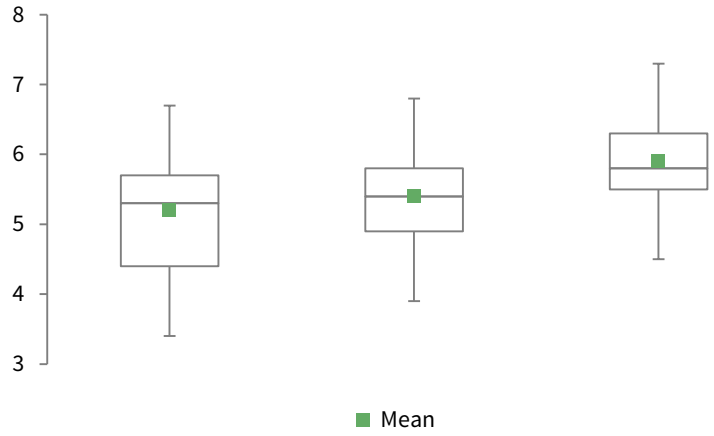
TRAILING TEN-YEAR RESULTS

As noted earlier, asset allocation can be a factor in the variation in returns reported across the participant group. Although the analysis of asset allocation structures on a one-year basis is informative, this short-term analysis can lead to different results from one period to the next as market conditions shift. To investigate the impact of asset allocation policies on long-term investment performance, an analysis of data over an extended period is most suitable. Figure 9 breaks the participant group down into four quartiles based on the trailing ten-year investment return. Each institution's asset allocation was averaged across the 11 June 30 periods that fell from 2008 to 2018. The four quartiles in the heat map table represent the average of the institutions within each quartile.

The indexes for US equity, non-venture private equity, and venture capital were among the best performing asset class benchmarks for the trailing ten-year period. The top quartile of performers over this period reported the highest average allocation to US equity (22.6%) and PE/VC (11.1%). The top quartile of performers also reported the highest average allocation to private real assets (7.5%). The dispersion in private investment allocations among the four performance quartiles is consistent with the analyses we have conducted for prior trailing ten-year periods. Institutions that place significant emphasis on peer performance statistics should note the distinction in average asset allocation policies between top and bottom performers, particularly among private investments.

The figure on the next page organizes participants into three subgroups based on each institution's trailing ten-year average allocation to private investments. The median ten-year return for portfolios with an allocation of over 15% to private investments was 5.8%, approximately 50 bps higher than the median return reported by portfolios with little to no private investment allocation. The distribution of returns for the three subgroups shows a wide range of results, a disclaimer that portfolios with high

RANGE OF 10-YR RETURNS BY PRIVATE INVESTMENT ALLOCATION
As of June 30, 2018 • Percent (%)



	Private Investment Allocation		
	Under 5%	5% – 15%	Over 15%
5th Percentile	7.0	6.7	7.3
25th Percentile	5.7	5.8	6.3
Median	5.3	5.4	5.8
75th Percentile	4.4	4.9	5.5
95th Percentile	3.9	4.3	4.7
Mean	5.2	5.4	5.9
n	*52*	*87*	*98*

Source: Endowment and foundation data as reported to Cambridge Associates LLC.
Notes: Each institution's private investment allocation represents the mean for the 11 June 30 periods from 2008 to 2018. Returns are annualized.

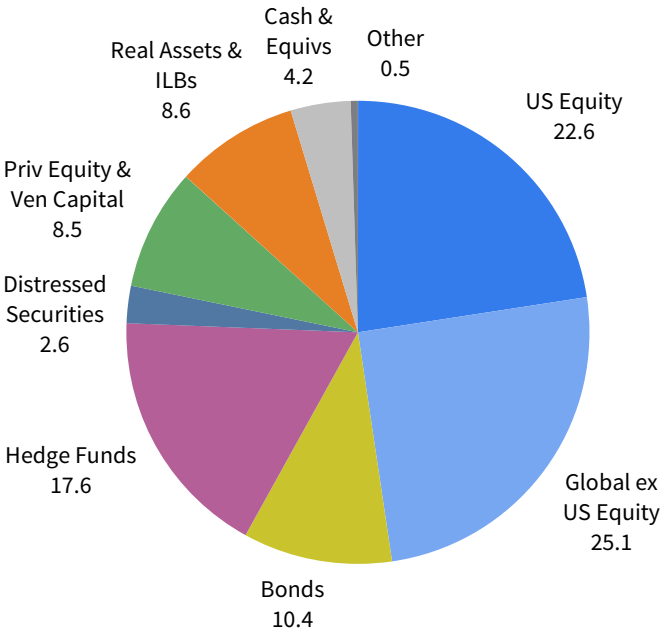
allocations to private investments can underperform the overall peer group, while those with low private investment allocations can outperform. However, these ten-year analyses show that allocations to private investments generally are a key factor in a portfolio's relative performance within the overall participant group over the long-term. Institutions that benchmark peer performance should consider the subgroup median that aligns with their own private investment allocation as an alternative or complement to the peer medians that they already use.

TEN-YEAR ATTRIBUTION. The attribution model also points to an outperforming asset allocation structure for the top performance quartile over the last decade. The model suggests that implementation decisions were also responsible for much of the dispersion in performance between top and bottom performers over this long-term period. Figure 10 shows that the top performance quartile had a mean asset class return of 5.5%, approximately 1.1 percentage point higher than the bottom performance quartile. The top performance quartile also added another 1.2% through implementation decisions while the bottom performance quartile added no value through active management of the portfolio. ■

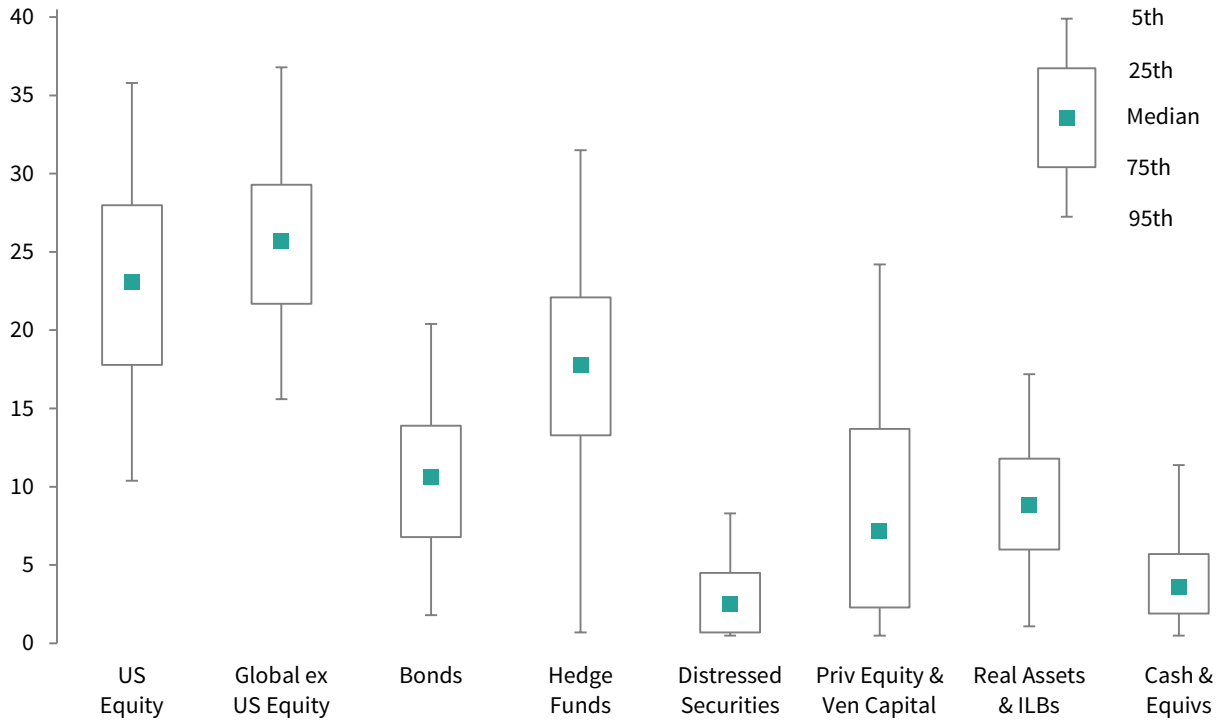
FIGURE 1. ASSET ALLOCATION SNAPSHOT: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

Mean Asset Allocation



Distribution by Asset Class: Asset Allocation

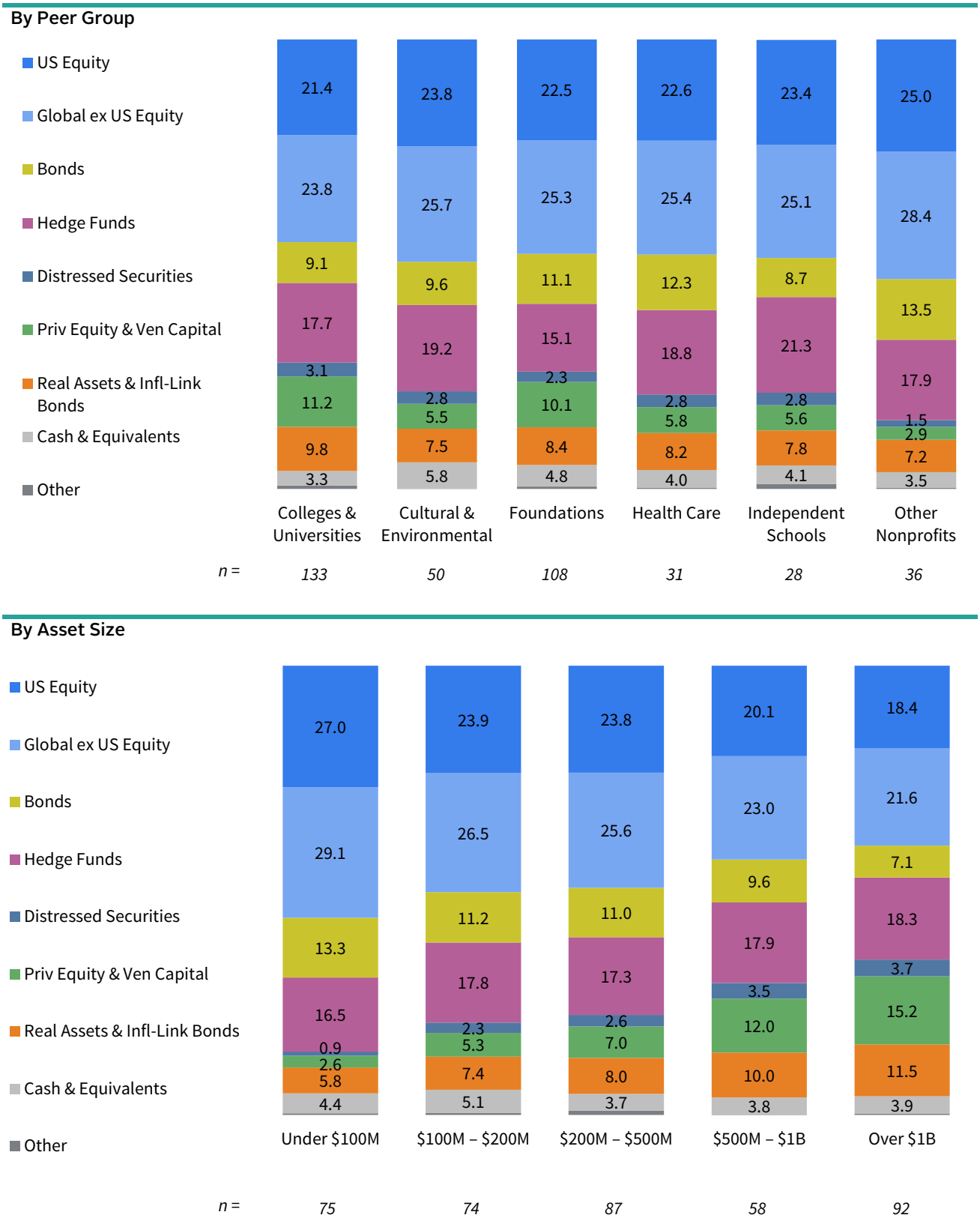


Source: Endowment and foundation data as reported to Cambridge Associates LLC.

Note: Analysis includes data for 386 institutions.

FIGURE 2. SUMMARY ASSET ALLOCATION: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)



Source: Endowment and foundation data as reported to Cambridge Associates LLC.

FIGURE 3. DETAILED ASSET ALLOCATION BY PEER GROUP: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

	Colleges & Universities *n = 133*		Cultural & Environmental *50*		Foundations *108*		Health Care *31*		Independent Schools *28*		Other Nonprofits *36*	
	Mean	Med	Mean	Med	Mean	Med	Mean	Med	Mean	Med	Mean	Med
US Equity	**21.4**	**21.4**	**23.8**	**23.7**	**22.5**	**21.6**	**22.6**	**24.9**	**23.4**	**22.1**	**25.0**	**26.7**
Global ex US Equity	**23.8**	**23.8**	**25.7**	**26.6**	**25.3**	**25.3**	**25.4**	**25.5**	**25.1**	**24.9**	**28.4**	**27.6**
Developed Markets	15.9	15.6	17.2	17.3	17.1	17.2	18.3	18.4	17.5	17.8	20.2	19.3
Emerging Markets	7.8	7.6	8.5	8.6	8.2	8.4	7.0	6.6	7.7	7.5	8.2	8.4
Bonds	**9.1**	**9.4**	**9.6**	**9.1**	**11.1**	**10.5**	**12.3**	**12.7**	**8.7**	**9.2**	**13.5**	**12.3**
US Bonds	8.0	8.2	8.6	7.9	9.8	9.5	11.0	10.5	8.0	8.2	11.8	11.6
Global ex US Bonds (DM)	0.5	0.0	0.2	0.0	0.3	0.0	0.5	0.0	0.2	0.0	0.6	0.0
Global ex US Bonds (EM)	0.3	0.0	0.4	0.0	0.3	0.0	0.5	0.0	0.3	0.0	0.8	0.0
High-Yield Bonds	0.3	0.0	0.3	0.0	0.7	0.0	0.3	0.0	0.2	0.0	0.3	0.0
Hedge Funds	**17.7**	**17.2**	**19.2**	**18.3**	**15.1**	**15.7**	**18.8**	**18.2**	**21.3**	**21.2**	**17.9**	**18.4**
Long/Short Hedge Funds	6.8	5.8	6.9	5.0	5.4	4.8	7.7	6.3	9.7	7.5	5.7	5.3
Absolute Return (ex Distressed)	10.9	10.7	12.2	11.4	9.8	9.7	11.2	10.9	11.6	10.4	12.1	11.6
Distressed Securities	**3.1**	**2.6**	**2.8**	**1.5**	**2.3**	**1.9**	**2.8**	**1.8**	**2.8**	**1.7**	**1.5**	**0.3**
Hedge Fund Structure	1.7	1.3	1.9	0.1	1.1	0.0	2.0	1.3	1.3	0.0	0.9	0.0
Private Equity Structure	1.4	0.8	0.9	0.5	1.1	0.6	0.8	0.0	1.5	0.7	0.6	0.0
PE & VC	**11.2**	**10.3**	**5.5**	**3.5**	**10.1**	**9.1**	**5.8**	**3.1**	**5.6**	**5.3**	**2.9**	**1.3**
Non-Venture Private Equity	5.3	4.5	2.4	1.3	3.8	2.7	2.8	0.9	2.6	1.8	0.9	0.4
Venture Capital	4.8	3.7	2.4	0.7	5.0	2.3	2.3	1.0	1.8	1.0	1.5	0.1
Other Private Investments	1.0	0.2	0.6	0.1	1.3	0.3	0.8	0.0	1.3	0.2	0.4	0.0
Real Assets & Infl-Linked Bonds	**9.8**	**9.5**	**7.5**	**7.3**	**8.4**	**8.7**	**8.2**	**7.5**	**7.8**	**6.1**	**7.2**	**7.2**
Private Real Estate	2.1	1.5	1.2	0.2	1.9	0.9	1.8	0.3	1.6	0.0	0.6	0.0
Public Real Estate	0.7	0.0	0.3	0.0	0.5	0.0	0.6	0.0	0.1	0.0	0.6	0.0
Commodities	0.5	0.0	0.5	0.0	0.6	0.0	0.4	0.0	0.6	0.0	0.5	0.0
Inflation-Linked Bonds	0.4	0.0	0.9	0.0	0.4	0.0	0.5	0.0	0.3	0.0	0.6	0.0
Private O&G/Nat Resources	3.4	3.2	2.1	1.0	2.3	1.5	1.8	0.6	2.4	1.9	1.2	0.2
Timber	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Public Energy/Nat Resources	2.5	2.2	2.4	1.7	2.6	1.8	3.0	1.8	2.8	2.4	3.8	3.7
Cash & Equivalents	**3.3**	**2.8**	**5.8**	**4.5**	**4.8**	**3.0**	**4.0**	**2.7**	**4.1**	**3.6**	**3.5**	**2.4**
Other Assets	**0.7**	**0.0**	**0.1**	**0.0**	**0.5**	**0.0**	**0.2**	**0.0**	**1.1**	**0.0**	**0.2**	**0.0**

Source: Endowment and foundation data as reported to Cambridge Associates LLC.

FIGURE 4. DETAILED ASSET ALLOCATION BY ASSET SIZE: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

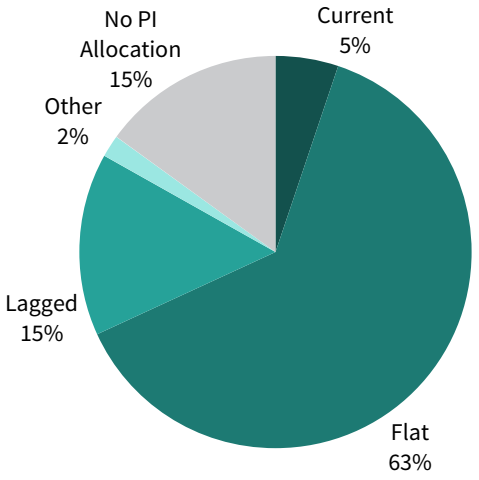
	All Endow & Fdn *n = 386*		Under $100M *75*		$100M – $200M *74*		$200M – $500M *87*		$500M – $1B *58*		Over $1B *92*	
	Mean	Med	Mean	Med	Mean	Med	Mean	Med	Mean	Med	Mean	Med
US Equity	**22.6**	**22.6**	**27.0**	**28.1**	**23.9**	**24.2**	**23.8**	**23.2**	**20.1**	**20.8**	**18.4**	**17.1**
Global ex US Equity	**25.1**	**25.2**	**29.1**	**29.4**	**26.5**	**26.2**	**25.6**	**25.7**	**23.0**	**23.9**	**21.6**	**21.3**
Developed Markets	17.1	17.0	21.2	21.2	18.2	18.1	17.5	17.5	15.3	15.7	13.8	13.4
Emerging Markets	8.0	7.9	7.8	7.8	8.3	8.5	8.1	8.2	7.8	7.4	7.9	7.3
Bonds	**10.4**	**10.1**	**13.3**	**12.5**	**11.2**	**11.6**	**11.0**	**11.1**	**9.6**	**9.0**	**7.1**	**6.5**
US Bonds	9.2	9.1	11.9	11.8	10.0	10.7	10.1	9.5	8.4	8.8	6.0	6.0
Global ex US Bonds (DM)	0.4	0.0	0.3	0.0	0.3	0.0	0.4	0.0	0.3	0.0	0.6	0.0
Global ex US Bonds (EM)	0.4	0.0	0.6	0.0	0.7	0.0	0.2	0.0	0.4	0.0	0.2	0.0
High-Yield Bonds	0.4	0.0	0.5	0.0	0.3	0.0	0.3	0.0	0.6	0.0	0.3	0.0
Hedge Funds	**17.6**	**17.3**	**16.5**	**16.4**	**17.8**	**17.0**	**17.3**	**17.1**	**17.9**	**17.7**	**18.3**	**18.4**
Long/Short Hedge Funds	6.6	5.7	5.4	4.1	6.2	4.9	6.1	5.3	7.0	6.2	8.2	8.1
Absolute Return (ex Distressed)	10.9	10.8	11.1	10.5	11.6	11.0	11.2	11.3	10.9	10.6	10.1	10.0
Distressed Securities	**2.6**	**2.0**	**0.9**	**0.0**	**2.3**	**1.4**	**2.6**	**2.1**	**3.5**	**2.9**	**3.7**	**3.0**
Hedge Fund Structure	1.5	0.3	0.5	0.0	1.2	0.0	1.6	0.9	2.0	1.6	2.1	1.7
Private Equity Structure	1.1	0.6	0.4	0.0	1.1	0.6	1.1	0.5	1.5	1.2	1.6	1.0
PE & VC	**8.5**	**6.7**	**2.6**	**0.3**	**5.3**	**4.2**	**7.0**	**6.2**	**12.0**	**10.9**	**15.2**	**14.4**
Non-Venture Private Equity	3.7	2.5	0.6	0.0	1.7	0.9	3.1	2.4	5.6	4.9	7.2	7.5
Venture Capital	3.8	1.9	1.0	0.0	2.1	1.1	3.0	1.9	5.3	3.8	7.3	6.1
Other Private Investments	1.0	0.2	0.9	0.0	1.4	0.9	1.0	0.7	1.1	0.3	0.7	0.0
Real Assets & Infl-Linked Bonds	**8.6**	**8.3**	**5.8**	**5.4**	**7.4**	**7.3**	**8.0**	**7.9**	**10.0**	**9.9**	**11.5**	**10.5**
Private Real Estate	1.7	0.8	0.5	0.0	0.5	0.0	1.2	0.6	2.5	1.6	3.7	2.9
Public Real Estate	0.5	0.0	0.3	0.0	0.3	0.0	0.5	0.0	1.0	0.0	0.5	0.0
Commodities	0.5	0.0	0.5	0.0	0.6	0.0	0.6	0.0	0.3	0.0	0.6	0.0
Inflation-Linked Bonds	0.5	0.0	0.5	0.0	0.8	0.0	0.4	0.0	0.3	0.0	0.4	0.0
Private O&G/Nat Resources	2.5	1.7	0.6	0.0	1.9	1.2	1.8	1.7	3.3	3.2	4.8	4.7
Timber	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.3	0.0
Public Energy/Nat Resources	2.7	2.2	3.3	3.1	3.3	3.0	3.3	3.4	2.4	2.5	1.3	0.0
Cash & Equivalents	**4.2**	**3.1**	**4.4**	**3.1**	**5.1**	**3.3**	**3.7**	**2.9**	**3.8**	**3.2**	**3.9**	**3.0**
Other Assets	**0.5**	**0.0**	**0.4**	**0.0**	**0.5**	**0.0**	**1.0**	**0.0**	**0.1**	**0.0**	**0.3**	**0.0**

Source: Endowment and foundation data as reported to Cambridge Associates LLC.

FIGURE 5. PERFORMANCE REPORTING METHODOLOGIES: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018

Performance Reporting Methodology

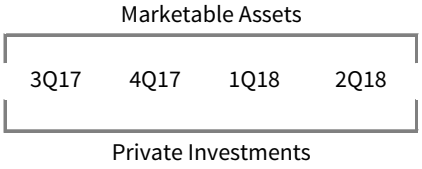


By Asset Size

	Current Basis	Partial Basis	Lagged Basis	Other	No PI Allocation
Under $100M	—	57%	—	—	43%
n		*43*			*32*
$100M – $200M	—	78%	—	—	22%
n		*58*			*16*
$200M – $500M	—	89%	2%	2%	7%
n		*77*	*2*	*2*	*6*
$500M – $1B	12%	67%	14%	3%	3%
n	*7*	*39*	*8*	*2*	*2*
Over $1B	14%	28%	52%	3%	2%
n	*13*	*26*	*48*	*3*	*2*

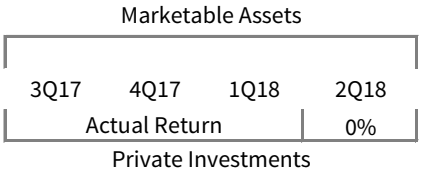
Current Basis

Total investment pool return for the trailing one-year period includes marketable asset performance and private investment performance for July 1, 2017, to June 30, 2018.



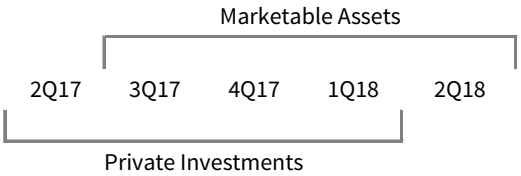
Partial Basis

Total investment pool return for the trailing one-year period includes marketable asset performance for July 1, 2017, to June 30, 2018. Private investment portion of the investment pool reflects actual performance for July 1, 2017, to March 31, 2018, and a flat return (0%) for April 1, 2018, to June 30, 2018.



Lagged Basis

Total investment pool return for the trailing one-year period includes marketable asset performance for July 1, 2017, to June 30, 2018, and private investment performance for April 1, 2017, to March 31, 2018.

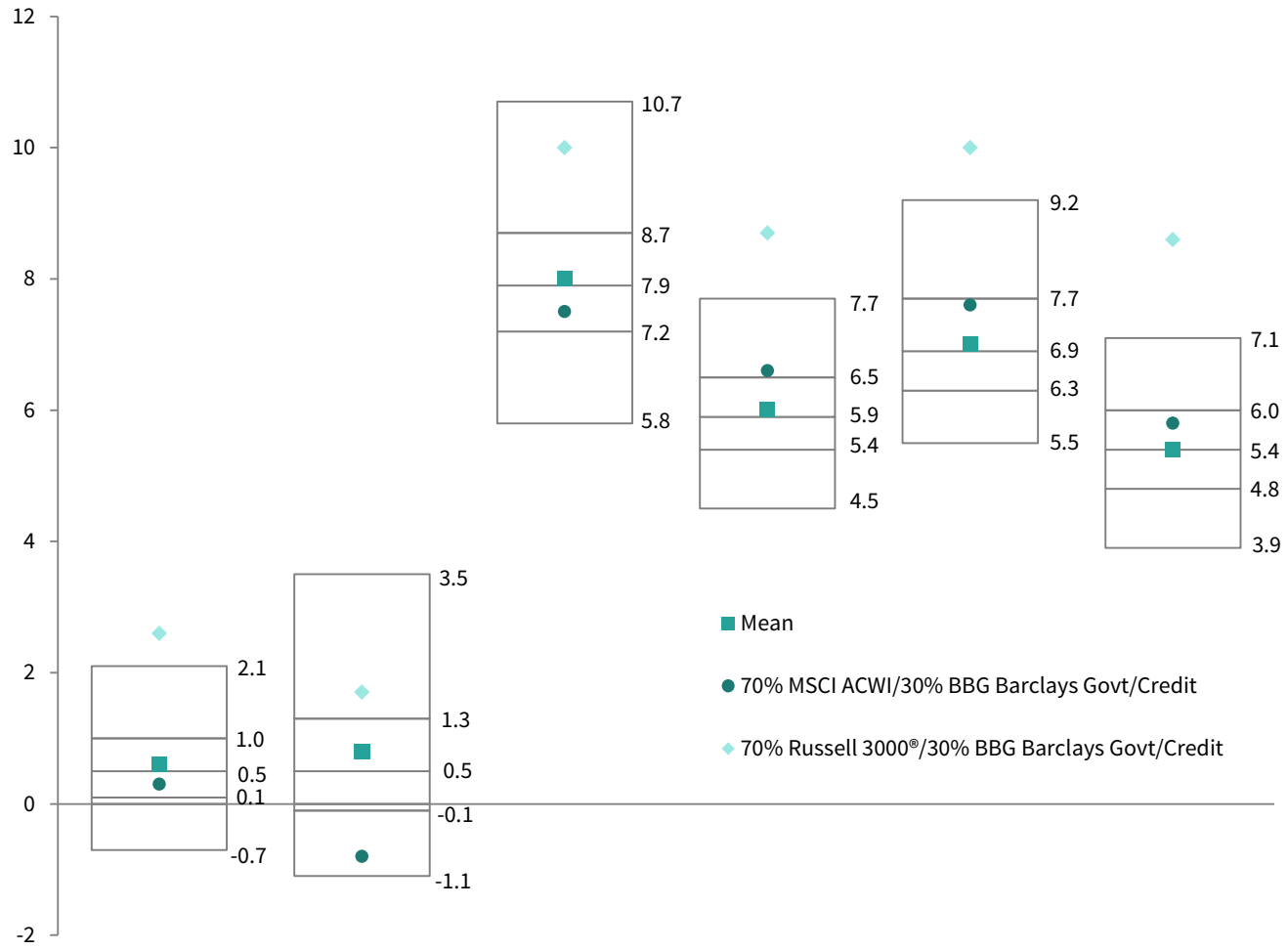


Source: Endowment and foundation data as reported to Cambridge Associates LLC.

Notes: Analysis includes data for 386 institutions. Private investments include total allocation to non-venture private equity, venture capital, distressed securities (private equity structure), private oil & gas/natural resources, timber, private real estate, and other private investments. Institutions with no significant private investment allocations (<1% of their total investment portfolios) are reflected in the No PI Allocation category in the pie graph and table by asset size.

FIGURE 6. NOMINAL RETURN PERCENTILES: US ENDOWMENTS AND FOUNDATIONS

Periods Ended June 30, 2018 • Percent (%)



	Latest Quarter	Calendar YTD	One Year	Three Years	Five Years	Ten Years
Mean	0.6	0.8	8.0	6.0	7.0	5.4
n	*386*	*386*	*386*	*384*	*379*	*352*
70% Global Equities / 30% US Bonds	0.3	-0.8	7.5	6.6	7.6	5.8
70% US Equities / 30% US Bonds	2.6	1.7	10.0	8.7	10.0	8.6

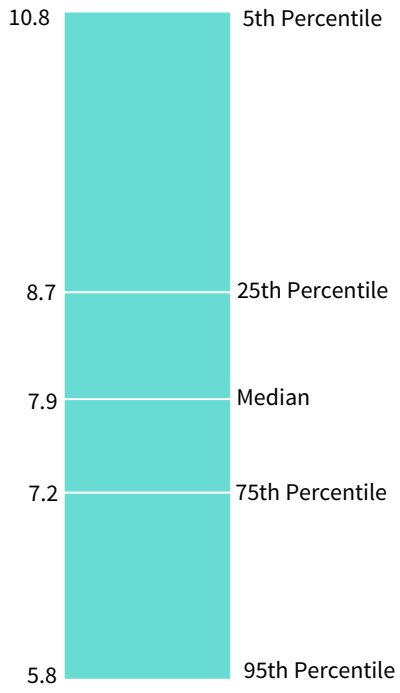
Sources: Endowment and foundation data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited, Frank Russell Company, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Notes: Three-, five-, and ten-year returns are annualized. The 70/30 simple portfolio benchmarks are calculated assuming rebalancing occurs on the final day of each quarter. Global equity performance represented by MSCI All Country World Index (ACWI). Total returns for the MSCI ACWI are net of dividend taxes for global ex US securities. US equity performance represented by Russell 3000®. US bond performance represented by Bloomberg Barclays Government/Credit Bond Index.

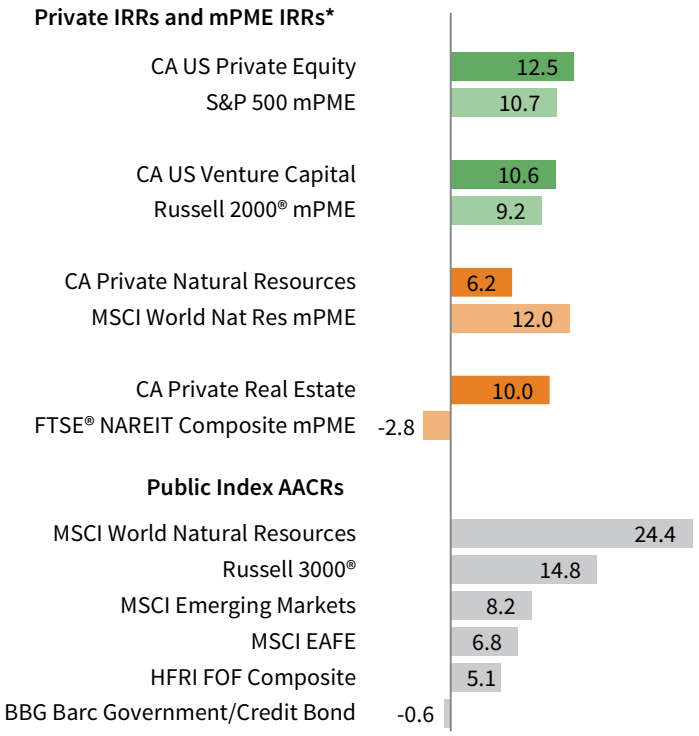
FIGURE 7. 1-YR ASSET ALLOCATION OF TOP AND BOTTOM PERFORMERS: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

1-Yr Return Distribution

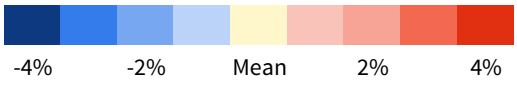


1-Yr Index Returns



Mean Asset Allocation by Performance Quartile: June 30, 2017 to June 30, 2018

Quartile	US Equity	DM ex US Eqty	EM Equity	Bonds	Hedge Funds	Dist Sec	PE & VC	Priv RA	Pub RA & ILBs	Cash	Other
Top Quartile	21.4	14.3	7.8	6.8	17.6	3.5	13.8	7.4	3.4	3.9	0.2
2nd Quartile	21.4	17.2	8.3	10.0	18.3	3.0	8.9	4.8	4.2	3.6	0.2
3rd Quartile	24.1	18.5	8.0	12.2	17.6	2.0	5.5	2.7	5.4	3.6	0.6
Bottom Quartile	23.6	18.7	8.6	12.4	18.1	1.9	4.7	2.2	4.0	5.0	0.8
E&F Universe Mean	22.6	17.2	8.2	10.3	17.9	2.6	8.2	4.3	4.2	4.0	0.5



Sources: Endowment and foundation data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited, Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., the National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

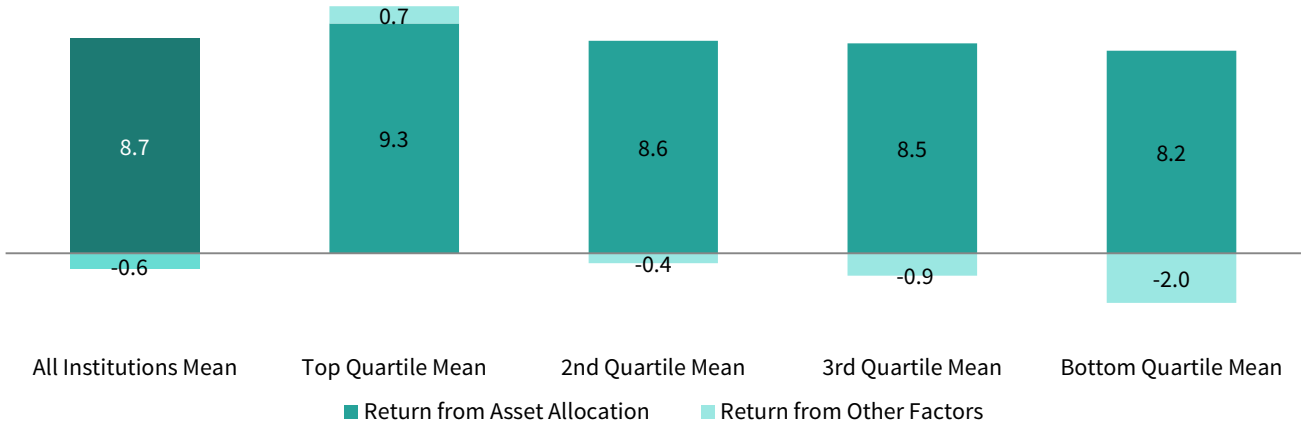
Note: Analysis includes data for 382 institutions.

* Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest. The CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. Private benchmark IRRs and mPME IRRs are for the period 7/1/17 to 3/31/18.

FIGURE 8. 1-YR RETURN ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

1-Yr Mean Return Attribution Analysis by Quartile



Breakdown of Return from Asset Allocation for All Institutions

Asset Class	Mean Asset Allocation	Asset Class Benchmark Return	Contribution to Asset Class Return
US Equity	22.6	14.8	3.3
Global ex US Equity-Developed Mkts	17.2	6.8	1.2
Global ex US Equity-Emerging Mkts	8.3	8.2	0.7
Public Energy / Natural Resources	2.7	24.4	0.7
Long/Short Hedge Funds	6.7	8.3	0.6
Absolute Return (ex Distressed)	11.5	5.2	0.6
Non-Venture Private Equity	3.6	12.2	0.5
Venture Capital	3.5	10.4	0.4
Private Real Estate	1.8	10.0	0.2
Private Oil & Gas / Natural Resources	2.3	6.1	0.2
Distressed-Hedge Fund Structure	1.5	5.1	0.1
Distressed-Private Equity Structure	1.1	6.5	0.1
Other Private Investments	0.9	11.3	0.1
Cash & Equivalents	3.9	1.4	0.1
Global ex US Bonds-Developed Mkts	0.4	3.2	0.0
Global ex US Bonds-Emerging Mkts	0.5	-1.6	0.0
High Yield Bonds	0.4	2.8	0.0
Public Real Estate	0.5	4.9	0.0
Commodities	0.6	7.3	0.0
Inflation-Linked Bonds	0.5	2.1	0.0
Timber	0.2	3.1	0.0
Other	0.4	1.4	0.0
US Bonds	9.0	-0.6	-0.1

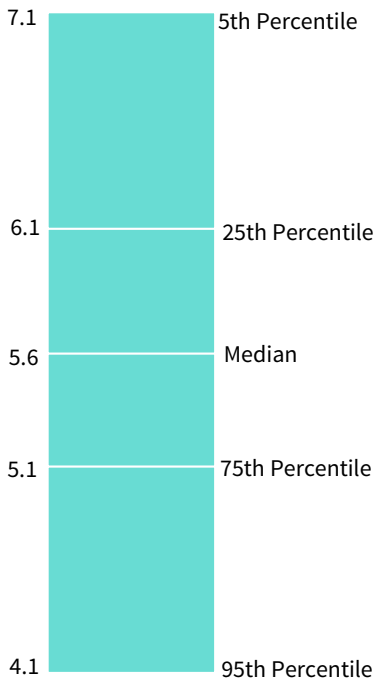
Sources: Endowment and foundation as reported to Cambridge Associates LLC. Index data provided by Bloomberg Index Services Limited, BofA Merrill Lynch, Cambridge Associates LLC, FTSE Fixed Income LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., J.P. Morgan Securities, Inc., MSCI Inc., The National Association of Real Estate Investment Trusts, and the National Council of Real Estate Investment Fiduciaries. MSCI data provided "as is" without any express or implied warranties.

Notes: Includes data for 382 institutions that provided beginning year asset allocation. Mean asset allocation is as of June 30, 2017. The sum of the contribution to asset class return for all categories in the table equals the amount of the total return that was explained by asset allocation. To be consistent with the methodology in which private investment returns are incorporated into the total portfolio composite calculation, private investment benchmark returns are linked quarterly end-to-end returns. This model assumes that flows to and from investment managers take place on the last day of the fiscal year. In addition, the analysis uses a standard set of asset class benchmarks that may be more or less representative of the asset allocation policy across different institutions. Therefore, the portion of returns from other factors shown in the bar chart may also include some residual/unattributable asset allocation effects.

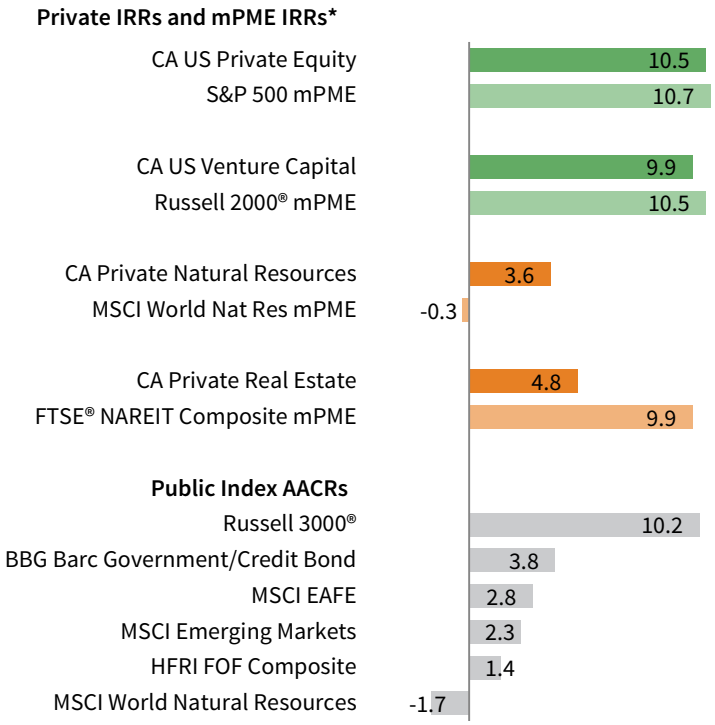
FIGURE 9. 10-YR ASSET ALLOCATION OF TOP AND BOTTOM PERFORMERS: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)

10-Yr Return Distribution

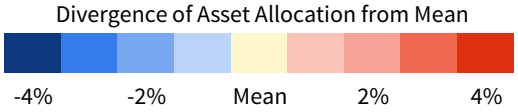


10-Yr Index Returns



Mean Asset Allocation by Performance Quartile: June 30, 2008 to June 30, 2018

Quartile	US Equity	DM ex US Eqty	EM Equity	Bonds	Hedge Funds	Dist Sec	PE & VC	Priv RA	Pub RA & ILBs	Cash	Other
Top Quartile	22.6	13.9	6.6	10.1	16.9	3.8	11.1	7.5	3.6	3.6	0.2
2nd Quartile	19.9	13.9	6.6	10.8	21.1	3.6	9.7	5.6	4.8	3.5	0.5
3rd Quartile	19.8	15.0	6.9	12.9	19.7	3.5	7.7	4.6	6.4	3.3	0.3
Bottom Quartile	19.7	15.6	6.7	15.0	19.3	2.8	5.4	2.6	7.5	4.8	0.5
E&F Universe Mean	20.5	14.6	6.7	12.2	19.3	3.4	8.5	5.1	5.5	3.8	0.4



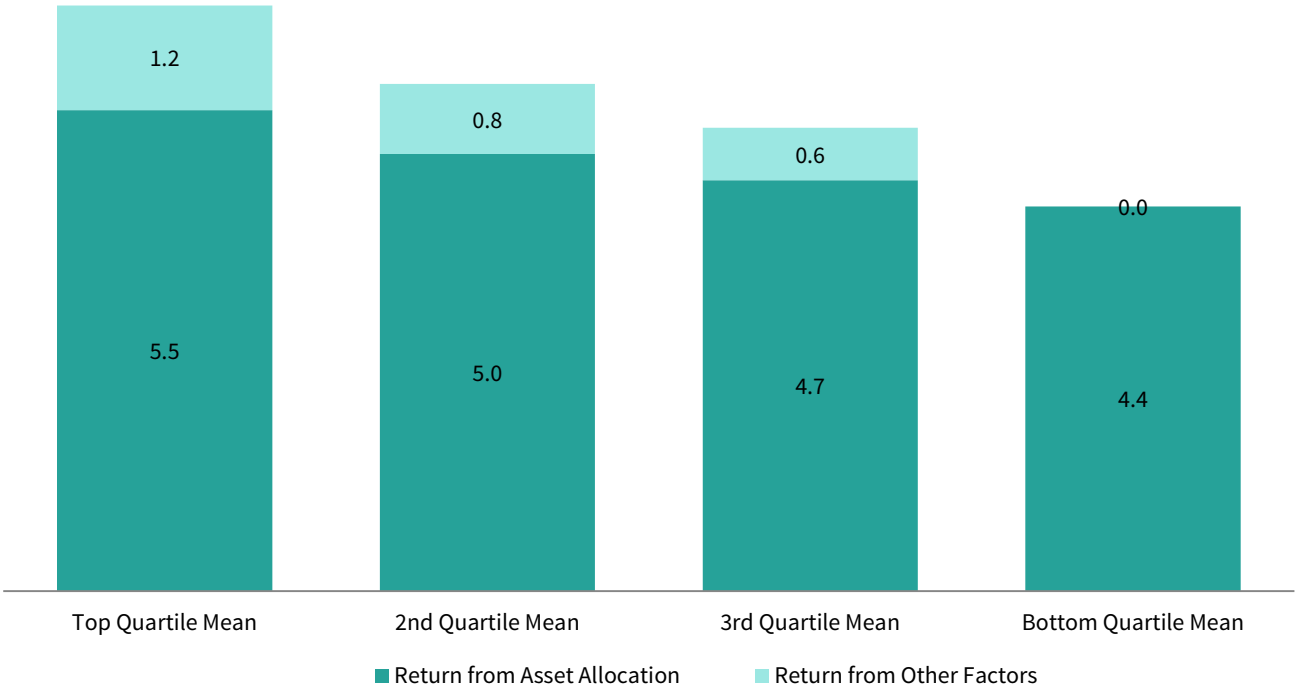
Sources: Endowment and foundation data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited, Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., the National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: Analysis includes data for 237 institutions.

* Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest. The CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. Private benchmark IRRs and mPME IRRs are for the period 7/1/08 to 3/31/18.

FIGURE 10. 10-YR ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE: US ENDOWMENTS AND FOUNDATIONS

As of June 30, 2018 • Percent (%)



Sources: Endowment and foundation as reported to Cambridge Associates LLC. Index data provided by Bloomberg Index Services Limited, BofA Merrill Lynch, Cambridge Associates LLC, Citigroup Global Markets, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., J.P. Morgan Securities, Inc., MSCI Inc., The National Association of Real Estate Investment Trusts, and the National Council of Real Estate Investment Fiduciaries. MSCI data provided "as is" without any express or implied warranties.

Notes: Includes data for 237 institutions that provided beginning year asset allocation.

This model assumes that flows to and from investment managers take place on the last day of the fiscal year. In addition, the analysis uses a standard set of asset class benchmarks that may be more or less representative of the asset allocation policy across different institutions. Therefore, the portion of returns from other factors may also include some residual/unattributable asset allocation effects.

FIGURE 11. NOMINAL TOTAL RETURN SUMMARY BY PEER GROUP: US ENDOWMENTS AND FOUNDATIONS

Periods Ended June 30, 2018 • Percent (%)

			Average Annual Compound Return			
	Latest Qtr	Calendar YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Colleges & Universities						
5th Percentile	3.0	4.7	11.8	7.7	9.3	6.8
25th Percentile	1.3	2.0	9.4	6.6	8.0	6.0
75th Percentile	0.2	0.1	7.4	5.4	6.6	5.0
95th Percentile	-0.4	-0.7	6.4	4.6	5.6	3.9
Mean	0.8	1.2	8.5	6.1	7.3	5.5
Median	0.6	0.9	8.2	6.0	7.2	5.5
n	*133*	*133*	*133*	*133*	*131*	*123*
Cultural & Environmental						
5th Percentile	1.8	2.7	10.0	8.2	8.9	7.1
25th Percentile	0.7	0.9	8.5	6.4	7.8	6.2
75th Percentile	0.0	-0.1	7.1	5.4	6.3	4.8
95th Percentile	-0.5	-0.7	6.0	4.7	5.7	3.9
Mean	0.4	0.5	7.8	6.1	7.1	5.5
Median	0.3	0.4	7.7	5.9	7.0	5.7
n	*50*	*50*	*50*	*50*	*50*	*45*
Foundations						
5th Percentile	1.9	3.3	11.0	7.9	9.4	7.3
25th Percentile	0.9	1.3	8.6	6.7	7.8	6.1
75th Percentile	0.0	-0.1	7.3	5.6	6.6	4.9
95th Percentile	-0.6	-0.9	6.3	4.7	5.7	4.0
Mean	0.5	0.7	8.1	6.1	7.2	5.5
Median	0.4	0.5	7.9	6.0	7.1	5.4
n	*108*	*108*	*108*	*106*	*103*	*95*
Health Care						
5th Percentile	1.8	2.9	10.2	7.1	8.3	6.8
25th Percentile	0.9	1.4	8.7	6.3	7.2	6.0
75th Percentile	0.2	0.1	7.2	4.9	5.9	4.7
95th Percentile	-0.4	-0.9	6.3	4.7	5.3	3.4
Mean	0.6	0.7	8.1	5.7	6.6	5.3
Median	0.6	0.5	7.9	5.5	6.5	5.3
n	*31*	*31*	*31*	*31*	*31*	*31*
Independent Schools						
5th Percentile	2.4	3.0	9.7	6.5	7.6	6.5
25th Percentile	1.0	1.1	8.3	5.9	7.0	5.8
75th Percentile	-0.1	-0.3	6.2	5.1	5.9	4.6
95th Percentile	-1.1	-1.7	4.2	3.9	5.4	3.3
Mean	0.4	0.1	7.0	5.4	6.4	5.2
Median	0.3	0.1	7.4	5.4	6.4	5.3
n	*28*	*28*	*28*	*28*	*28*	*26*
Other Nonprofits						
5th Percentile	1.0	1.2	8.6	6.6	7.6	6.1
25th Percentile	0.7	0.6	7.9	6.0	6.8	5.6
75th Percentile	-0.1	-0.5	6.6	4.9	5.7	4.4
95th Percentile	-0.8	-1.3	5.3	4.4	4.7	4.0
Mean	0.2	0.0	7.2	5.4	6.2	5.0
Median	0.4	0.0	7.4	5.4	5.9	4.9
n	*36*	*36*	*36*	*36*	*36*	*32*

Source: Endowment and foundation data as reported to Cambridge Associates LLC.

FIGURE 12. NOMINAL TOTAL RETURN SUMMARY BY ASSET SIZE: US ENDOWMENTS AND FOUNDATIONS

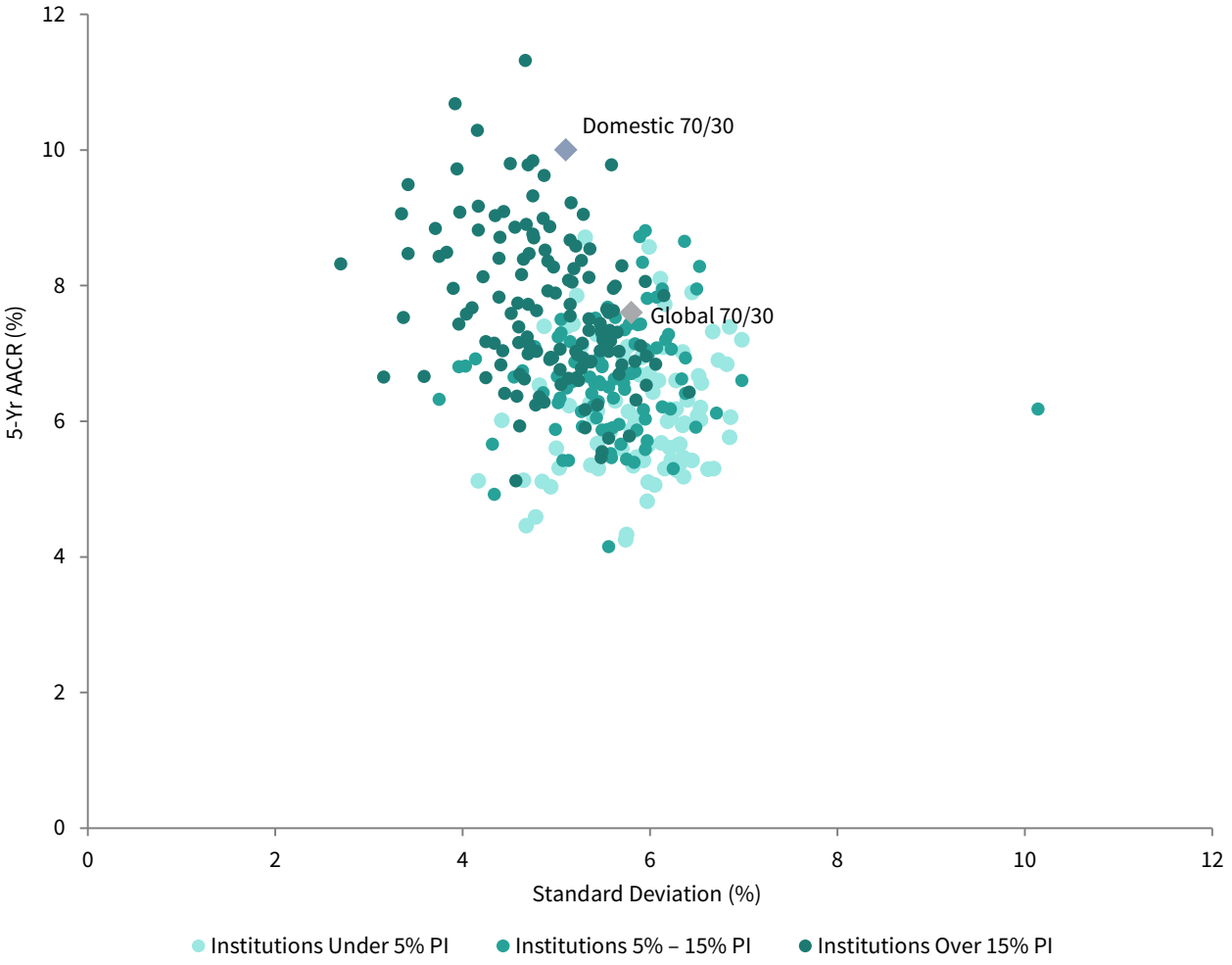
Periods Ended June 30, 2018 • Percent (%)

			Average Annual Compound Return			
	Latest Qtr	Calendar YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Under $100M						
5th Percentile	1.4	1.4	9.0	6.9	7.7	6.4
25th Percentile	0.6	0.4	7.9	5.9	6.9	5.5
75th Percentile	-0.1	-0.7	6.4	5.1	5.7	4.1
95th Percentile	-0.8	-1.4	4.7	4.3	5.1	3.2
Mean	0.2	-0.1	7.1	5.5	6.4	4.8
Median	0.2	-0.1	7.3	5.4	6.3	4.7
n	*75*	*75*	*75*	*73*	*70*	*59*
$100M – $200M						
5th Percentile	1.0	1.3	8.8	6.6	7.8	6.4
25th Percentile	0.6	0.6	8.3	6.0	6.9	5.7
75th Percentile	-0.1	-0.2	7.1	5.1	5.9	4.3
95th Percentile	-0.5	-1.0	6.1	4.6	5.5	3.9
Mean	0.2	0.2	7.5	5.6	6.5	5.0
Median	0.3	0.1	7.4	5.4	6.4	5.1
n	*74*	*74*	*74*	*74*	*73*	*69*
$200M – $500M						
5th Percentile	1.6	1.9	9.7	7.3	8.1	7.0
25th Percentile	0.7	0.8	8.3	6.2	7.4	6.0
75th Percentile	0.1	-0.1	7.3	5.4	6.4	4.9
95th Percentile	-0.5	-0.7	6.1	4.4	5.6	3.9
Mean	0.5	0.4	7.9	5.9	6.9	5.4
Median	0.4	0.3	7.8	5.9	6.8	5.4
n	*87*	*87*	*87*	*87*	*87*	*83*
$500M – $1B						
5th Percentile	2.2	3.7	10.4	7.6	9.0	7.0
25th Percentile	1.0	1.4	8.8	6.5	7.8	5.9
75th Percentile	0.0	0.1	7.3	5.4	6.7	5.1
95th Percentile	-0.4	-0.7	6.1	4.5	5.7	4.3
Mean	0.6	1.0	8.2	6.0	7.2	5.5
Median	0.5	0.9	8.1	6.0	7.2	5.4
n	*58*	*58*	*58*	*58*	*57*	*51*
Over $1B						
5th Percentile	3.0	4.9	12.5	8.2	9.9	7.5
25th Percentile	1.7	3.1	10.3	7.2	8.7	6.5
75th Percentile	0.6	1.1	8.2	6.2	7.4	5.6
95th Percentile	0.0	0.1	7.2	5.4	6.4	4.7
Mean	1.2	2.1	9.2	6.7	8.1	6.1
Median	1.2	1.9	9.1	6.6	8.1	6.0
n	*92*	*92*	*92*	*92*	*92*	*90*

Source: Endowment and foundation data as reported to Cambridge Associates LLC.

FIGURE 13. STANDARD DEVIATION AND SHARPE RATIO: US ENDOWMENTS AND FOUNDATIONS

5 Yrs Ended June 30, 2018



	All Institutions	Mean by PI Allocation			70/30 Benchmarks	
	Mean	Under 5%	5% – 15%	Over 15%	Domestic	Global
5-Yr AACR	7.1	6.4	6.7	7.8	10.0	7.6
Standard Deviation	5.3	5.8	5.6	4.9	5.1	5.8
Sharpe Ratio	1.28	1.04	1.14	1.54	1.84	1.23
n	*321*	*84*	*105*	*132*		

Sources: Endowment and foundation data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited, Frank Russell Company, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Notes: Analysis includes only institutions that provided underlying quarterly returns and asset allocation for the last five years. Each institution's private investment allocation represents the mean for the six June 30 periods from 2013 to 2018. The Domestic 70/30 benchmark is composed of 70% Russell 3000® /30% Bloomberg Barclays Government/Credit. Total returns for the MSCI ACWI are net of dividend taxes for global ex US securities.