

COLLEGE AND UNIVERSITY INVESTMENT POOL RETURNS

FISCAL YEAR 2018



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This study is based on a survey that Cambridge Associates (CA) administers annually to our college and university clients. The report that follows summarizes returns, asset allocation, and other investment-related data for 160 institutions for the fiscal year ended June 30, 2018. Included in this year's report are commentary and exhibits that are spread across five separate sections.

While fiscal year 2018 was a solid year for endowment investment performance, most institutions have found it to be a challenging return environment over the last decade. **INVESTMENT PORTFOLIO RETURNS** highlights performance results for select periods over the last 20 years and investigates some of the factors that contributed to the variation of returns reported among participants. Also included in this section are analyses on asset class composite returns and policy portfolio benchmarks.

Changes to asset allocations over the last ten years have been less drastic than those reported in prior decades. **ASSET ALLOCATION** looks back at these changes over the last decade and incorporates data on target asset allocations to lend insights into how institutions are altering their investment policies heading into the future.

The number of managers that endowments use for their overall portfolio and within specific asset classes can vary widely. **INVESTMENT MANAGER STRUCTURES** explores data on this topic as well as implementation strategies for traditional assets (i.e., active versus passive management) and alternative assets.

Meanwhile, **PAYOUT FROM THE LONG-TERM INVESTMENT PORTFOLIO** contains a set of analyses that look at portfolio inflows and outflows. Included in this section are exhibits on spending policies, the LTIP's support of college and university operating budgets, and liquidity coverage ratios. While most institutions leave their spending policies unchanged in any given year, there was a group of institutions that lowered the spending rate specified in the spending policy in fiscal year 2018.

Finally, **INVESTMENT OFFICE STAFFING AND GOVERNANCE** takes a look at topics such as the number of personnel in the investment office and investment committee structure. New to this year's report are analyses on how endowments use outside advisors/consultants and who has decision rights for asset allocation policy development and manager selection.

Investment Portfolio Returns

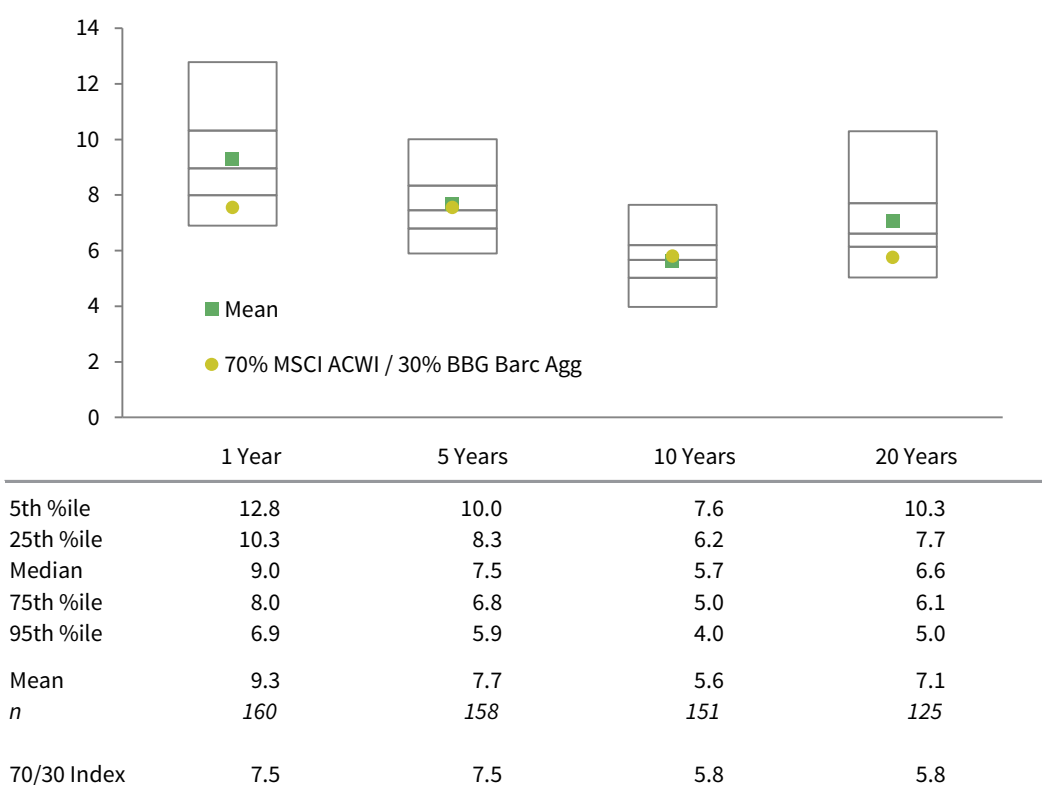
RETURNS IN 2018

College and university endowments were propelled in fiscal year 2018 by solid investment performance from global equities. The strongest returns came from private markets, with global ex US venture capital producing exceptional returns. Natural resources equities also posted robust returns and made positive contributions to overall portfolio performance.

The mean nominal total return earned by participating institutions was 9.3% in fiscal year 2018 (Figure 1). Returns ranged from 12.8% at the 5th percentile to 6.9% at the 95th percentile. When the participant group is broken out into three broad asset size groups, those with assets over \$1 billion reported the highest average nominal return of 10.4% (Figure 2). Institutions with assets between \$500 and \$1 billion reported an average return of 9.0%, followed by those with assets under \$500 million (8.2%).

FIGURE 1 SUMMARY OF INVESTMENT POOL RETURNS

Trailing 1-Yr as of June 30, 2018

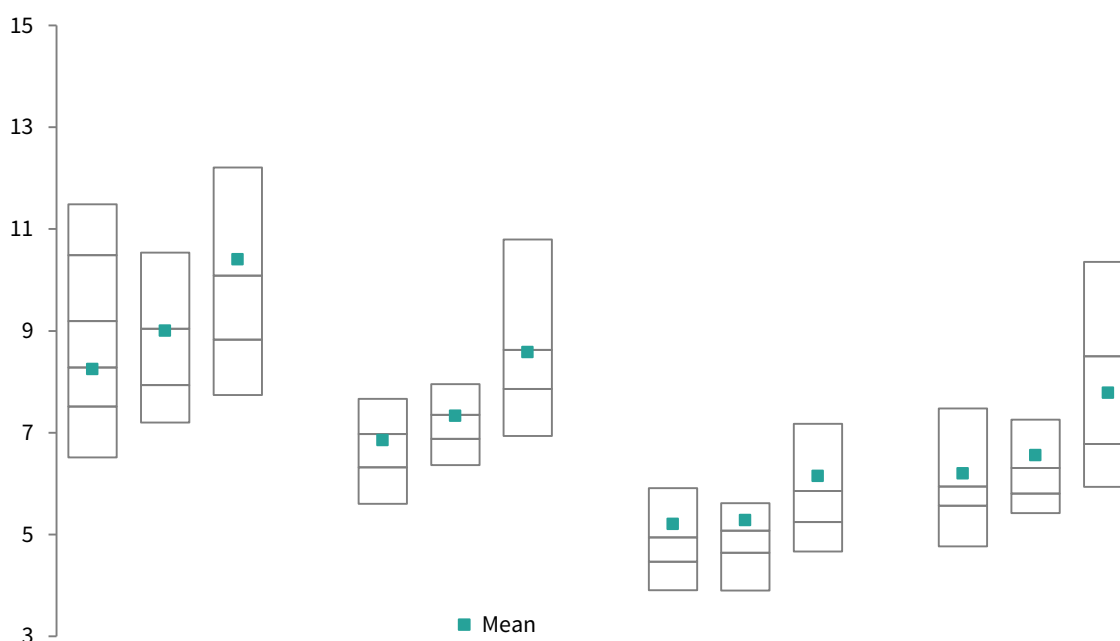


Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Notes: All returns are annualized. Total returns for the MSCI ACWI are gross of dividend taxes for global ex US securities prior to January 1, 2001, and net of dividend taxes from that date to the present.

FIGURE 2 SUMMARY OF INVESTMENT POOL NOMINAL RETURN PERCENTILES BY ASSET SIZE

Years Ended June 30, 2018 • Percent (%)



	1 Year			5 Years			10 Years			20 Years		
	Under \$500M	\$500M - \$1B	Over \$1B	Under \$500M	\$500M - \$1B	Over \$1B	Under \$500M	\$500M - \$1B	Over \$1B	Under \$500M	\$500M - \$1B	Over \$1B
5th %ile	10.3	11.4	13.5	8.1	8.4	11.4	6.7	6.4	8.0	8.1	7.9	10.9
25th %ile	9.0	9.9	11.4	7.4	7.8	9.2	5.7	5.9	6.6	6.6	7.0	9.0
Median	8.1	8.8	10.1	6.8	7.3	8.5	5.3	5.4	6.0	6.2	6.5	7.3
75th %ile	7.3	8.1	9.0	6.1	6.8	7.6	4.7	4.7	5.4	5.4	6.1	6.5
95th %ile	6.5	7.2	7.7	5.6	6.4	6.9	3.9	3.9	4.7	4.8	5.4	5.9
Mean	8.2	9.0	10.4	6.9	7.3	8.6	5.2	5.3	6.1	6.2	6.6	7.8
n	58	37	65	56	37	65	52	34	65	33	32	60

Source: College and university data as reported to Cambridge Associates LLC.

Note: Five-, ten-, and 20-year returns are annualized.

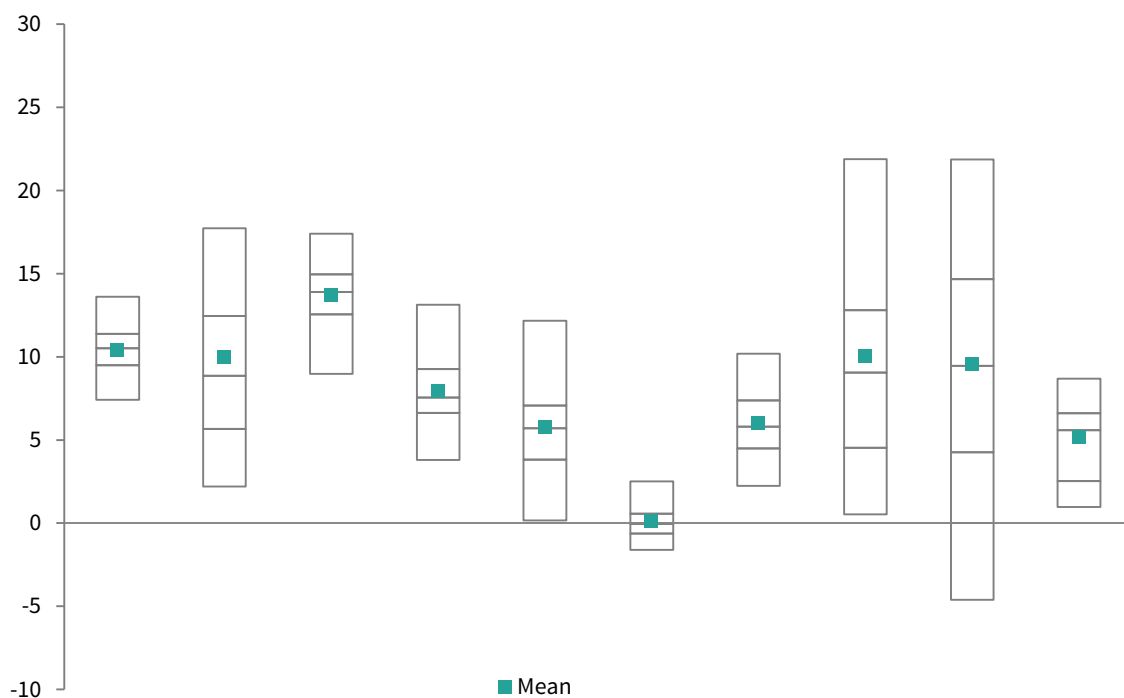
The range of participant returns across asset classes are displayed in Figures 3 through 6. The marketable asset class returns are reported as time-weighted returns, and the private investment data are horizon internal rates of return (IRR).¹ All index returns are reported in USD terms.

PUBLIC EQUITY. The median total public equity composite return among participants was 10.5% in fiscal year 2018. US equities produced the best returns among the geographic regions. The median participant return for US equities was 13.9%, followed by the median global ex US equity developed (7.6%) and emerging markets equity

¹ A time-weighted return (TWR) captures the total return earned over time on the initial investment and eliminates the impact of future cash flows. TWRs are appropriate where the investor controls the timing of cash flows. An internal rate of return (IRR) extracts a return from a cash flow stream composed of the beginning net asset value (NAV) for the time horizon, all inflows and outflows within the period, and the final NAV of the period. IRRs are more appropriate for investments where the fund managers control the decisions of when to call and return capital.

FIGURE 3 DISPERSION OF PARTICIPANTS' ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 1-Yr as of June 30, 2018



	Public Equity ¹	Global Equity ²	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds	Public Real Assets ³	Commodities and Natural Resources	Public Real Estate
5th Percentile	13.6	17.7	17.4	13.1	12.2	2.5	10.2	21.9	21.9	8.7
25th Percentile	11.4	12.5	15.0	9.3	7.1	0.6	7.4	12.8	14.7	6.6
Median	10.5	8.9	13.9	7.6	5.7	0.0	5.8	9.0	9.5	5.6
75th Percentile	9.5	5.7	12.6	6.6	3.8	-0.6	4.5	4.5	4.3	2.5
95th Percentile	7.4	2.2	9.0	3.8	0.2	-1.6	2.2	0.5	-4.6	1.0
Mean	10.4	10.0	13.7	7.9	5.8	0.1	6.0	10.0	9.6	5.2
<i>n</i>	117	73	120	114	118	125	124	81	86	28
Median by Asset Size										
Under \$500M	10.2	7.0	13.9	7.3	4.9	-0.1	5.8	8.3	10.4	4.9
<i>n</i>	54	32	55	54	55	55	54	30	46	8
\$500M to \$1B	10.9	10.4	14.8	7.5	5.8	-0.2	5.2	10.5	11.0	6.6
<i>n</i>	27	17	29	28	28	30	32	22	16	10
Over \$1B	10.7	11.4	13.1	8.6	6.3	0.3	7.0	8.5	7.7	3.6
<i>n</i>	36	24	36	32	35	40	38	29	24	10

Source: College and university data as reported to Cambridge Associates LLC.

¹ Public equity is a composite of global equity, US equity, developed markets ex US equity, and emerging markets equity.

² Global equity includes only investment vehicles that have a mandate to invest in US and international markets.

³ Public real assets is a composite of public real estate, commodities and natural resources, and inflation-linked bonds.

(5.7%) returns. The largest endowments had the highest median return for global ex US developed and emerging markets equities, while midsized endowments reported the highest US equity median return (Figure 3).

On an active management basis, endowments fared best in global ex US developed equities, as the median participant return outperformed the MSCI EAFE Index by 80 basis points (bps). The median return for US equities underperformed the Russell 3000® Index by 90 bps. Results were even worse in emerging markets, where the median return underperformed the MSCI Emerging Markets index by 250 bps (Figure 4).

BONDS. Median participant performance for the bonds composite was flat (0.0%) in fiscal year 2018. As is typically the case, the range of returns from the 5th to 95th percentiles was the slimmest of all the asset classes (Figure 3). The median bond return was just slightly above that of the Bloomberg Barclays Aggregate Bonds Index (-0.4%), reflecting the fact that the vast majority of the traditional bond allocation is invested in investment-grade US securities.² The FTSE® Non-US Dollar World Government Bond Index returned 3.2% (Figure 4).

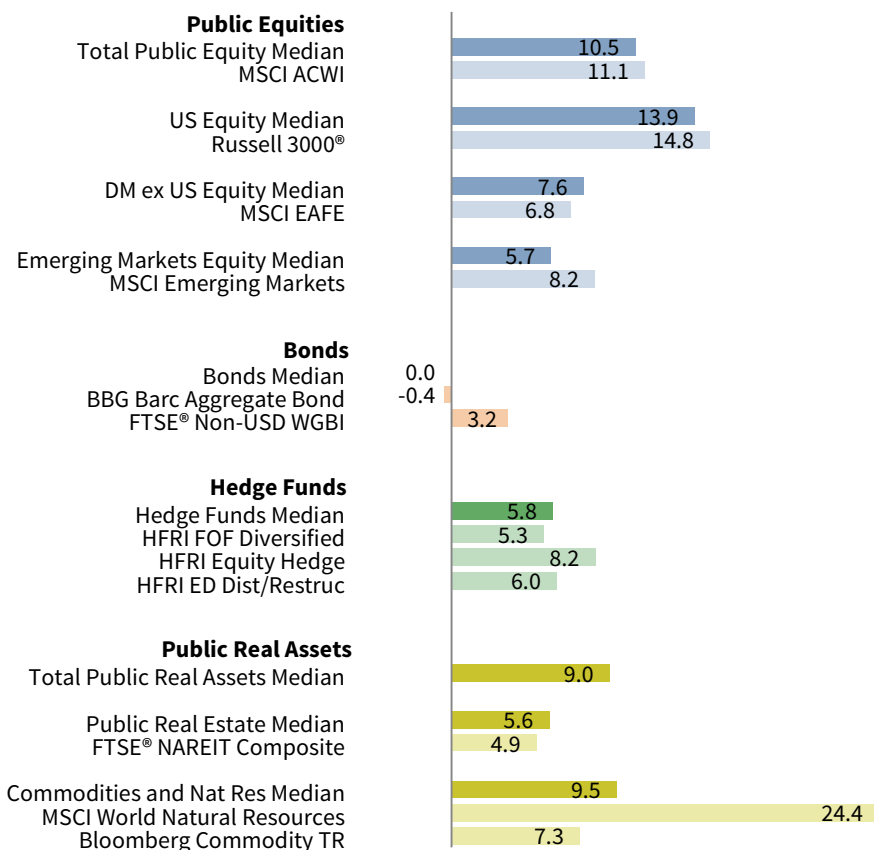
HEDGE FUNDS. The median hedge funds return among participants was 5.8% in fiscal year 2018. The largest endowments reported the highest median return at 7.0% (Figure 3). On an index basis, equity-oriented hedge funds reported the best return (8.2%) among the HFRI indexes displayed in Figure 4.

PUBLIC REAL ASSETS. Real assets consists of a diversified group of investments, including commodities, natural resources, real estate, and inflation-linked bonds. On average, commodities and natural resources accounts for over 70% of the public real assets allocation. The median participant returns reflect this as the overall public real assets composite median of 9.0% was just slightly lower than the median commodities/natural resources return of 9.5% (Figure 4).

² Among participants in this study, 89% of the average bond allocation is to US bonds. The remaining allocation is split among global ex US bonds and high-yield bonds.

FIGURE 4 MEDIAN MARKETABLE ASSET CLASS RETURNS VS INDEX RETURNS

Trailing 1-Yr as of June 30, 2018



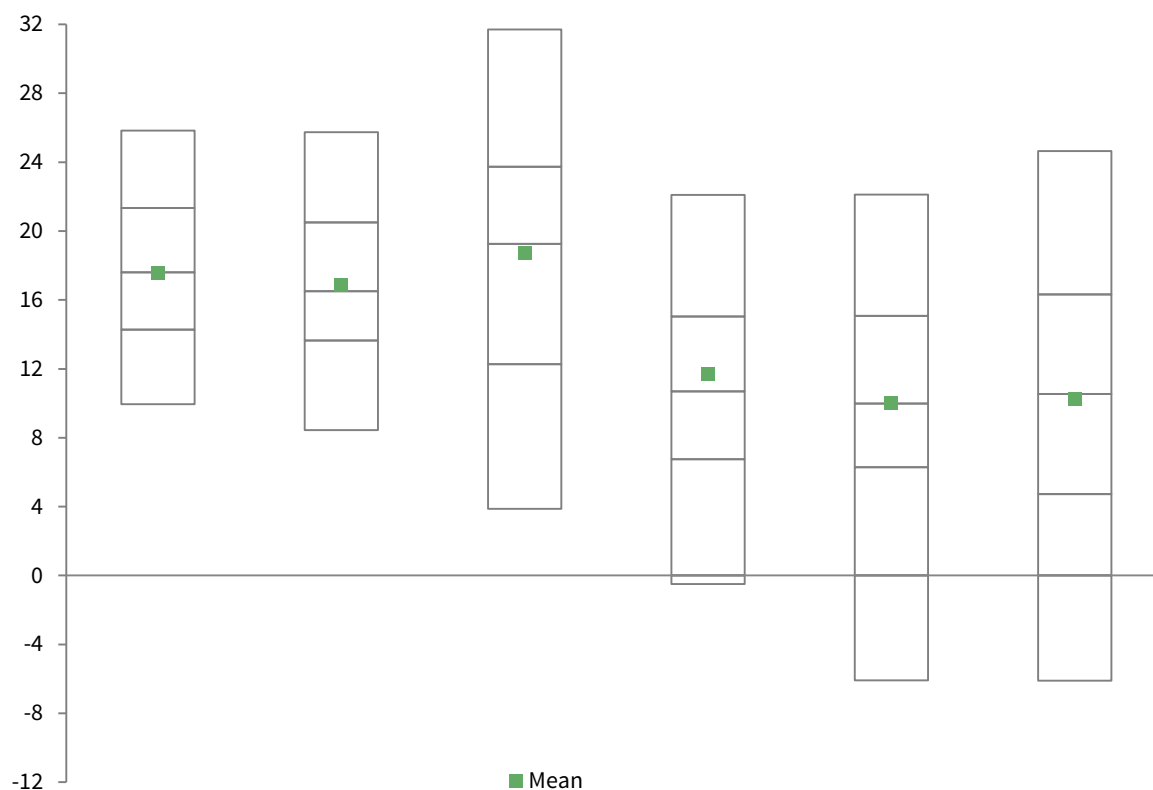
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

PRIVATE EQUITY. The median trailing one-year IRR for the private equity composite was 17.6% (Figure 5). On a more granular level, the median venture capital return (19.3%) was higher than that of non-venture private equity (16.5%). The largest endowments reported median returns that were considerably higher than the overall peer group for both venture capital (23.1%) and non-venture private equity (19.0%). On an index basis, the global ex US venture capital produced the best return (29.0%) of the private investment asset classes (Figure 6).

PRIVATE REAL ASSETS. The median IRR for private natural resources (10.5%) was just slightly higher than that of private real estate (10.0%). The smallest endowments reported the highest median return for private natural resources (13.3%) while midsized endowments reported the highest median return for private real estate (14.2%). The range of returns from the 5th percentile to the 95th percentile was 28 percentage points (ppts) for private real estate and 31 ppts for private natural resources (Figure 5).

FIGURE 5 DISPERSION OF PARTICIPANTS' ASSET CLASS RETURNS: PRIVATE INVESTMENTS

Trailing 1-Yr as of June 30, 2018



	Private Equity ¹	Non-Venture Private Equity ²	Venture Capital	Private Real Assets ³	Private Real Estate	Private Natural Resources
5th Percentile	25.8	25.7	31.7	22.1	22.1	24.6
25th Percentile	21.3	20.5	23.7	15.0	15.1	16.3
Median	17.6	16.5	19.3	10.7	10.0	10.5
75th Percentile	14.3	13.7	12.3	6.7	6.3	4.7
95th Percentile	10.0	8.4	3.9	-0.5	-6.1	-6.1
Mean	17.6	16.9	18.7	11.7	10.0	10.2
<i>n</i>	118	111	106	101	105	107
Median by Asset Size						
Under \$500M	17.2	15.9	17.5	10.4	6.9	13.3
<i>n</i>	49	49	42	42	35	38
\$500M to \$1B	15.7	15.7	18.7	10.1	14.2	8.3
<i>n</i>	31	26	26	29	30	30
Over \$1B	20.5	19.0	23.1	11.7	10.2	11.4
<i>n</i>	38	36	38	30	40	39

Source: College and university data as reported to Cambridge Associates LLC.

Note: Private investment return statistics are reported as horizon internal rates of return (IRRs).

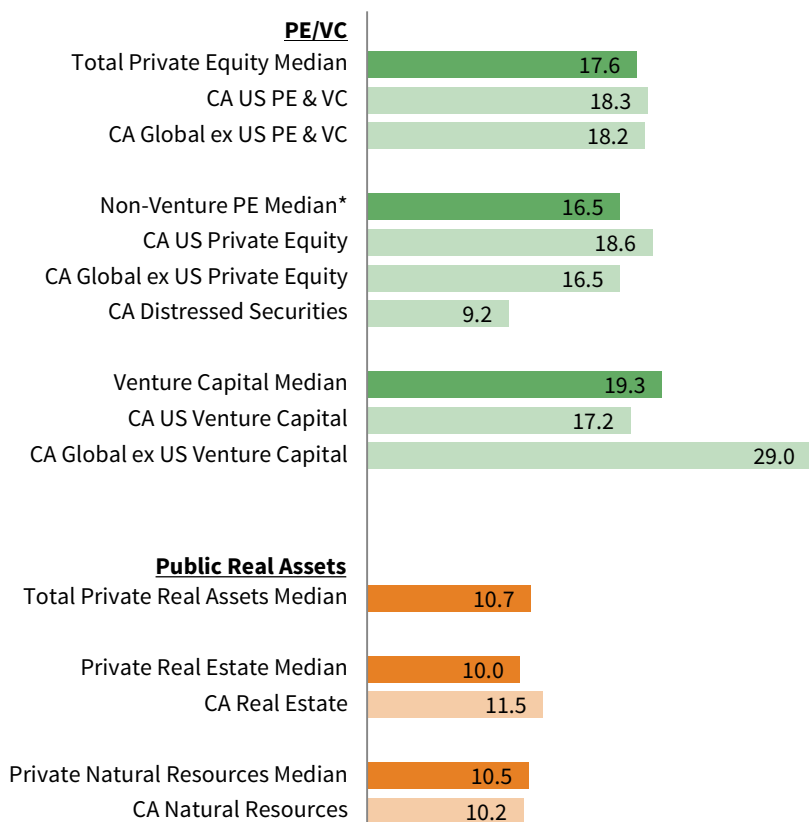
¹ Private equity is a composite of non-venture private equity and venture capital.

² Non-venture private equity also includes distressed securities that are invested through a private investment vehicle.

³ Private real assets is a composite of private real estate and private natural resources.

FIGURE 6 MEDIAN PRIVATE INVESTMENT ASSET CLASS IRRs VS INDEX IRRs

Trailing 1-Yr as of June 30, 2018



*Non-venture private equity also includes distressed securities that are invested through a private investment vehicle.

Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Cambridge Associates LLC.

Note: Private investment return statistics are reported as horizon internal rates of return (IRRs).

ANALYSIS OF TOP AND BOTTOM PERFORMERS IN 2018

Many factors contribute to investor returns, including asset allocation policy and the implementation of that policy. In addition, varying performance measurement methodologies may impact the peer performance statistics reported in this study.

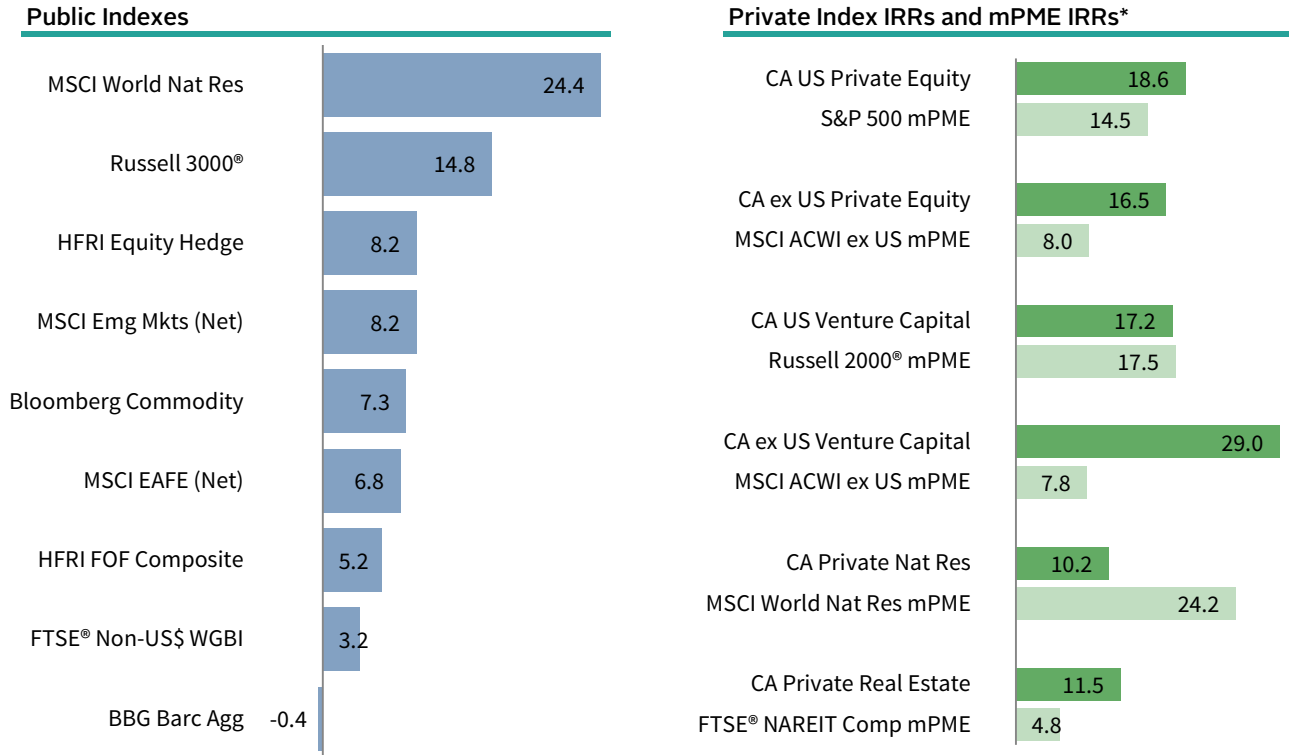
ASSET ALLOCATION. The index returns in the top half of Figure 7 provide context on the capital market environment for fiscal year 2018. Included alongside the private benchmark IRRs are public market returns on a modified public market equivalent basis (mPME). The CA mPME replicates private investment performance under public market conditions and allows for an appropriate comparison of private and public market returns.³

The table in the bottom half of Figure 7 breaks the participant group into four quartiles based on fiscal year 2018 investment performance. 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 asset allocation of the institutions within each quartile.

³ 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.

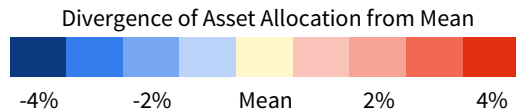
FIGURE 7 1-YR INDEX RETURNS AND ASSET ALLOCATION OF TOP AND BOTTOM PERFORMERS

As of June 30, 2018 • Percent (%)



Mean C&U 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	14.4	10.7	8.0	5.0	21.8	3.5	20.7	10.1	2.5	3.2	0.2
2nd Quartile	20.9	15.3	7.6	7.7	19.0	3.3	11.9	7.3	3.4	3.7	-0.1
3rd Quartile	22.3	17.7	7.8	10.0	16.5	2.7	9.0	4.8	4.7	3.5	1.0
Bottom Quartile	23.8	17.4	7.9	11.6	16.4	2.7	6.7	3.6	4.5	4.0	1.4
All C&U Mean	20.3	15.3	7.8	8.6	18.5	3.0	12.1	6.4	3.8	3.6	0.6



* 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.

Sources: College and university 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 160 institutions.

There is typically a relationship between the market backdrop and the disparity in asset allocations between the top and bottom performers. In fiscal year 2018, most of the private investment indexes outperformed their respective mPME benchmarks, with global ex US venture capital producing exceptional returns. As one would expect given this outperformance of the private markets, the top quartile of performers reported the highest average allocation to private equity and venture capital (20.7%) and private real assets (10.1%). Likewise, the bottom quartile of performers reported the lowest average allocation to these asset classes.

ATTRIBUTION. Asset allocation is a key driver of performance, but 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. Although we do not have the level of detailed data that is necessary to perform a precise attribution analysis, our data do allow us to conduct an estimated analysis that can help illuminate the main drivers of performance for fiscal year 2018.

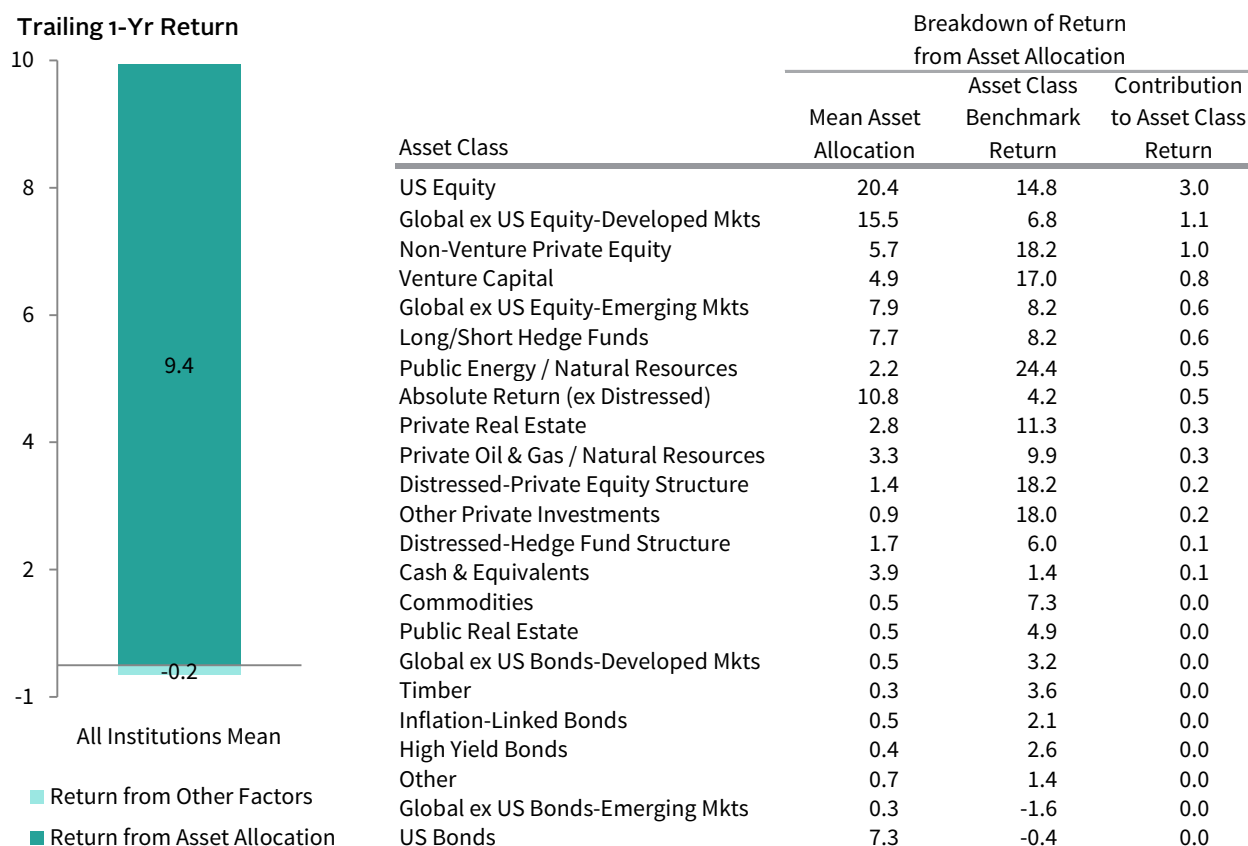
Figure 8 illustrates the results of an analysis based on the one-year return and beginning fiscal year asset allocation of participating institutions. The darker shading on the bar chart represents the portion of the mean participant return that can be attributed to asset allocation and is calculated using a blend of representative asset class benchmarks weighted according to each institution's asset allocation. The lighter shading of the bar is calculated by subtracting the mean asset allocation return from the mean participant return and is the portion of the total return that cannot be explained by asset allocation. This "other" portion of returns is principally driven by implementation or execution decisions, which can include active management and manager selection.⁴ The analysis estimates that the average asset allocation return among participants was 9.4%, while the average implementation return was slightly negative (-0.2%).

US equity, which returned 14.8% and had the highest average allocation among the detailed asset classes, made the largest contribution to the mean asset class return. Global ex US equities, non-venture private equity, and venture capital also made significant positive contributions to overall portfolio performance. Each category's contribution to the mean asset class return is a function of its benchmark return as well as the participant group's average allocation to the category.

⁴ 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 8 ATTRIBUTION ANALYSIS

As of June 30, 2018 • Percent (%)



Sources: College and university data as reported to Cambridge Associates LLC. Index data provided by Bloomberg Index Services Limited, BofA Merrill Lynch, Cambridge Associates LLC, Frank Russell Company, FTSE Fixed Income LLC, FTSE International Limited, Hedge Fund Research, Inc., J.P. Morgan Securities, Inc., MSCI Inc., 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 160 institutions that provided beginning fiscal 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 horizon returns.

Although asset allocation tends to account for most of the return that a portfolio earns, implementation decisions usually explain most of the relative performance among participants. For fiscal year 2018, the attribution model estimates that the average asset allocation return of the top quartile was 150 bps higher than that of the bottom quartile. The difference was more than twice as large when looking at the portion of the total return explained by other factors, with the top quartile producing a return that was 310 bps higher than the bottom quartile in this area (Figure 9).

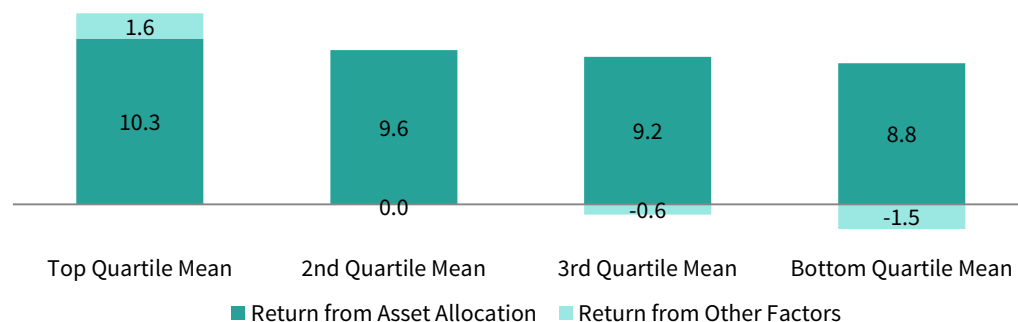
RETURN CALCULATION METHODOLOGIES

Performance reporting methodologies differ across participants in this study. Institutions that place a significant emphasis on benchmarking peer performance should take note of the following issues.

PRIVATE INVESTMENTS. There were two main methodologies that institutions used to account for private investments in their fiscal year 2018 total portfolio return. The most frequently used methodology was to report returns on a current basis, meaning

FIGURE 9 ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE

Trailing 1-Yr return • As of June 30, 2018 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Includes data for 160 institutions that provided beginning fiscal year asset allocation.

the total portfolio return incorporated private investment valuations for the entire fiscal year period. The second most frequently used methodology was the lagged basis. Under this methodology, private investment valuations lag other assets in the portfolio by one quarter. In essence, the private investment portion of the fiscal year 2018 total return represents performance for the period of April 1, 2017, to March 31, 2018.

When assessing the impact of these two methodologies, it is important to consider private investment returns for both second quarter 2017 and second quarter 2018. With the lagged basis methodology, performance for the former period will be included in the one-year total return calculation, and performance for the latter period will be excluded. For private equity, venture capital, and natural resources, the Cambridge Associates private index return for second quarter 2018 was substantially stronger than second quarter 2017 (Figure 10). However, second quarter 2017 returns were stronger than second quarter 2018 for private real estate and distressed securities. Given the index return differentials and the fact the PE/VC makes up most of the average allocation to private investments, it is likely that the current method would produce a higher fiscal year 2018 return than the lagged methodology. Actual results will depend on each institution’s allocation across the private investment asset classes and their actual performance in these categories.

FIGURE 10 CAMBRIDGE ASSOCIATES PRIVATE INVESTMENT INDEX RETURNS

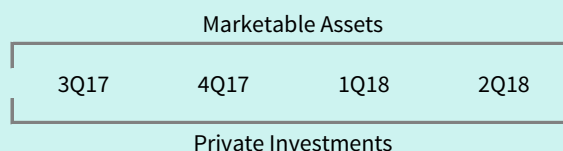
	1-Quarter Horizon Pooled Return	
	Q2 2017	Q2 2018
US Private Equity	3.5	5.4
US Venture Capital	1.3	6.0
Distressed Securities	3.6	2.5
Real Estate	3.6	1.2
Natural Resources	-0.4	3.6

Source: Cambridge Associates LLC.

PERFORMANCE REPORTING METHODOLOGIES

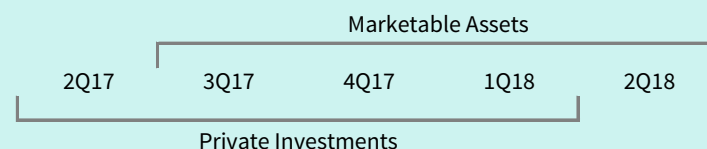
Current Basis

Total investment pool return for 2018 includes marketable asset and private investment performance for July 1, 2017, to June 30, 2018



Lagged Basis

Total investment pool return for 2018 includes marketable asset performance for July 1, 2017, to June 30, 2018, and private investment performance for April 1, 2017, to March 31, 2018.



Methodologies Used by Participants

Asset Size	Current Basis	Lagged Basis	Other	No PI Allocation
Under \$500M	88%	0%	0%	12%
<i>n</i>	51	0	0	7
\$500M – \$1B	81%	17%	3%	0%
<i>n</i>	29	6	1	0
Over \$1B	78%	22%	0%	0%
<i>n</i>	51	14	0	0
All Institutions	82%	13%	1%	4%
<i>n</i>	131	20	1	7

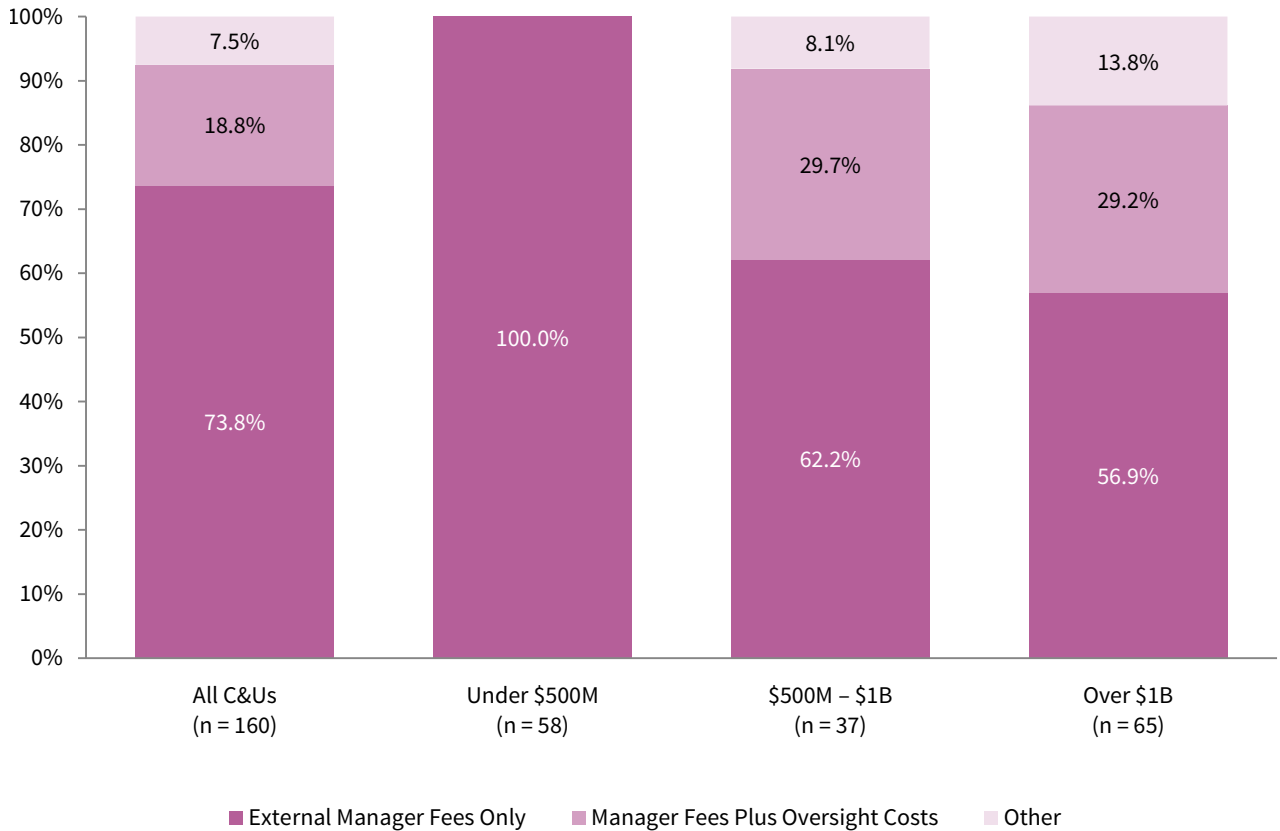
Source: College and university data as reported to Cambridge Associates LLC.

Notes: Private investments include 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 right-hand column.

NET OF FEE CALCULATIONS. Each participant in this study provided performance on a net-of-fees basis. However, the types of fees deducted in the net return calculation differ among participants. Nearly three-quarters (74%) of respondents report returns net of external manager fees only. Another 19% of respondents deduct external manager fees plus all or most of investment oversight costs, including investment office staff compensation. The remaining 7% of respondents deduct external manager fees plus some oversight costs, but are gross of investment staff compensation which typically represents the largest portion of internal investment office expenses (Figure 11).

FIGURE 11 TYPES OF FEES DEDUCTED IN FY 2018 NET RETURN CALCULATION

As of June 30, 2018 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

Notes: Institutions in the Manager Fees Plus Oversight Costs category net out all or the majority of oversight costs, including investment staff compensation. Institutions in the Other category deduct external manager fees and some investment oversight costs, but are gross of investment staff compensation.

These reporting differences are magnified when participants are broken down into broad asset size groups. All endowments with assets under \$500 reported returns solely net of external manager fees, while just 62% of endowments between \$500 million and \$1 billion and 57% of those above \$1 billion used this method. Among the endowments in the two largest asset size groups in Figure 11, nearly 30% reported returns net of manager fees plus all or most investment oversight costs, including investment staff compensation.

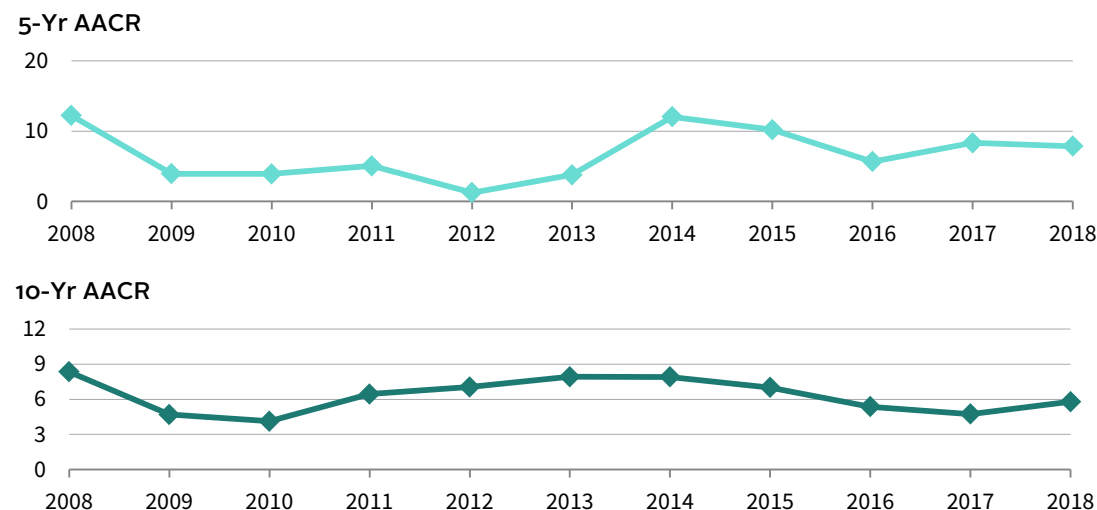
Past Cambridge Associates surveys have shown that total investment oversight expenses range between 10 bps and 30 bps for most of our endowment clients. Many factors can impact the overall level of costs including staffing levels, overall complexity of the portfolio, and the types of costs recognized. The scale of asset size can also impact statistics in relative terms, as costs in basis points tend to be lower for institutions with a larger asset base.

LONG-TERM RETURNS

The mean average annual compound return (AACR) was 7.7% for the five-year period ending June 30, 2018 (Figure 1). Institutions with assets greater than \$1 billion reported the highest average five-year return (8.6%) (Figure 2). The average return for the most recent five-year period lies in the middle of those that have been reported over the last decade (Figure 12).

FIGURE 12 ROLLING 5-YR AND 10-YR AVERAGE ANNUAL COMPOUND RETURNS

Years Ended June 30 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Analysis includes data for 125 institutions that provided returns for the last 20 years.

The mean nominal AACR for the ten-year period was 5.6%, with the largest portfolios again reporting the highest mean return (6.1%). The mean return for the most recent ten-year period is an improvement over those reported for the prior two fiscal year-ends.

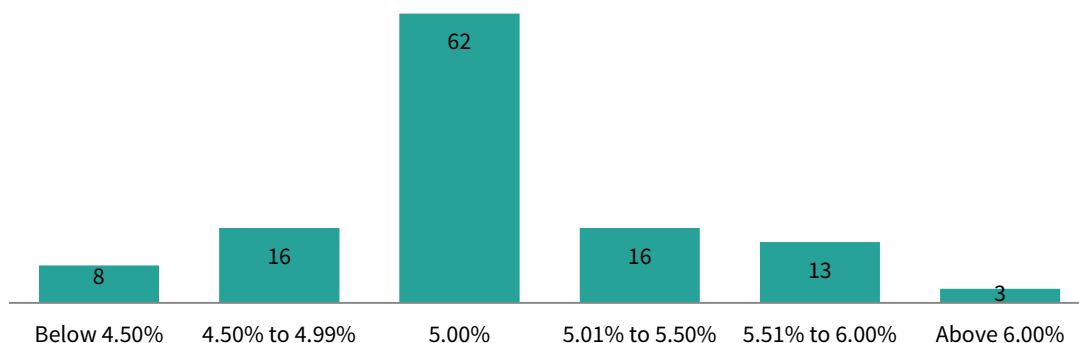
To maintain purchasing power for an endowment,⁵ institutions must achieve a real return that offsets the average effective spending rate over the long-term. Of the 88 institutions that provided consistent data over the last decade, the average long-term effective spending rate was 4.9%.⁶ For the institutions that provided a long-term real return objective, the most common rate reported continues to be 5% (Figure 13).

Through the trailing ten-year period ending June 30, 2018, the average real return after spending was -0.4%, with just 26 of 88 respondents reporting a return above 0%. This statistic indicates that most endowments have lost purchasing power over the last ten years and struggled to maintain intergenerational equity at current spending and investment return levels.

5 In this instance, endowment refers to a single fund with no future inflows. An LTIP, which is a collection of multiple endowments and other long-term funds, can use inflows to maintain purchasing power even if the pool's long-term real return is lower than the spending rate.

6 The effective spending rate is the dollar amount of spending from the portfolio for the fiscal year divided by the beginning fiscal year market value of the portfolio. The long-term effective spending rate is the average for the ten-year period from fiscal years 2008 to 2017.

FIGURE 13 REAL TOTAL PORTFOLIO RETURN OBJECTIVES



Source: College and university data as reported to Cambridge Associates LLC.

Note: Chart includes data for 118 institutions that provided a real total portfolio return objective.

RELATIVE RETURNS: SIMPLE PORTFOLIO BENCHMARK. A simple benchmark that consists of broad stock and bond indexes can be useful in evaluating the decision to adopt the endowment model of investing. All endowments in this study are growth-oriented portfolios that are diversified across global equity markets. Therefore, the most appropriate simple benchmark is one that uses a global stock index and assigns a higher weighting to that equity index. In this study, we cite a benchmark that consists of 70% MSCI All Country World Index and 30% Bloomberg Barclays Aggregate Bond Index. The average return for institutions in this study outperformed this 70/30 benchmark by approximately 180 bps in fiscal year 2018. However, over the trailing ten-year period the average endowment underperformed this same benchmark by 20 bps.

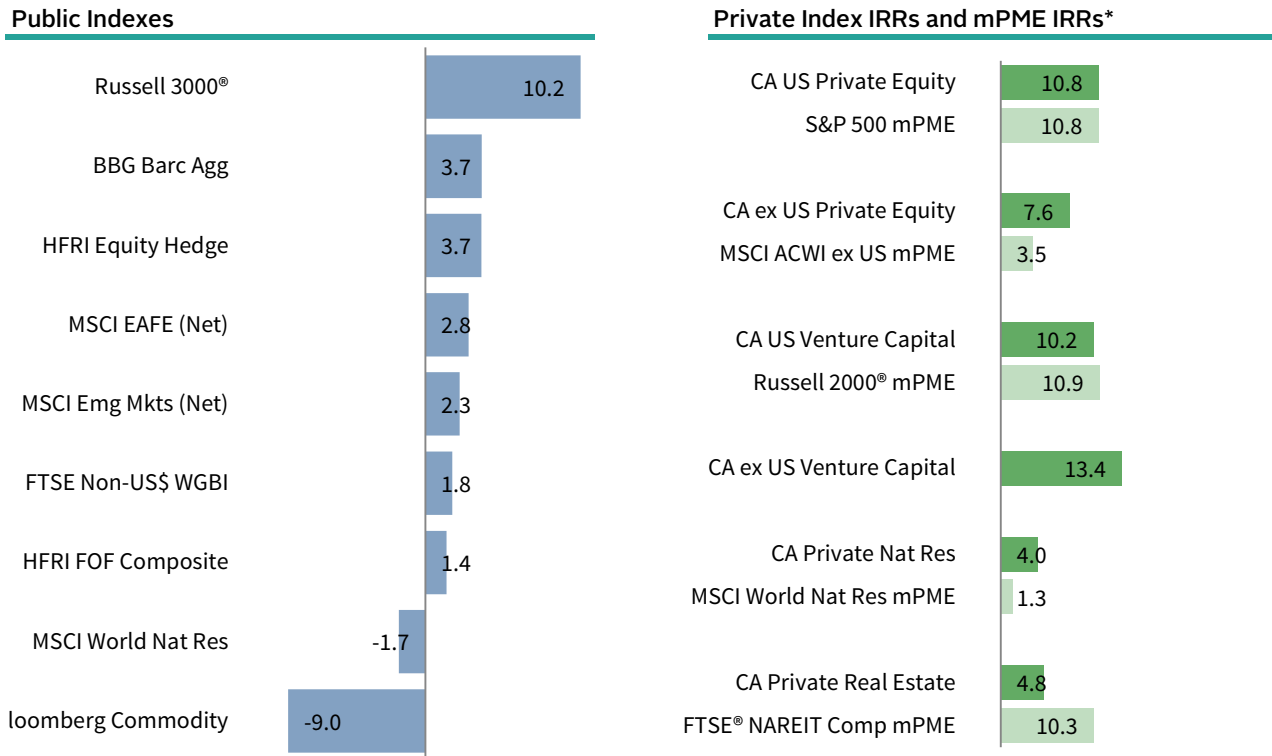
When looking at participants' historical asset allocation and returns, it was a key tenet of the endowment model that distinguished top performers from other endowments over the last decade. Institutions that had the highest allocations to illiquid private investments generally earned the best total portfolio returns. The top quartile of performers reported an average allocation of 16.6% to PE/VC and 10.2% to private real assets over the last decade (Figure 14). All institutions in the top quartile for the trailing ten-year period earned a return that outperformed the simple 70/30 benchmark.

ATTRIBUTION. Higher allocations to private investments led to the top quartile of performers earning the highest asset allocation return in our attribution model for trailing ten-year period. The average asset allocation return for the top quartile of performers (5.4%) was 50 bps higher than the average for the bottom quartile of performers (Figure 15). However, similar to our analysis on the trailing one-year data, our attribution model estimates that it was the return from other factors—mainly implementation decisions—that explained most of the dispersion in returns among the peer group for the trailing ten-year period.

The range of returns among private investment funds is usually much wider than what is experienced in marketable asset classes. Over time, portfolios with the highest private investment allocations should theoretically have more potential for earning a larger return from other factors, particularly in venture capital where the potential for

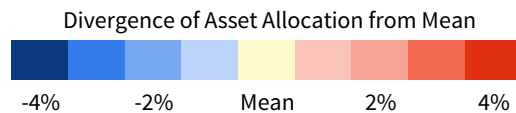
FIGURE 14 10-YR INDEX RETURNS AND ASSET ALLOCATION OF TOP AND BOTTOM PERFORMERS

As of June 30, 2018 • Percent (%)



Mean C&U 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	16.1	12.5	6.4	8.1	20.1	3.7	16.6	10.2	3.5	2.7	0.2
2nd Quartile	17.2	11.9	6.7	9.1	19.8	4.1	14.6	8.7	4.4	3.1	0.2
3rd Quartile	19.6	14.6	7.3	11.6	19.4	4.0	8.5	5.1	6.1	3.1	0.6
Bottom Quartile	18.7	14.2	6.4	11.9	19.3	3.2	10.4	5.9	5.3	3.8	0.8
All C&U Mean	17.9	13.3	6.7	10.2	19.7	3.7	12.5	7.5	4.8	3.2	0.5



* 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.

Sources: College and university 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 120 institutions.

FIGURE 15 10-YR ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE

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, Frank Russell Company, FTSE Fixed Income LLC, 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 120 institutions that provided beginning year asset allocation for each of the last 10 years. 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 may also include some residual/unattributable asset allocation effects.

excess return can be very significant in certain periods. The top quartile of performers added an average of 1.7 percentage points through implementation decisions over the trailing ten-year period, while the average institution in the bottom quartile lost 20 bps through implementation.

The ranges of actual asset class returns across the entire participant group for the trailing five- and ten-year periods are listed in Figures 16 and 17.

POLICY PORTFOLIO BENCHMARKS

RELATIVE RETURNS. Benchmarking is all about answering the question, “how are we doing?” in ways that are both accurate and relevant to the objectives of the portfolio being measured. Performance results of peers can be informative, but they are not necessarily the most effective benchmark to evaluate an institution’s investment performance. Each nonprofit institution has its own unique blend of investment objectives, constraints, and risk tolerances. Therefore investment policies will vary within a peer group, leading to different asset allocation structures for institutions that may otherwise be considered worthy peers.

The comparison of an institution’s return to its policy portfolio benchmark is a better measure for determining whether a portfolio is being successfully managed against its target investment policy. The policy benchmark is typically a blend of indexes that represent the desired portfolio risk exposures without any expression of more active alternatives. In certain asset classes such as hedge funds and private investments, there are often no investable proxies and other types of benchmarks are used.

FIGURE 16 DISPERSION OF PARTICIPANTS' ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 5- and 10-Yr • As of June 30, 2018

	Public Equity ¹	Global Equity ²	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds	Public Real Assets ³	Commodities and Natural Resources	Public Real Estate
Trailing 5-Yr										
5th Percentile	11.4	14.0	14.7	11.2	8.1	4.1	7.1	5.5	2.6	10.4
25th Percentile	10.3	11.5	13.7	8.9	5.6	2.5	5.3	1.6	0.1	7.6
Median	9.8	10.3	12.6	8.1	4.7	2.0	4.1	-0.4	-1.5	7.1
75th Percentile	9.1	9.2	11.9	7.2	4.0	1.1	3.4	-1.9	-3.2	5.8
95th Percentile	7.9	6.5	10.2	5.4	2.4	0.4	2.4	-4.1	-6.0	4.8
Mean	9.7	10.2	12.4	8.2	4.9	2.0	4.4	0.0	-1.5	7.1
<i>n</i>	115	52	118	109	114	117	118	71	70	22
Trailing 10-Yr										
5th Percentile	9.1	11.1	12.6	7.9	6.0	5.9	6.4	2.1	1.5	9.1
25th Percentile	7.5	10.3	11.1	5.9	3.7	4.6	5.0	-0.6	-3.3	7.1
Median	7.1	8.5	10.2	5.1	2.4	3.9	4.1	-2.5	-4.5	5.9
75th Percentile	6.4	6.7	9.2	4.0	1.4	2.9	3.2	-4.1	-5.8	5.1
95th Percentile	5.3	2.1	7.7	2.1	0.2	1.4	2.0	-5.8	-8.0	2.2
Mean	7.1	8.0	10.1	4.9	2.8	3.7	4.1	-2.3	-4.3	5.8
<i>n</i>	100	29	105	94	84	99	101	51	45	19

Source: College and university data as reported to Cambridge Associates LLC.

¹ Public equity is a composite of global equity, US equity, developed markets ex US equity, and emerging markets equity.

² Global equity includes only investment vehicles that have a mandate to invest in US and international markets.

³ Total public real assets is a composite of public real estate, commodities, and inflation-linked bonds.

FIGURE 17 DISPERSION OF PARTICIPANTS' ASSET CLASS RETURNS: PRIVATE INVESTMENTS

Trailing 5- and 10-Yr • As of June 30, 2018

	Total Private Equity ¹	Non-Venture Private Equity ²	Venture Capital	Total Private Real Assets ³	Private Real Estate	Private Natural Resources
Trailing 5-Yr						
5th Percentile	20.1	20.9	27.6	13.9	17.3	11.9
25th Percentile	17.5	16.2	21.6	10.3	14.5	6.2
Median	15.4	14.0	15.8	7.1	12.0	2.4
75th Percentile	12.3	11.4	12.6	3.8	8.7	-0.9
95th Percentile	9.2	7.6	6.8	-0.9	-1.5	-5.0
Mean	14.9	14.1	17.0	6.8	10.5	2.5
<i>n</i>	113	106	96	91	92	92
Trailing 10-Yr						
5th Percentile	14.6	14.7	20.5	10.2	11.6	9.5
25th Percentile	12.4	11.5	15.8	6.6	7.1	5.8
Median	10.6	10.0	12.3	4.6	4.0	4.0
75th Percentile	9.0	8.4	10.1	2.0	1.3	1.6
95th Percentile	5.8	4.9	5.0	-4.0	-3.6	-4.7
Mean	10.7	10.0	12.7	3.6	3.9	3.4
<i>n</i>	106	101	87	83	87	75

Source: College and university data as reported to Cambridge Associates LLC.

Note: Private investment return statistics are reported as internal rates of return (IRRs).

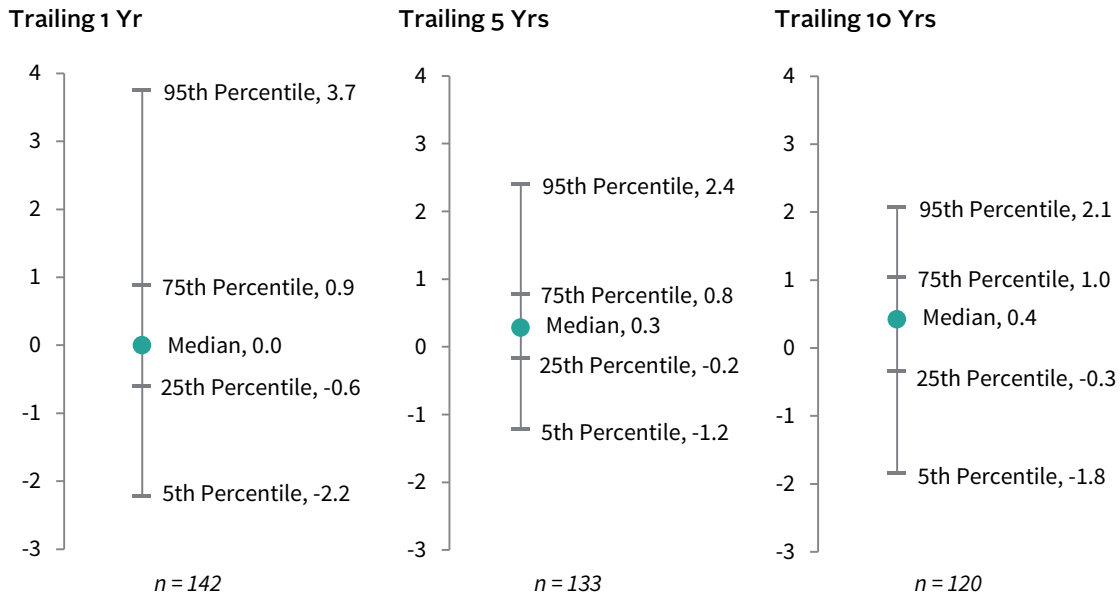
¹ Total private equity is a composite of non-venture private equity and venture capital.

² Non-venture private equity also includes distressed securities that are invested through a private investment vehicle.

³ Total private real assets is a composite of private real estate and private natural resources.

The median spread between the actual portfolio return and the policy portfolio benchmark return was 0.0% in fiscal year 2018. Effectively half of the peers underperformed their policy benchmark, while the other half outperformed. Most institutions fared well versus their policy benchmark over the longer time horizon. The median difference between the total portfolio AACR and the benchmark was 0.3 ppt and 0.4 ppt for the trailing five- and ten-year periods, respectively (Figure 18).

FIGURE 18 RANGE OF OUT/UNDERPERFORMANCE OF TOTAL RETURN VS POLICY PORTFOLIO BENCHMARK
As of June 30, 2018 • Percentage Points



Source: College and university data as reported to Cambridge Associates LLC.

Note: Data points represent the difference between the total portfolio return and the policy portfolio benchmark return.

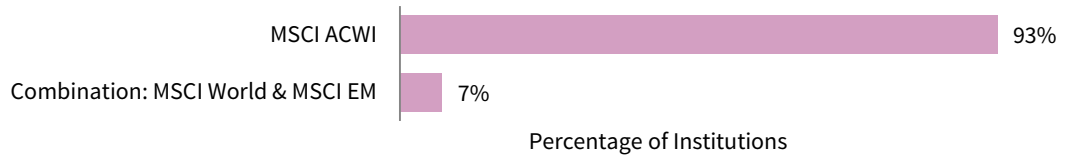
POLICY PORTFOLIO BENCHMARK COMPONENTS. Over 85% of the respondents (122 of 140) that provided a policy portfolio benchmark use a detailed, asset class-specific benchmark to evaluate the performance of the total portfolio. Most of the other 18 institutions that provided data use a simple benchmark that typically incorporates a broad-based equity market index and a bond index weighted in proportion to the overall risk profile of the portfolio. The analysis that follows includes only the data of the respondents that use a detailed policy portfolio benchmark.

The components of a detailed policy benchmark should align with the asset classes or role-in-portfolio categories stated in the portfolio’s asset allocation policy. Since policy allocations can be set at varying levels of granularity, approaches to benchmarking vary among institutions. One area where this is noticeable is in the benchmarking of public equities, where 61 respondents use a global index to benchmark their entire allocation while an equal number of respondents use separate geographic indexes (Figure 19). For institutions that use a global index for their entire public equity allocation, the MSCI ACWI Index was by far the most common index cited.

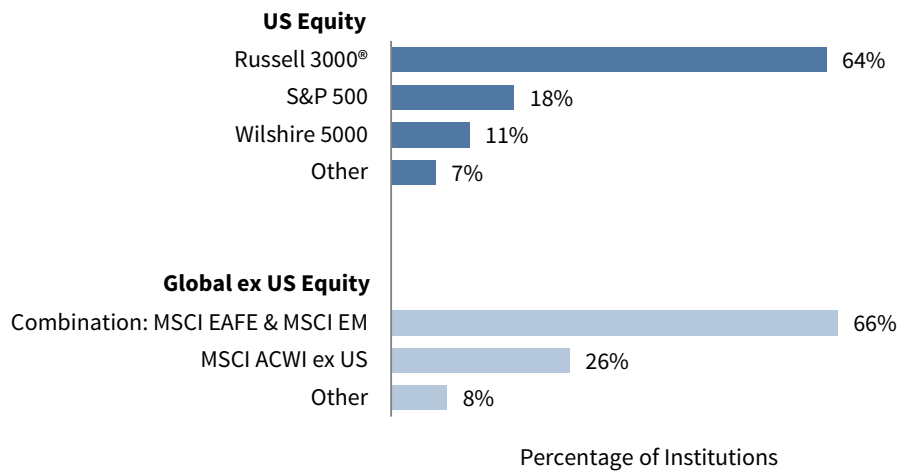
**FIGURE 19 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS:
PUBLIC AND PRIVATE EQUITY**

As of June 30, 2018

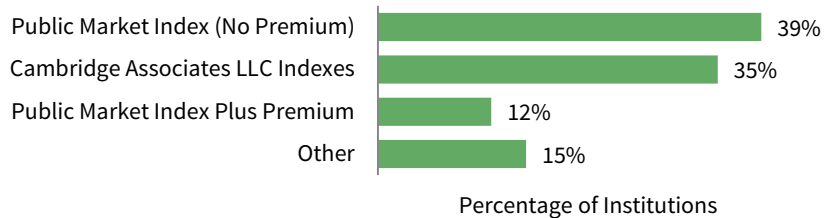
Institutions That Use a Global Index for the Entire Public Equity Allocation (n = 61)



Institutions That Use Separate Geographic Indexes for the Public Equity Allocation (n = 61)



Private Equity Indexes (n = 113)



Source: College and university data as reported to Cambridge Associates LLC.

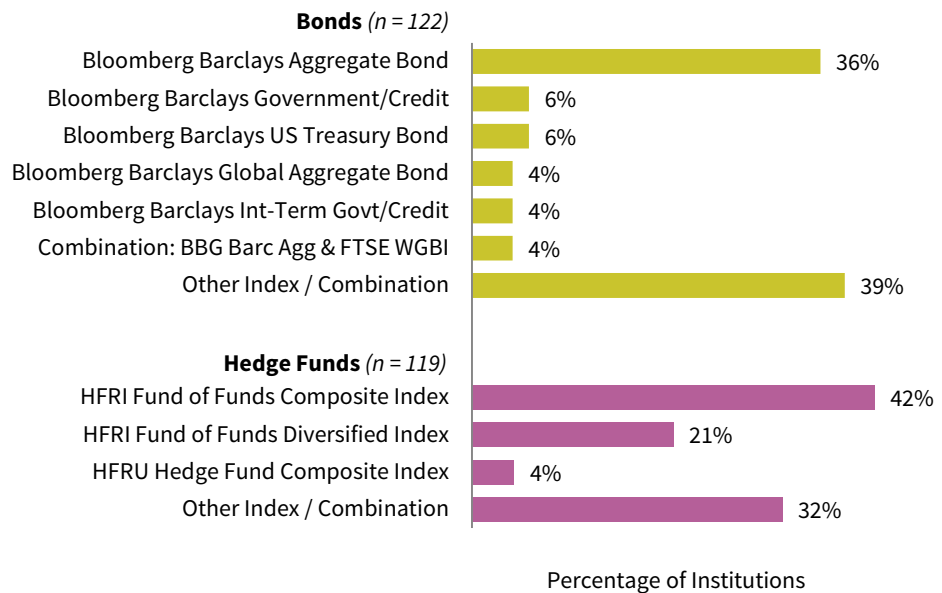
Among the 61 institutions that use separate public equity indexes based on geographic orientation, the Russell 3000® Index was cited by 64% for US equities. A slightly higher proportion of institutions (66%) used a blend of the MSCI EAFE and MSCI Emerging Markets indexes to measure global ex US equities. This approach is appropriate for institutions that have separate targets to global ex US developed and emerging markets, particularly if the targets are out of proportion to the weightings of the MSCI ACWI ex US Index.

The use of a public index(es) is the most common practice for benchmarking private equity in the policy portfolio benchmark, as 39% of respondents use the actual public index return. While another 12% of institutions add a prespecified percentage or premium to the public index return, the proportion of the peer group using this type of benchmark has dropped significantly in recent years. Approximately 30% of the peer group used a public index plus a premium as recently as five years ago in fiscal year 2013.

The use of solely the Bloomberg Barclays Aggregate Bond Index was the most common benchmarking approach for bonds and was reported by 36% of institutions (Figure 20). However, many institutions use unique index combinations to better reflect their underlying bond exposure. Benchmarks should depend on whether allocations are made domestically or globally, as well as the type of issuer (sovereign versus corporate or both). Most respondents use an HFRI index for hedge funds, with the Fund-of-Funds Composite Index reported by 42% of institutions. For real assets, benchmark combinations are unique across most participants due to the wide variety of strategies under this category.

FIGURE 20 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: BONDS AND HEDGE FUNDS

As of June 30, 2018



Source: College and university data as reported to Cambridge Associates LLC.

RISK-ADJUSTED PERFORMANCE

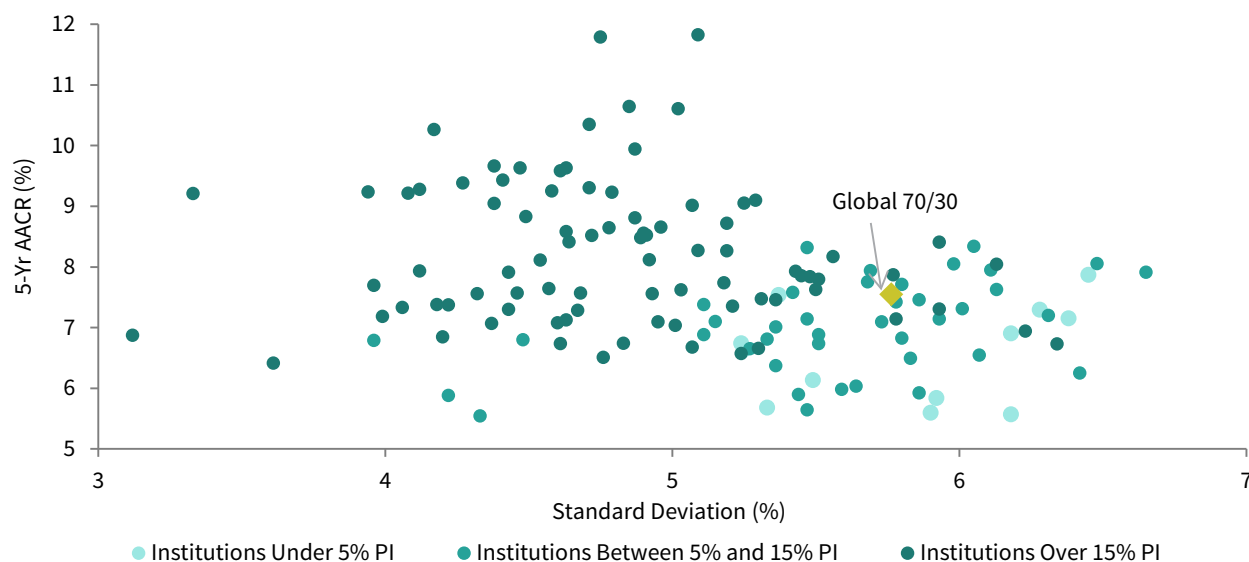
Risk adjusted performance is important to evaluate as it measures the total return relative to the total amount of risk taken by the portfolio. The most common approach to measuring risk-adjusted performance is by the Sharpe ratio, which shows how much return above the risk-free rate (T-bills) the investor 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 the amount of risk it has actually taken. For this reason, we have split institutions out into subcategories in Figure 21 based on their allocations to private investments.

Institutions that had an allocation of 15% or more to private investments over the last five years reported an average Sharpe ratio of 1.62, significantly higher than that of the other subgroups with smaller private allocations. Although 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.

FIGURE 21 STANDARD DEVIATION AND SHARPE RATIO

5 Yrs Ended June 30, 2018



	All Institutions	Mean by PI Allocation			70/30 Global Benchmark
	Mean	Under 5%	5%–15%	Over 15%	
5-Yr AACR	7.7	6.6	7.0	8.2	7.5
Standard Deviation	5.1	5.8	5.6	4.8	5.8
Sharpe Ratio	1.44	1.06	1.18	1.62	1.23
<i>n</i>	137	12	40	85	

Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited 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 70/30 benchmark is composed of 70% MSCI ACWI Index / 30% Bloomberg Barclays Aggregate Bond Index.

Portfolio Asset Allocation

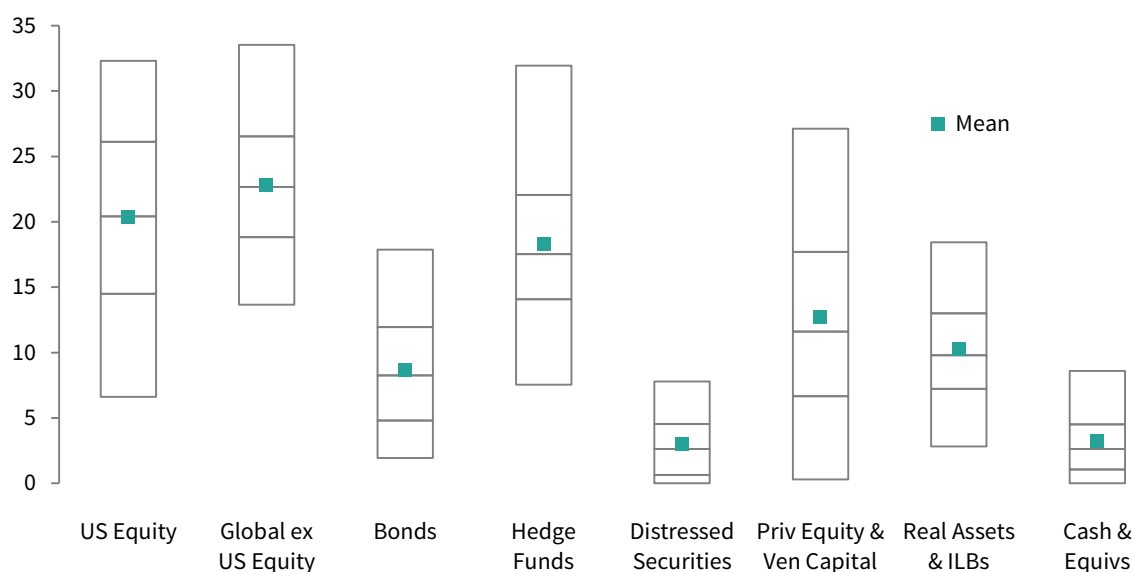
2018 ASSET ALLOCATION

Over 40% of the average LTIP consisted of public equities at June 30, 2018. On average, allocations to global ex US equities (22.8%) were higher than those to US equities (20.3%). Portfolios had significant exposure to alternative assets, with 18.3% allocated to hedge funds and 12.7% allocated to private equity and venture capital, on average. Another 3.0% was allocated, on average, to distressed securities, which are invested through either a hedge fund or private equity-type investment vehicle. Real assets, which consist of a diversified group of public and private assets, made up 10.3% of portfolios, on average. Average allocations to bonds and cash were 8.7% and 3.3%, respectively (Figure 22).

As Figure 23 shows, allocations to these broad asset classes vary considerably. A key factor in the variation of asset allocations continues to be the total value of assets under management. Portfolios with asset sizes under \$500 million continue to maintain higher allocations to public equities and bonds, while those with assets over \$1 billion have the highest allocations to private investments. Also displayed in Figure 23 is a more granular view of allocations within each broad asset class.

FIGURE 22 ASSET ALLOCATION DISTRIBUTION BY ASSET CLASS

As of June 30, 2018 • Percent (%) • n = 160



	US Equity	Global ex US Equity	Bonds	Hedge Funds	Distressed Securities	Priv Equity & Ven Capital	Real Assets & ILBs	Cash & Equivs
5th Percentile	32.3	33.5	17.9	31.9	7.8	27.1	18.4	8.6
25th Percentile	26.1	26.5	11.9	22.0	4.5	17.7	13.0	4.5
Median	20.4	22.7	8.3	17.5	2.6	11.6	9.8	2.6
75th Percentile	14.5	18.8	4.8	14.1	0.6	6.7	7.2	1.1
95th Percentile	6.6	13.7	1.9	7.6	0.0	0.3	2.8	0.0
Mean	20.3	22.8	8.7	18.3	3.0	12.7	10.3	3.3

Source: College and university data as reported to Cambridge Associates LLC.

FIGURE 23 SUMMARY ASSET ALLOCATION BY ASSET SIZE

As of June 30, 2018 • Percent (%)

	Under \$500M (n = 58)				\$500M – \$1B (n = 37)				Over \$1B (n = 65)			
	Low	Mean	Median	High	Low	Mean	Median	High	Low	Mean	Median	High
US Equity	10.5	25.7	25.9	56.5	3.8	20.0	21.3	43.6	3.5	15.8	16.0	28.9
Global ex US Equity	13.7	26.2	25.9	39.3	12.3	21.1	21.6	27.9	10.4	20.6	20.6	42.5
Developed Markets	1.9	18.1	18.8	29.8	8.4	14.4	14.7	22.8	2.7	12.6	12.9	26.2
Emerging Markets	3.3	8.1	7.8	13.3	2.9	6.7	6.1	12.5	1.5	8.0	7.7	19.7
Bonds	2.2	11.7	11.9	23.2	0.0	8.5	8.3	17.2	0.0	6.1	5.3	23.9
US Bonds	2.2	10.8	10.7	21.8	0.0	7.6	8.2	15.4	0.0	4.9	5.0	11.8
Global ex US Bonds (DM)	-0.4	0.3	0.0	3.8	0.0	0.3	0.0	5.8	-0.4	0.7	0.0	23.9
Global ex US Bonds (EM)	0.0	0.3	0.0	3.4	0.0	0.3	0.0	2.5	0.0	0.1	0.0	2.0
High-Yield Bonds	0.0	0.3	0.0	4.4	0.0	0.3	0.0	3.7	0.0	0.4	0.0	5.1
Hedge Funds	0.0	16.5	16.4	51.7	3.9	18.5	16.3	38.9	6.7	19.8	19.7	37.4
Long/Short Hedge Funds	0.0	5.8	4.6	28.1	0.0	6.8	5.3	22.7	0.0	9.2	8.9	28.9
Absolute Return (ex Distressed)	0.0	10.7	10.7	23.6	3.0	11.7	10.5	23.6	0.0	10.7	10.9	31.9
Distressed Securities	0.0	1.9	1.2	9.3	0.0	4.1	4.0	10.2	0.0	3.3	2.8	10.8
Hedge Fund Structure	0.0	1.1	0.1	9.3	0.0	2.2	2.0	9.9	0.0	1.8	1.4	7.6
Private Equity Structure	0.0	0.8	0.2	4.3	0.0	2.0	1.6	6.7	0.0	1.6	1.1	10.7
PE & VC	0.0	6.3	6.1	36.5	3.3	13.2	11.9	27.1	4.0	18.1	17.3	36.2
Non-Venture Private Equity	0.0	2.7	1.6	28.3	1.3	6.6	6.8	16.4	3.1	9.0	9.2	20.1
Venture Capital	0.0	2.5	1.6	12.2	0.1	5.2	4.0	17.9	0.0	8.4	8.4	24.7
Other Private Investments	0.0	1.1	0.9	4.1	0.0	1.4	0.4	9.9	0.0	0.7	0.0	9.9
Real Assets & Infl-Linked Bonds	0.0	7.5	7.8	14.2	1.4	10.6	10.5	25.0	2.7	12.7	12.6	26.2
Private Real Estate	0.0	0.9	0.2	8.1	0.1	2.9	2.4	8.1	0.2	4.1	3.7	11.7
Public Real Estate	0.0	0.5	0.0	5.2	0.0	1.0	0.0	5.5	0.0	0.5	0.0	6.2
Commodities	0.0	0.5	0.0	3.0	0.0	0.2	0.0	2.3	0.0	0.7	0.0	8.4
Public Energy/Nat Resources	0.0	3.5	3.2	10.6	0.0	2.1	2.1	7.5	0.0	1.3	0.1	10.6
Private O&G/Nat Resources	0.0	1.5	0.8	5.5	0.0	3.8	3.3	12.5	0.0	5.3	5.2	12.5
Timber	0.0	0.1	0.0	1.9	0.0	0.2	0.0	1.7	0.0	0.4	0.1	4.7
Inflation-Linked Bonds	0.0	0.6	0.0	5.1	0.0	0.4	0.0	4.6	0.0	0.4	0.0	5.0
Cash & Equivalents	-4.3	2.9	2.1	19.4	0.0	4.0	3.9	11.2	-1.4	3.1	2.2	10.5
Other	0.0	1.2	0.0	32.6	0.0	0.1	0.0	1.2	-9.4	0.3	0.0	8.4

Source: College and university data as reported to Cambridge Associates LLC.

HISTORICAL ASSET ALLOCATION

Institutional investors that have adopted the endowment model of investing have seen significant shifts in their asset allocation policies over the last few decades. Exposure to bonds has decreased while the larger equity allocation has become more diversified. The largest endowments pioneered this transition in the 1980s, with the trend spreading among other institutions in the 1990s and then accelerating throughout much of the first decade of the new millennium. By the time that the 2008 financial crisis occurred, most endowments in this study had already built highly diversified portfolios.

Compared to prior decades, the changes in the average asset allocation of the participant group have been relatively minor over the last ten years. For the constant group of endowments that reported data for each of the last ten years, the largest increase was to private equity and venture capital where the mean allocation has increased by 4.4 ppts over the last ten years (Figure 24). In addition, the mean allocations to emerging markets equities (2.3 ppts) and cash (1.4 ppts) were higher than what was reported a decade prior. The asset classes experiencing the largest decreases were bonds (-3.5 ppts), real assets (-2.0 ppts), and US equities (-1.9 ppts). Figure 25 shows the changes in average asset allocation from 2008 to 2018 for the three broad asset size groups.

TARGET ASSET ALLOCATION

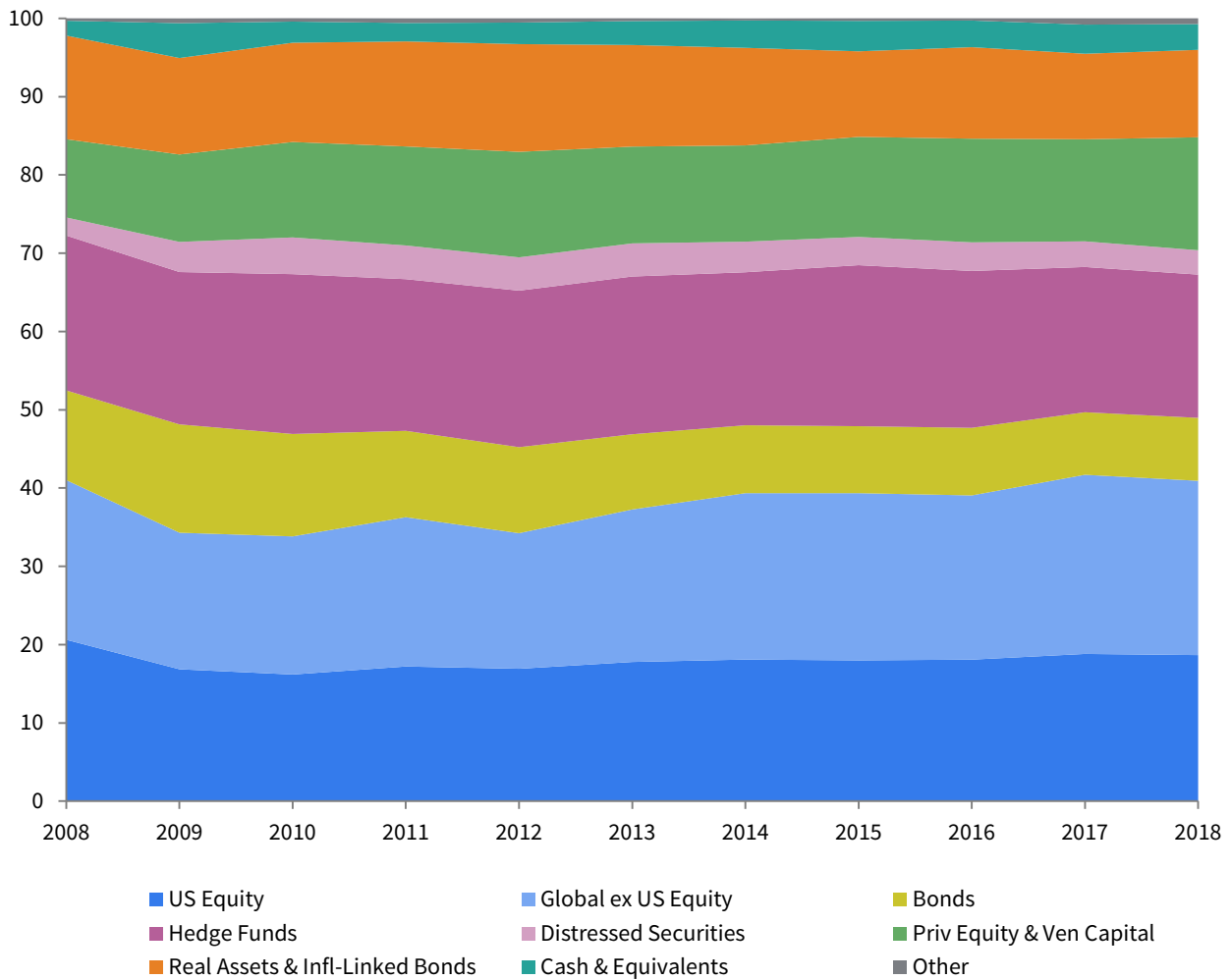
Though long-term asset allocation trends clearly show how investment policies have evolved over time, one-year changes in actual allocations can be influenced by factors such as asset returns and rebalancing flows. Using shorter-term data can be misleading in determining whether institutions are altering their long-term asset allocation policies. An analysis of target asset allocations is more suitable for such an evaluation.

Most survey participants (148 of 160) provided target asset allocation data for fiscal year 2018. Institutions construct their target asset allocation mix under different frameworks. Of the 148 institutions that provided target asset allocation data, 78% reported data using the traditional asset allocation–centered structure. The remaining institutions reported data using other frameworks, including role-in-portfolio. Under the role-in-portfolio framework, targets are set to broad categories based on the roles that certain investments are expected to play in the portfolio (e.g., growth, deflation-hedging, diversifier).

Our trend analysis on this topic focuses on institutions that reported under the traditional asset allocation–centered framework. Just under one-third (32%) of these institutions made a change to their policy targets in fiscal year 2018. Institutions with portfolios over \$1 billion were most likely to make changes to their policy targets (35%) followed by midsized portfolios (33%) and smaller portfolios (28%).

FIGURE 24 HISTORICAL MEAN ASSET ALLOCATION TRENDS

Years Ended June 30 • Percent (%)



	Constant Universe											All C&U
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2018
US Equity	20.6	16.8	16.2	17.2	16.9	17.8	18.1	18.0	18.1	18.8	18.7	20.3
Global ex US Equity	20.4	17.4	17.6	19.1	17.3	19.5	21.3	21.4	21.0	22.9	22.3	22.8
<i>Developed Markets</i>	14.9	12.3	12.0	12.7	11.1	12.7	13.7	13.9	13.5	15.0	14.5	15.0
<i>Emerging Markets</i>	5.5	5.2	5.7	6.4	6.2	6.8	7.6	7.4	7.4	7.9	7.8	7.7
Bonds	11.5	13.8	13.1	11.0	11.0	9.6	8.7	8.6	8.6	8.0	8.0	8.7
Hedge Funds	19.8	19.5	20.4	19.4	20.0	20.2	19.6	20.6	20.0	18.6	18.3	18.3
Distressed Securities	2.3	3.8	4.7	4.3	4.2	4.2	3.9	3.6	3.7	3.3	3.1	3.0
Priv Equity & Ven Capital	10.0	11.2	12.2	12.6	13.5	12.4	12.3	12.8	13.2	13.0	14.4	12.7
Real Assets & Infl-Linked Bonds	13.2	12.3	12.7	13.4	13.8	13.0	12.5	10.9	11.7	10.9	11.2	10.3
Cash & Equivalents	1.9	4.5	2.7	2.4	2.8	3.1	3.5	3.9	3.4	3.7	3.3	3.3
Other	0.3	0.6	0.4	0.6	0.5	0.4	0.3	0.3	0.3	0.8	0.7	0.6

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Constant universe represents 120 institutions that provided asset allocation data for each year from 2008 to 2018. All C&U represents 160 institutions that provided 2018 data.

FIGURE 25 TRENDS IN ASSET ALLOCATION BY ASSET SIZE

Equal-Weighted Means as of June 30 • Percent (%)

	US	Global ex US			Bonds	Hedge Funds	Dist Sec	PE & VC	RA & ILBs	Cash & Equiv
	Equity	Total	Dev	EM						
Under \$500M (n = 31)										
2008	27.3	22.2	17.6	4.7	15.8	15.9	1.3	4.2	10.9	2.1
2018	23.7	25.7	18.0	7.7	10.6	16.3	2.0	7.8	8.4	3.2
Change (ppt)										
2008–2018	-3.6	3.4	0.4	3.0	-5.2	0.5	0.6	3.6	-2.5	1.1
\$500M to \$1B (n = 29)										
2008	20.4	19.7	14.8	5.0	12.1	21.0	2.4	9.3	11.9	2.9
2018	19.9	21.6	14.8	6.8	9.0	17.3	4.3	13.2	10.8	3.6
Change (ppt)										
2008–2018	-0.5	1.9	0.1	1.8	-3.1	-3.7	1.9	3.9	-1.1	0.8
Over \$1B (n = 60)										
2008	17.2	19.7	13.5	6.2	8.9	21.2	2.8	13.3	15.1	1.3
2018	15.4	20.8	12.6	8.2	6.2	19.8	3.1	18.4	12.8	3.2
Change (ppt)										
2008–2018	-1.8	1.1	-0.9	2.0	-2.6	-1.4	0.4	5.1	-2.3	1.8

Source: College and university data as reported to Cambridge Associates LLC.

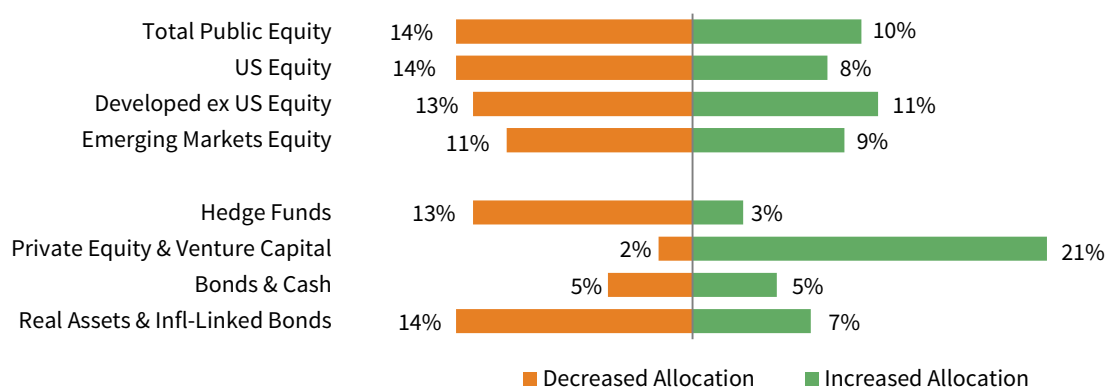
Note: Asset sizes are based on June 30, 2018, data.

As shown in Figure 26, 21% of respondents raised their target allocation to private equity and venture capital in fiscal year 2018, while just 2% lowered their target. The trend was the opposite for hedge funds, where 13% of endowments lowered their target, while just 3% reported an increase. In real assets, the proportion of endowments lowering their target (14%) was double the proportion that reported increases.

Figure 27 shows changes in target asset allocation data for the three broad asset size groups.

FIGURE 26 CHANGES IN TARGET ASSET ALLOCATION

June 30, 2017 – June 30, 2018 • Percentage of Institutions Increasing or Decreasing Targets



Source: College and university data as reported to Cambridge Associates LLC.

Note: Real assets includes targets to both public and private assets.

FIGURE 27 CHANGES IN TARGET ASSET ALLOCATION BY ASSET SIZE

June 30, 2017 – June 30, 2018

	Total Equity	US Equity	DM ex US Equity	EM Equity	Hedge Funds	PE & VC	Bonds & Cash	RA & ILBs	Other
Under \$500M (n = 39)									
Mean Target AA (%)									
2017	47.7	23.5	16.0	7.7	17.6	10.0	14.0	10.2	0.5
2018	47.4	23.5	15.5	7.6	17.6	10.7	14.0	9.7	0.5
% of Inst Making Changes to Targets									
Increased	8%	6%	14%	9%	3%	18%	3%	5%	0%
Decreased	13%	6%	9%	9%	5%	0%	5%	18%	0%
\$500M – \$1B (n = 27)									
Mean Target AA (%)									
2017	39.9	18.3	13.3	7.8	21.0	16.3	11.2	11.0	0.7
2018	40.3	18.5	13.3	7.8	20.3	16.7	11.1	10.6	1.0
% of Inst Making Changes to Targets									
Increased	15%	19%	15%	15%	4%	19%	7%	4%	4%
Decreased	7%	6%	8%	8%	19%	0%	7%	15%	0%
Over \$1B (n = 46)									
Mean Target AA (%)									
2017	36.6	16.5	13.0	8.6	19.9	18.3	9.8	13.4	2.0
2018	36.2	15.9	12.5	8.6	19.5	18.8	9.8	13.6	2.1
% of Inst Making Changes to Targets									
Increased	9%	4%	6%	5%	2%	24%	7%	11%	4%
Decreased	20%	30%	22%	14%	17%	4%	4%	11%	4%

Source: College and university data as reported to Cambridge Associates LLC.

Note: Asset sizes are based on June 30, 2018, data.

ASSET COMPOSITION

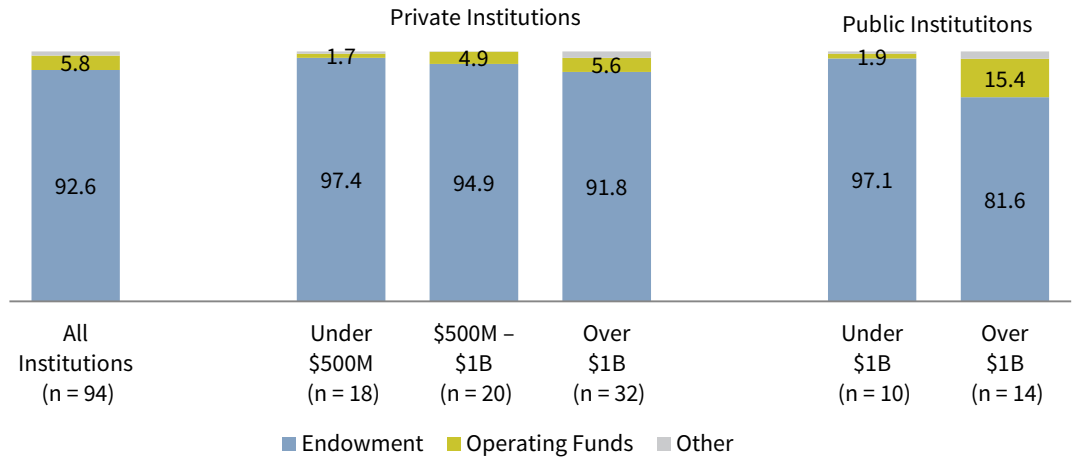
LONG-TERM INVESTMENT PORTFOLIO. The LTIP is the group of assets for which institutions report their asset allocation and returns in this study. Endowment assets compose all or the vast majority of the LTIP for most institutions in this study. On average, 92.6% of the LTIP were endowment assets as of June 30, 2018 (Figure 28).

In addition to endowment assets, many institutions invest a portion of their operating funds and/or other assets in the LTIP. On average, operating funds and other assets represented 5.8% and 1.7% of the LTIP, respectively. Examples of other assets in the LTIP include life income and annuity funds, special purpose funds, and assets invested by external organizations.

The average composition of the LTIP is mostly similar when the respondent group is broken down across public and private institutions in different size bands. Public universities with portfolios over \$1 billion tend to have a higher proportion of non-endowment assets in their LTIP than other institutions. On average, operating funds and other assets represented 15.4% and 3.0% of the LTIP, respectively, for these public institutions with larger portfolios.

FIGURE 28 COMPOSITION OF LONG-TERM INVESTMENT PORTFOLIO

Equal-Weighted Means as of Fiscal Year End 2018



Source: College and university data as reported to Cambridge Associates LLC.

ENDOWMENT. On average, 66.2% of endowment assets were donor-restricted at private institutions while the remaining assets were unrestricted (Figure 29). When broken out by asset size, the largest private institutions had a slightly higher proportion of donor-restricted assets compared to the smallest endowments (68.4% versus 63.6%).

The proportion of endowment consisting of donor-restricted assets (83.3%) was higher at public institutions. For public institutions, there was a greater differential between large and smaller portfolios in endowment composition. On average, donor-restricted assets represented 78.8% of endowment for portfolios greater than \$1 billion compared to 89.5% for portfolios less than \$1 billion.

FIGURE 29 CLASSIFICATION OF ENDOWMENT FUNDS

Equal-Weighted Means as of Fiscal Year End 2018



Source: College and university data as reported to Cambridge Associates LLC.

Note: Institutions grouped by fiscal year 2018 market value of endowment assets.

PRIVATE INVESTMENTS AND UNCALLED CAPITAL COMMITMENTS

One of the core principles of the endowment model is the use of private investments that, in part due to their illiquid nature, offer the potential for higher long-term returns than those of public equities. Participating institutions, particularly those with larger asset sizes, allocate a significant portion of their portfolios to private investments. The average allocation to private investments for all participants was 20.5%, while those with portfolios greater than \$1 billion had an average allocation of 29.6% (Figure 23).

Investors should be mindful of the liquidity implications of investing in and funding a private investments program. Uncalled capital represents a commitment of capital to be funded in the future. Although annual spending distributions usually represent the biggest liquidity need of a portfolio, institutions with private investment programs must also consider the potential impact of uncalled capital commitments.

For participants with private investment programs, uncalled capital commitments as a percentage of the total LTIP value averaged 13.8% at the end of fiscal year 2018 (Figure 30). Predictably, institutions with larger asset sizes tend to have a higher ratio of uncalled capital commitments to the total long-term investment portfolio value. For those with asset sizes greater than \$1 billion, uncalled capital commitments represented an average of 17.8% of their total LTIP value (ranging from 10.0% to 26.2%, excluding outliers).

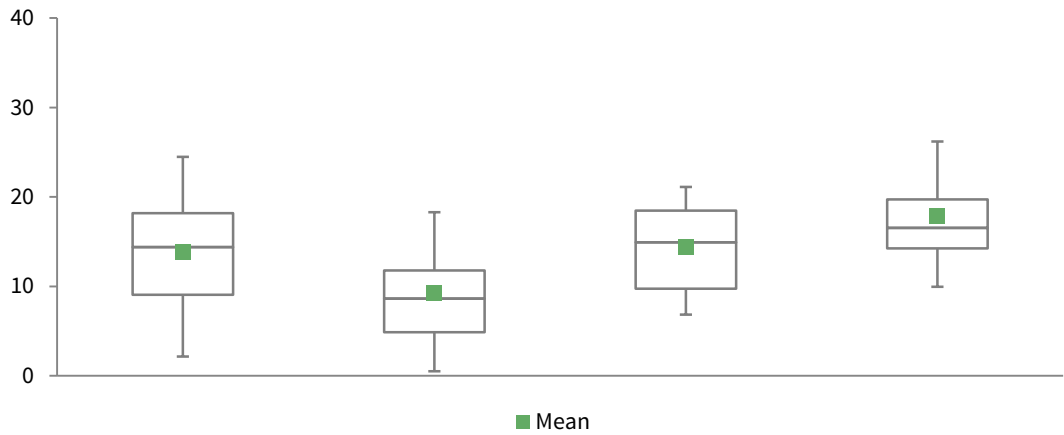
Larger portfolios also tend to have a higher ratio of uncalled capital commitments to the LTIP's total liquid assets, which exclude hedge funds and private investments. For institutions with asset sizes greater than \$1 billion, uncalled capital commitments represented an average of 39.2% of their total liquid assets. For institutions with asset sizes under \$500 million, the average was 13.5%.

Of the participants that have provided consistent historical data, over 90% (89 of 96) reported an increase in the dollar amount of uncalled capital commitments over the last five years. The median percent change in the amount of uncalled capital commitments among all institutions was 101%. Over the same five-year period, the median percent change in the market value of the LTIP (31%) and the portfolio's liquid assets (40%) was substantially lower. As a result, both of the aforementioned ratios increased for most colleges and universities. The trend in the median ratios for all institutions and the three asset size groups are displayed in Figure 31.

FIGURE 30 UNCALLED CAPITAL COMMITTED TO PRIVATE INVESTMENT FUNDS

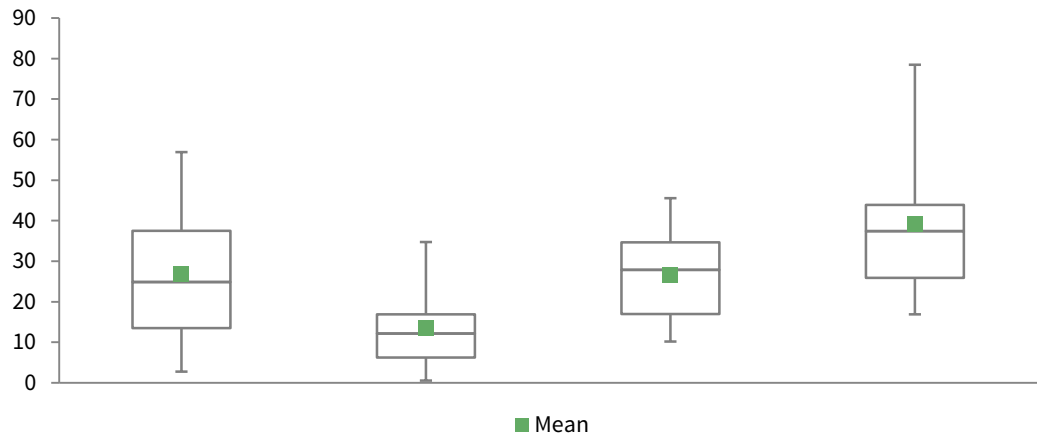
As of June 30, 2018 • Percent (%)

Uncalled Capital Commitments as a Percentage of the Total LTIP



	All Institutions	Under \$500M	\$500M – \$1B	Over \$1B
5th Percentile	24.5	18.3	21.1	26.2
25th Percentile	18.2	11.8	18.5	19.7
Median	14.4	8.6	14.9	16.5
75th Percentile	9.1	4.9	9.7	14.2
95th Percentile	2.2	0.5	6.9	10.0
Mean	13.8	9.2	14.3	17.8
<i>n</i>	133	48	33	52

Uncalled Capital Commitments as a Percentage of the LTIP's Liquid Assets

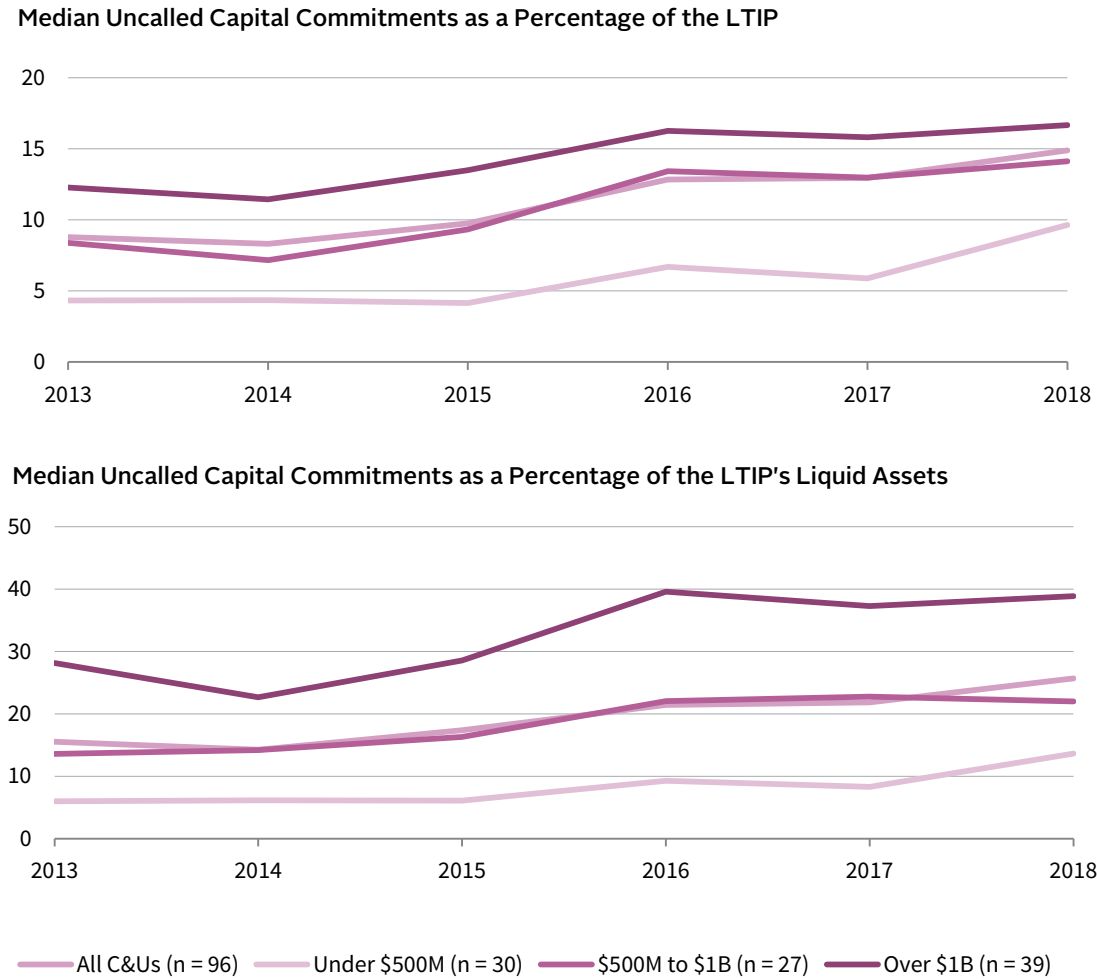


	All Institutions	Under \$500M	\$500M – \$1B	Over \$1B
5th Percentile	56.9	34.8	45.6	78.5
25th Percentile	37.5	16.9	34.7	43.9
Median	24.9	12.1	27.9	37.4
75th Percentile	13.5	6.2	17.0	25.9
95th Percentile	2.8	0.6	10.2	16.9
Mean	26.8	13.5	26.7	39.2
<i>n</i>	133	48	33	52

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Uncalled capital is the amount committed, but not yet paid in, to private investment funds. Liquid assets consist of all LTIP assets excluding hedge funds and private investments. Private investments include non-venture private equity, venture capital, distressed securities (private equity structure), private oil & gas/natural resources, private real estate, and timber.

FIGURE 31 TREND IN UNCALLED CAPITAL COMMITMENTS TO PRIVATE INVESTMENT FUNDS
 Years Ended June 30 • Percent (%)



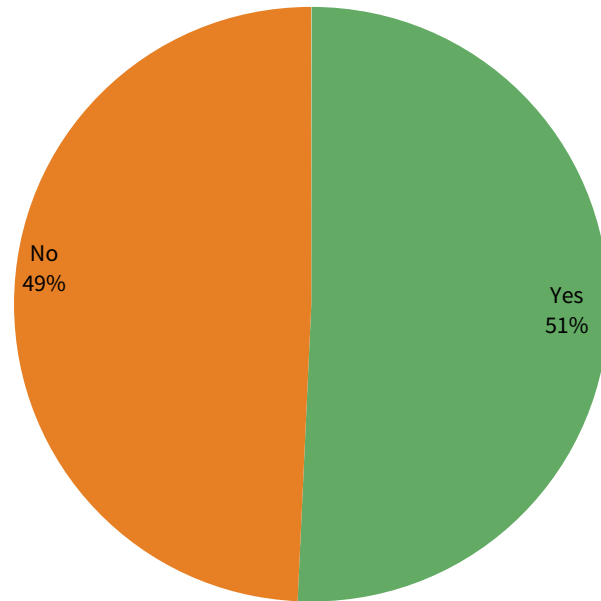
Source: College and university data as reported to Cambridge Associates LLC.
 Notes: Uncalled capital is the amount committed, but not yet paid in, to private investment funds. Liquid assets consist of all LTIP assets excluding hedge funds and private investments. Private investments include non-venture private equity, venture capital, distressed securities (private equity structure), private oil & gas/natural resources, private real estate, and timber.

As the ratios of unfunded capital commitments to assets continue to rise, the potential liquidity risks associated with funding future capitals can increase as well. In prior years, these risks have been mitigated for most institutions due to the self-funding nature of private investment program cash flows. However in 2018, just over one-half (51%) of participants reported that their private investment programs were cash flow positive, meaning the amount of fund distributions was higher than paid-in capital calls (Figure 32). For participants whose private investment fund distributions are not enough to offset new capital calls, the remaining funding of capital calls has to come from cash reserves or other liquidity sources, which could include proceeds from sales of other investment assets in the LTIP.

FIGURE 32 PRIVATE INVESTMENT PROGRAM CASH FLOW

As of June 30, 2018 • n = 136

Was Your Private Investment Program Cash Flow Positive in 2016?



By Asset Size

	Yes	No
Under \$500M	41%	59%
<i>n</i>	20	29
\$500M – \$1B	50%	50%
<i>n</i>	16	16
Over \$1B	60%	40%
<i>n</i>	33	22

Source: College and university data as reported to Cambridge Associates LLC.

Note: Private investment fund programs were considered cash flow positive if fund distributions were higher than paid in capital calls in 2018.

Investment Manager Structures

NUMBER OF EXTERNAL MANAGERS

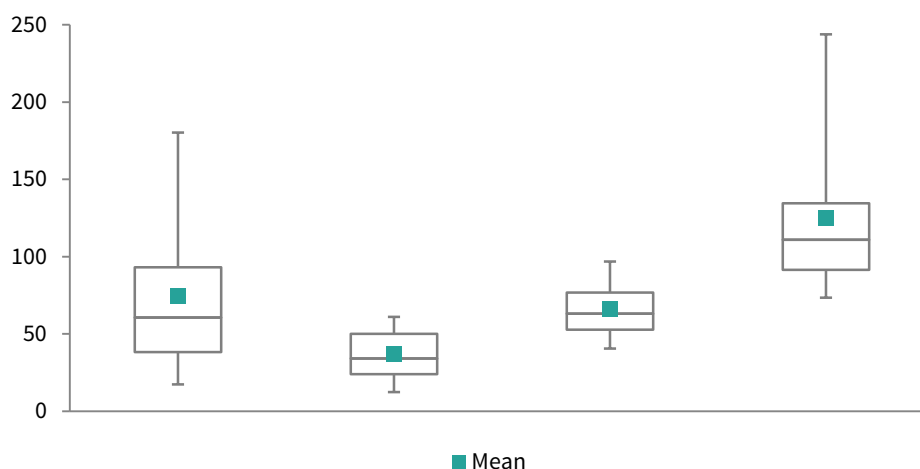
Many factors contribute to the number of managers employed within an investment portfolio. The scale of total assets under management is a primary factor, as portfolios with more assets generally spread their assets across a greater number of managers.

On average, college and universities with assets over \$1 billion employed 125 external investment managers in 2018 (Figure 33). In contrast, mid-sized portfolios had an average of 66 managers, while smaller portfolios reported even fewer (37). For institutions that have provided historical data, the average number of external managers has trended higher over the last five years across all asset size groups (Figure 34).

Even within the broad asset size groups, the range of managers employed can be wide. Within the smallest portfolios, the number of managers employed at the 25th percentile (50) is more than double the number used at the 75th percentile (24). For portfolios over \$1 billion, 244 managers are employed at the 5th percentile compared to just 74 at the 95th percentile. Much of the variation can be attributed to the management of alternative asset classes. As Figure 35 shows, the dispersion in the number of alternative asset managers employed, particularly within private investments, is much wider than that of the more traditional equity and bond asset classes. Further detail on these and other asset classes are provided for the three broad asset size groups in Figure 36.

FIGURE 33 NUMBER OF EXTERNAL MANAGERS

As of June 30, 2018



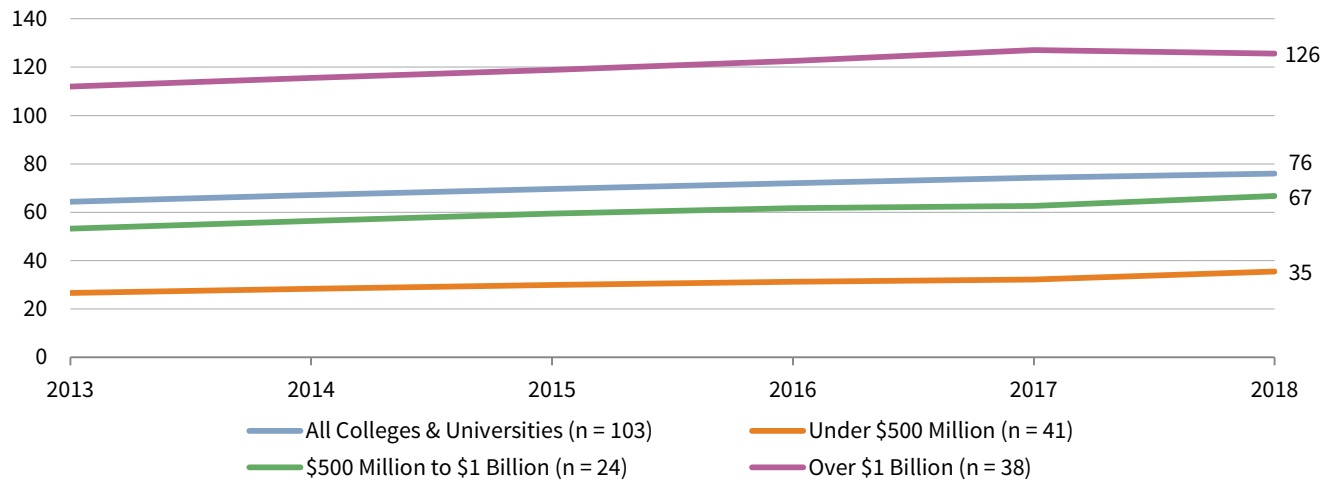
	All Institutions	Under \$500M	\$500M – \$1B	Over \$1B
5th Percentile	180	61	97	244
25th Percentile	93	50	77	135
Median	61	34	63	111
75th Percentile	38	24	53	92
95th Percentile	17	12	41	74
Mean	75	37	66	125
<i>n</i>	134	55	32	47

Source: College and university data as reported to Cambridge Associates LLC.

Note: Funds-of-funds are counted as one separate investment manager.

FIGURE 34 TREND IN NUMBER OF AVERAGE EXTERNAL MANAGERS

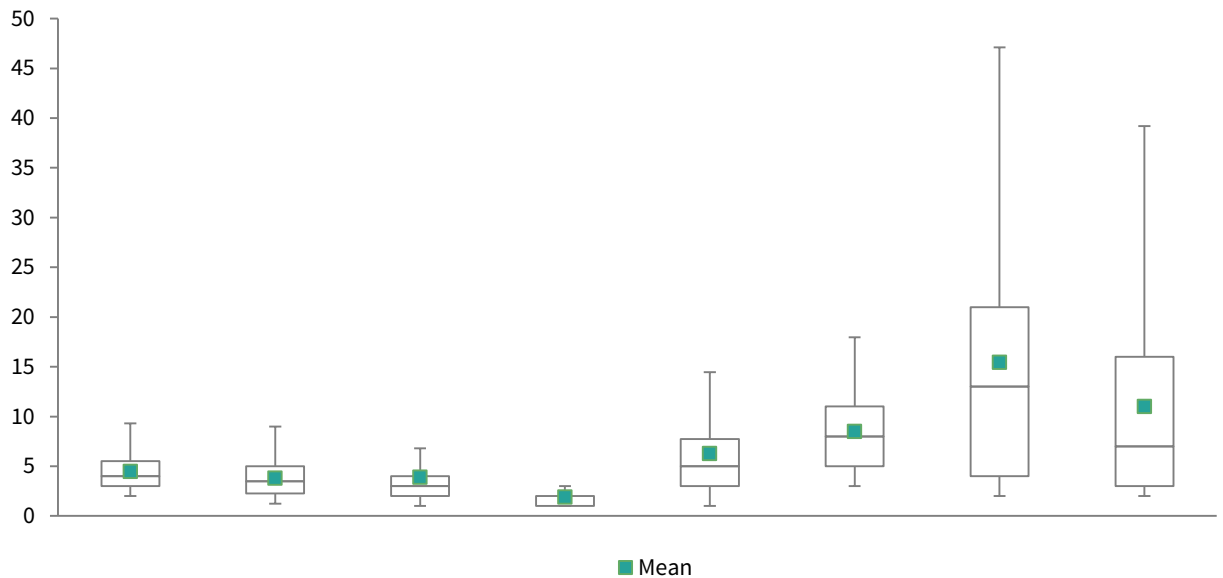
2013–18



Source: College and university data as reported to Cambridge Associates LLC.

FIGURE 35 DISPERSION IN NUMBER OF MANAGERS FOR SELECTED ASSET CLASSES

As of June 30, 2018



	US Equity	DM ex US Equity	Emerging Markets Equity	US Bonds	Long/Short Hedge Funds	Ab Return Hedge Funds	Private Equity	Venture Capital
5th %ile	9	7	8	4	15	15	43	31
25th %ile	6	5	4	2	8	11	21	16
Median	4	4	3	2	5	8	13	7
75th %ile	3	2	2	1	3	5	4	3
95th %ile	2	1	1	1	1	2	2	1
Mean	4	4	4	2	6	8	15	11
n	135	130	135	121	118	133	124	119

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Only those institutions with an allocation to the specific asset class have been included. Funds-of-funds are counted as one manager.

FIGURE 36 EXTERNAL MANAGERS BY STRATEGY

As of June 30, 2018

Strategy	Under \$500M		\$500M – \$1B		Over \$1B	
	Average Number of Managers	<i>n</i>	Average Number of Managers	<i>n</i>	Average Number of Managers	<i>n</i>
Traditional Equity						
Global Equity	3	34	4	17	4	30
US Equity	4	55	4	33	6	47
Developed ex US Equity	3	54	3	32	5	44
Emerging Markets Equity	3	55	3	33	6	47
Traditional Bonds						
Global Bonds	1	16	1	8	1	10
US Bonds	2	54	2	29	2	38
Developed ex US Bonds	--	0	1	1	2	5
Emerging Markets Bonds	1	4	1	4	1	5
High-Yield Bonds	1	7	1	5	2	9
Hedge Funds						
Long/Short Hedge Funds	4	46	5	30	9	42
Absolute Return (ex Dist Securities)	6	54	8	33	11	46
Distressed Securities						
Distressed (Hedge Fund Structure)	1	28	2	27	3	34
Distressed (Private Equity Structure)	3	35	5	31	7	38
Private Investments						
Non-Venture Private Equity	5	45	14	34	27	45
Venture Capital	3	41	8	34	21	44
Other Private Investments	2	40	3	19	3	20
Real Assets & ILBs						
Private Real Estate	2	36	7	32	14	45
Public Real Estate	1	11	1	14	1	12
Commodities	1	10	1	3	2	16
Inflation-Linked Bonds (TIPS)	1	13	1	3	1	4
Private Oil & Gas / Natural Resources	3	36	6	30	12	44
Timber	1	3	2	9	2	21
Public Energy/Natural Resources	2	44	2	22	3	23
Diversified (Multi-Strategy) RA	1	13	1	3	1	1
Cash (Dedicated Cash Managers Only)	1	48	2	22	2	26
Tactical Asset Allocation	1	10	1	1	2	2
Other	1	2	1	1	3	9

Source: College and university data as reported to Cambridge Associates LLC.

Notes: *n* indicates the number of colleges and universities that are included in the average number of managers. Only those institutions with an allocation to the specific asset class are included in each category. As a result, the sum of the individual asset classes will not equal the true total average of managers.

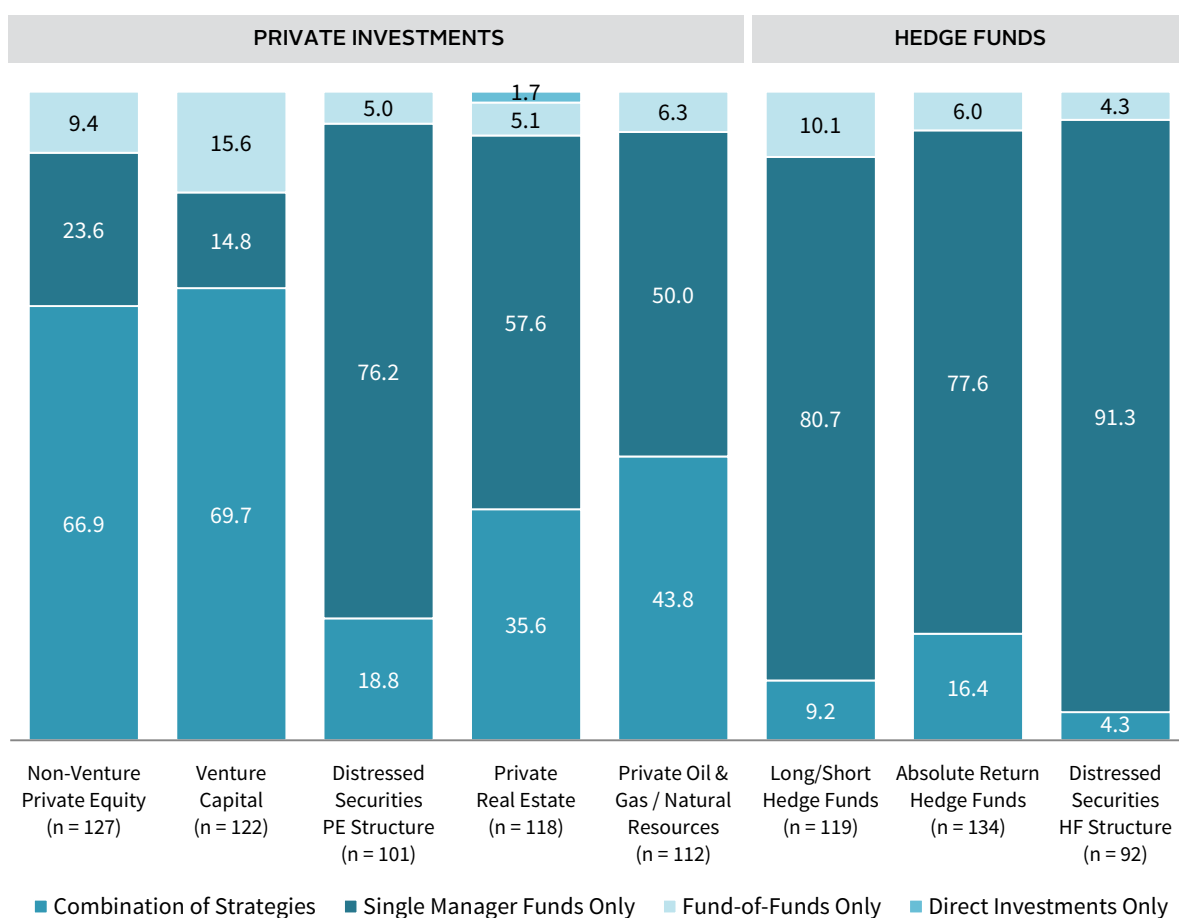
ASSET CLASS IMPLEMENTATION

ALTERNATIVE ASSETS. Institutions can use different strategies when it comes to implementing their alternative asset allocations. For hedge funds, there are two primary types of investment vehicles that institutions use. A single manager fund is a type of investment vehicle where the investment manager makes the decisions for the securities and assets held within the fund. In contrast, a fund-of-funds is a type of strategy where the investment manager invests in a collection of other investment funds. Within each of the hedge fund categories in our asset allocation framework, the vast majority of institutions solely use single manager funds to implement their allocations (Figure 37).

Implementation practices are more varied across private investment asset classes. A combination of single manager funds and funds-of-funds were used by a majority of respondents for non-venture private equity (67%) and venture capital (70%). A sole reliance upon single manager funds was most prevalent with private distressed securities (76%), private real estate (58%), and private oil & gas/natural resources (50%). Smaller portfolios generally employ more funds-of-funds managers than larger portfolios in all private investment asset classes.

FIGURE 37 PORTFOLIO IMPLEMENTATION: PRIVATE INVESTMENTS AND HEDGE FUNDS

As of June 30, 2018 • Participating Institutions (%)



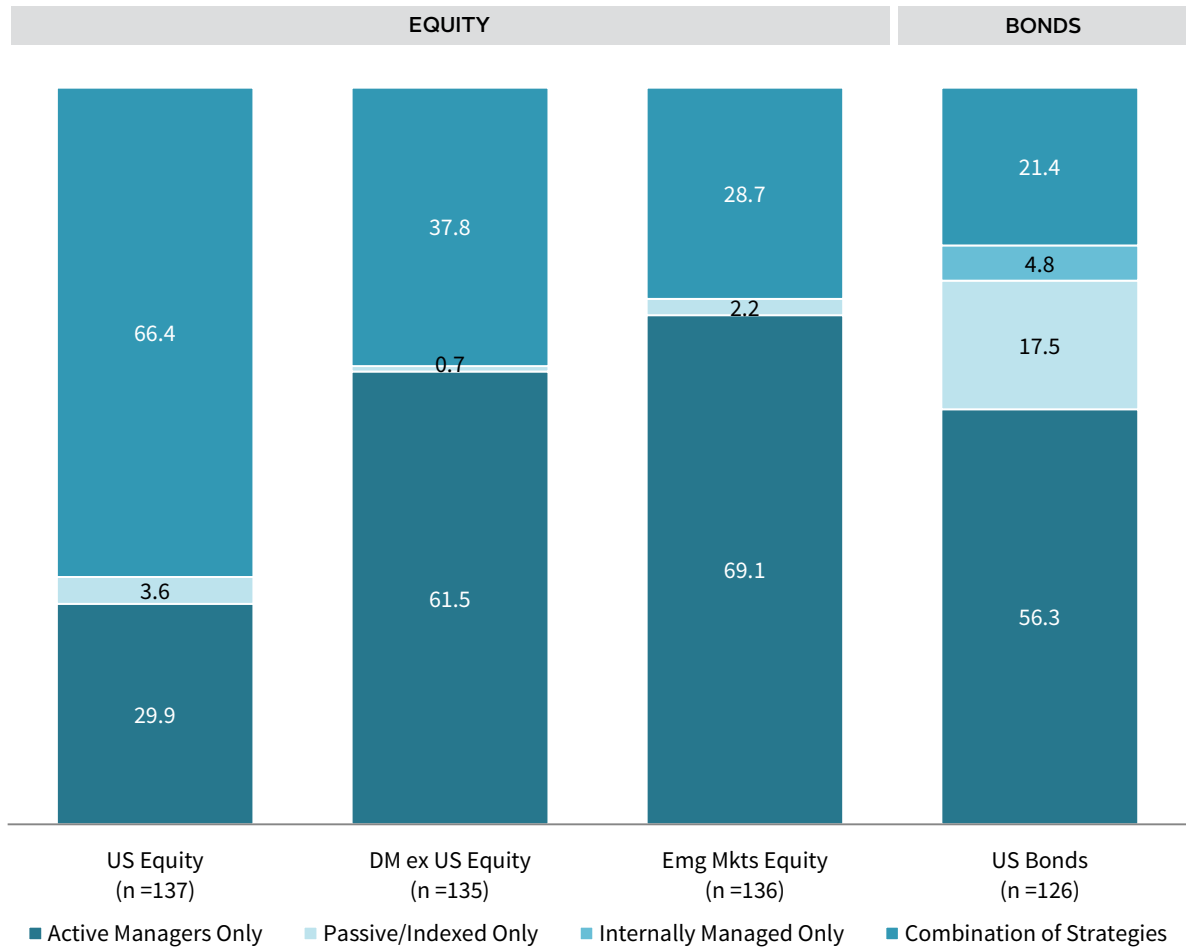
Source: College and university data as reported to Cambridge Associates LLC.

Note: *n* represents the number of institutions that provided the portfolio implementation for each asset class.

PUBLIC EQUITIES AND BONDS. Of the colleges and universities that provided implementation data on traditional asset classes, 30% used active managers for all of their US equity allocation, while most (66%) reported a combination of active and passive implementation (Figure 38). Among those that use a combination of strategies, more than two-thirds of the US equity allocation was implemented through active management. For global ex US equities, developed markets and emerging markets allocations were achieved solely through active managers for 62% and 69% of respondents, respectively. For US bonds, 56% of respondents used only active managers for their allocation.

FIGURE 38 PORTFOLIO IMPLEMENTATION: TRADITIONAL EQUITIES AND BONDS

As of June 30, 2018 • Participating Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: *n* represents the number of institutions that provided the portfolio implementation for each asset class.

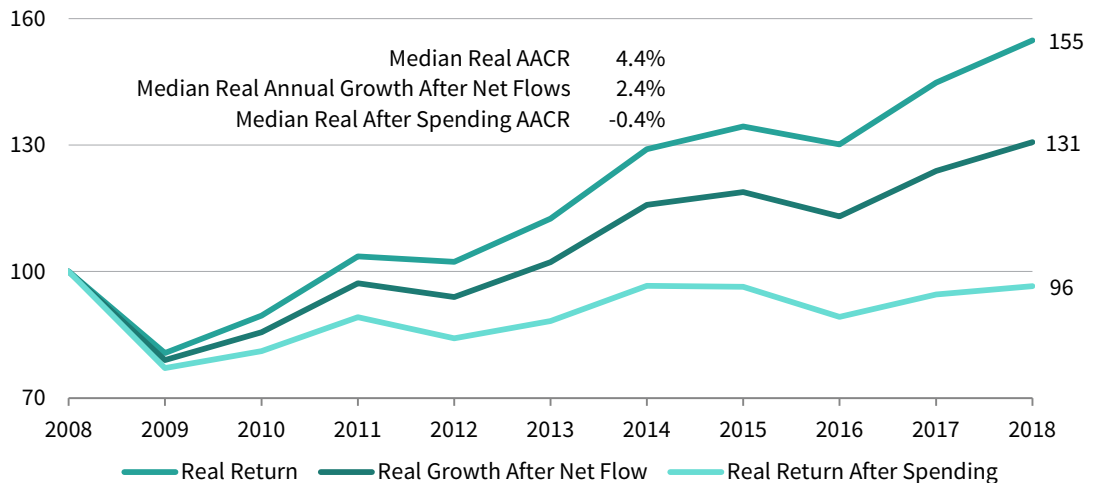
Payout from the Long-Term Investment Portfolio

NET FLOW RATE

Traditionally, endowment health has been evaluated in terms of investment performance and endowment spending or payout rate. A key objective has been to achieve real investment returns that exceed the average annual payout rate over the long term. Figure 39 is based on median data for the group of participants that provided returns, LTIP market values, and spending rates over the last decade. Using median investment performance and starting with an initial investment of \$100 in 2008, the portfolio would have grown to \$155 in real dollars by the end of fiscal year 2018. After deducting the annual spending distributions from real investment performance, the investment would have fallen to \$96, resulting in a slight erosion of purchasing power. This approach omits an important part of the picture: the LTIP is also driven by inflows that come in as gifts, and other funds designated for long-term investment.

FIGURE 39 CUMULATIVE DOLLAR GROWTH AFTER INFLATION, NET FLOWS, AND SPENDING

Years Ended June 30 • Base Year 2008 = \$100 • n = 86



Source: College and university data as reported to Cambridge Associates LLC.

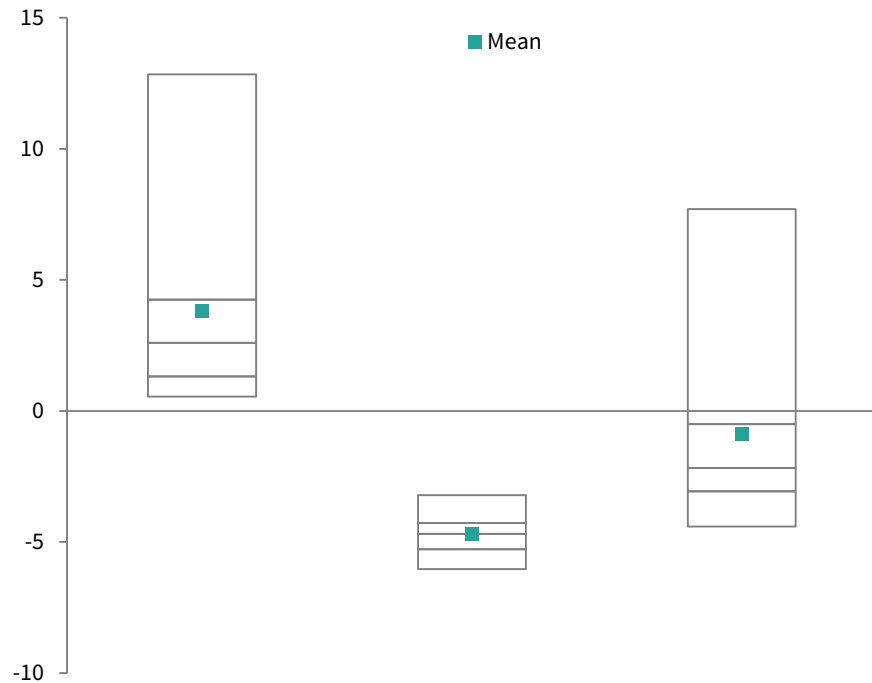
Notes: To limit the impact of outliers, median data are used for each statistic in this chart. The median real annual growth after net flows represents the actual growth in the long-term investment portfolio's market value adjusted for inflation.

The combination of the total inflows and outflows for the LTIP constitutes the net flow rate. In the same figure, the actual value of the investment, which incorporates both real investment performance and net flows, is tracked by the middle line and grew by 31% over the ten-year period. Because of the steady inflow from gifts and other additions that most institutions experienced, the actual growth in the portfolio was substantially higher than growth based on returns after spending only. Since maintaining the purchasing power of existing endowment gifts is a key objective in endowment management, the traditional return after spending statistic should not be dismissed. However, this statistic can understate the actual extent of asset growth. By incorporating real investment performance with the overall net flow rate, an institution can better evaluate the trajectory of the LTIP's role in the institution's business model.

The net flow rate is calculated as a percentage of the LTIP market value at the beginning of the fiscal year. As is typically the case, the median (-2.2%) net flow rate for participants in fiscal year 2018 was negative, meaning the amount of withdrawals from the portfolio surpassed the amount of additions for the majority of respondents (Figure 40). The median outflow rate was -4.7%, while the median inflow rate was 2.6%.

FIGURE 40 INFLOW, OUTFLOW, AND NET FLOW RATES

Fiscal Year 2018



	Inflow Rate	Outflow Rate	Net Flow Rate
5th Percentile	12.8	-3.2	7.7
25th Percentile	4.3	-4.3	-0.5
Median	2.6	-4.7	-2.2
75th Percentile	1.3	-5.3	-3.1
95th Percentile	0.6	-6.0	-4.4
Mean	3.8	-4.7	-0.9
<i>n</i>	78	78	78

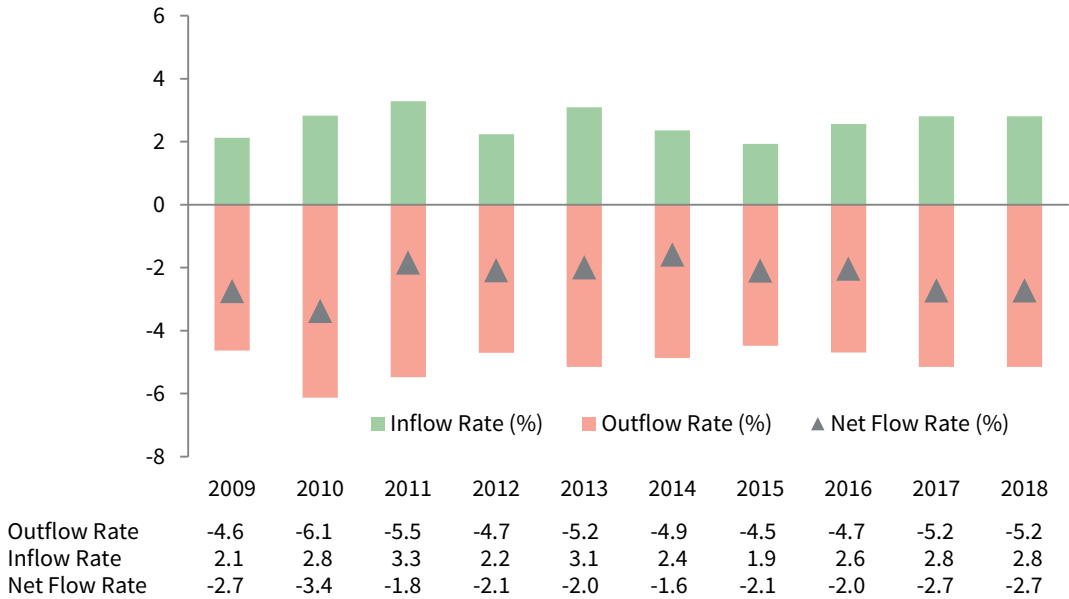
Source: College and university data as reported to Cambridge Associates LLC.

Notes: All rates are expressed as a percentage of the beginning year LTIP market value. Included in this analysis are 60 private institutions, 9 public institutions, and 9 public-affiliated foundations.

For the 29 participants that provided a detailed breakdown of flows over the last decade, the median net flow rate was negative (i.e., net outflow) for each of the ten years (Figure 41). The median net flow rate in fiscal year 2018 was tied for the second lowest of the last decade.

FIGURE 41 HISTORICAL MEDIAN NET FLOW RATE

Fiscal Years 2009–2018 • n = 29



Source: College and university data as reported to Cambridge Associates LLC.

Note: Since median data are used, the sum of the outflow and inflow rates will not equal the net flow rate.

INFLOW RATE. Endowment gifts typically represent the bulk of the inflows that an LTIP receives. On average, endowment gifts represented 70% of total inflows in fiscal year 2018 among participants. Other types of inflows can include reinvested operating surpluses, capital campaign funds, proceeds from non-portfolio asset sales, and other various types of additions. The inflow rate among participants in fiscal year 2018 varied from 12.8% at the 5th percentile to 0.6% at the 95th percentile.

OUTFLOW RATE. The vast majority of outflows consist of distributions determined by the endowment spending policy. On average, spending policy distributions represented 91% of total outflows in fiscal year 2018 among participants. Other types of outflows consist of special one-time appropriations as well as recurring annual distributions to cover administrative costs and expenses. Compared to inflow rates, the range of outflow rates among participants fell within a narrower band, from -3.2% at the 5th percentile to -6.0% at the 95th percentile.

SPENDING POLICIES

An institution's spending policy serves as a bridge that links the LTIP and the enterprise. The spending policy should be designed to balance the needs of current and future generations of stakeholders, with the goals of providing appropriate levels of support to operations and preserving, or even growing, endowment purchasing power.⁷

The majority (74%) of responding institutions continue to use a market value–based rule that dictates spending a percentage of a moving average of endowment market values (Figure 42). This rule type emphasizes purchasing power preservation by linking the spending distribution amount directly to the endowment's market value.

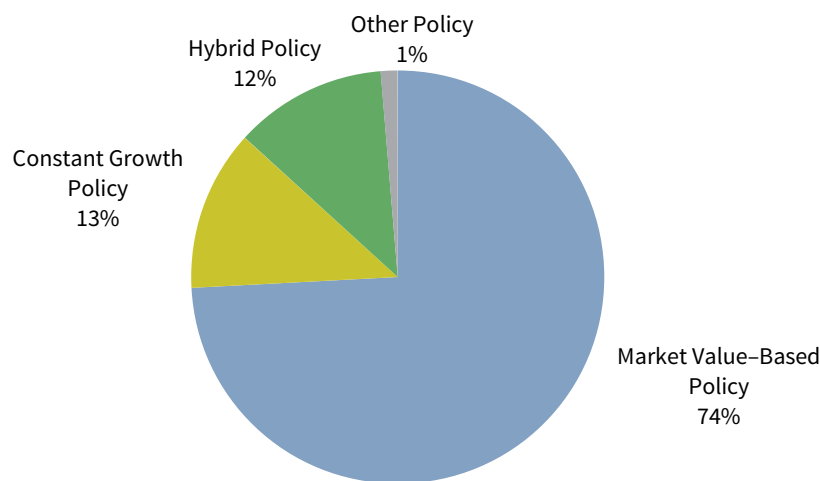
The next most commonly used spending rule type is the constant growth rule, which was cited by 13% of respondents. This rule type increases the prior year's spending amount by a measure of inflation and/or a prespecified percentage. Institutions tend to use this rule type when the endowment is a significant source of operating revenue and volatility in annual spending distributions is less tolerable. Though the strict application of a constant growth rule produces predictable spending, most institutions using this rule type impose a spending cap and floor based on a percentage of the endowment's market value, or a moving average of market values. Spending collars essentially transform the constant growth rule to a market value–based rule in times of significant endowment growth or contraction to avoid a complete disconnect between spending and the endowment market value.

The third most common spending rule type is a hybrid policy, which was cited by 12% of respondents. A hybrid spending policy blends the more predictable spending element of a constant growth policy with the asset preservation principle of a market value–based policy and allows an institution to set the appropriate mix that best meets its needs. The rule is expressed as a weighted average of a constant growth rule and a percentage-of-market-value (or average market value over a period of time) rule.

⁷ For a more in-depth discussion on this topic, please see William Prout et al., "Spending Policy Practices," Cambridge Associates Research Report, 2018.

FIGURE 42 SPENDING RULE TYPES

Fiscal Year 2018 • n = 151

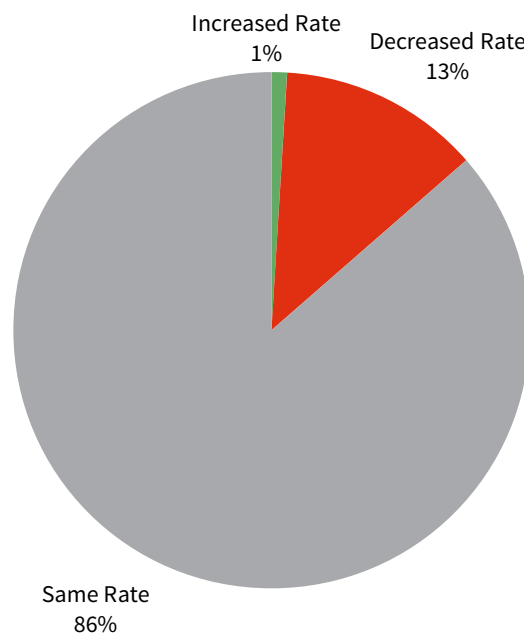


Source: College and university data as reported to Cambridge Associates LLC.

SPENDING POLICY CHANGES. Spending policy, like investment policy, should reflect a long-term approach to investing and distributions. Since long-term expectations are incorporated, most institutions do not make major changes to their spending policy on a regular basis. Of the 145 institutions that provided a spending policy for the last two years, just two switched to a different spending rule type in fiscal year 2018. Similarly when compared to five years ago, just 5% of respondents (6 of 110) used a spending rule type in fiscal year 2018 that was different than the type of rule used in fiscal year 2013.

For institutions using a market value–based rule, a primary component of the spending calculation is the target spending rate. To preserve the purchasing power of an endowment, the target spending rate must align with the long-term real investment return. The low return environment has spurred institutions to reevaluate their spending policies and the rate of spending from the portfolio. In fiscal year 2018, 13% of institutions that use a market value–based rule lowered the target rate in their spending policy (Figure 43).

FIGURE 43 CHANGES IN TARGET SPENDING RATES FOR MARKET VALUE–BASED SPENDING POLICIES
2018 vs 2017 • n = 103



Source: College and university data as reported to Cambridge Associates LLC.

Notes: Market value–based spending policies base spending on a prespecified percentage of a moving average of market values. This analysis reflects data for the institutions using a market value–based spending policy that also provided the target rate used in their spending calculation for fiscal year 2017. If a range was provided, the target spending rate was calculated using the midpoint of the range.

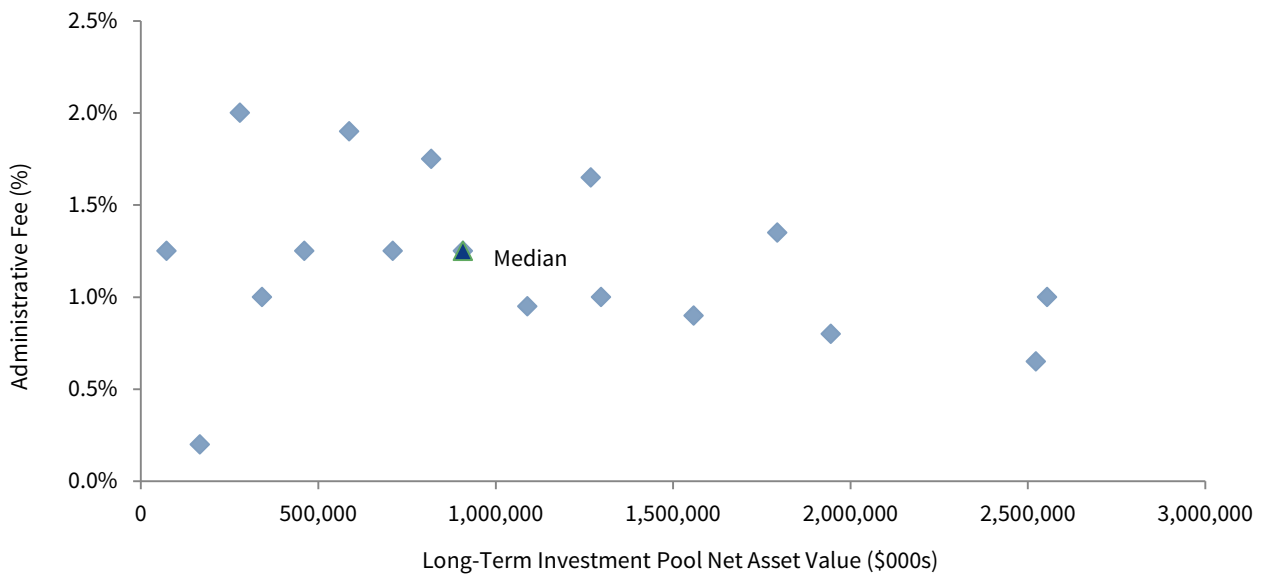
ADMINISTRATIVE FEES FOR UNIVERSITY-AFFILIATED FOUNDATIONS

An affiliated foundation is a private entity that raises funds and can manage investment assets for a public university. For their services, affiliated foundations often charge an administrative fee to the endowment that goes beyond the spending draw to the institution. The administrative fee is used to cover the foundation's operating expenses. The range of fees can be attributed to what services the foundation provides and the assets under management. Our data show that as asset size increases, the total administrative fee charged against assets tends to decrease (Figure 44). The median administrative fee rate for the 17 affiliated foundations that provided data was 1.25% of assets under management.

FIGURE 44 ADMINISTRATIVE FEES OF UNIVERSITY-AFFILIATED FOUNDATIONS

Fiscal Year 2018 • n = 17

University-affiliated foundations charge an administrative fee back to the endowment to cover the annual operating expenses of the foundation. Operating expenses can include costs associated with fundraising for the university, endowment oversight costs, and other institutional advancement and revenue development costs.



Source: College and university data as reported to Cambridge Associates LLC.

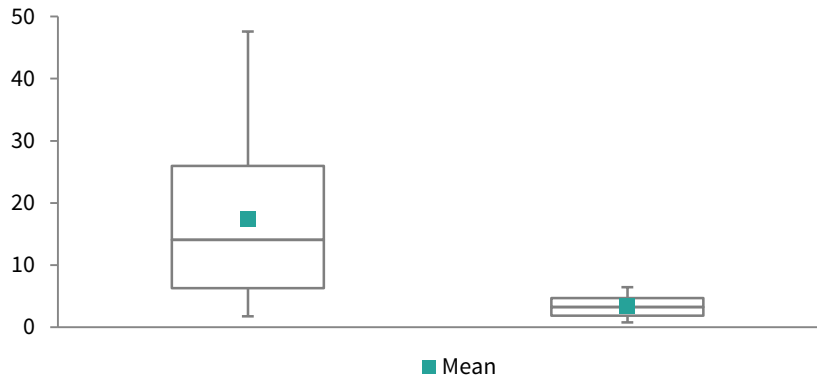
Note: The median marker is displayed where the median administrative fee for fiscal year 2018 intersects with the median LTIP market value as of June 30, 2018.

LTIP SUPPORT OF OPERATIONS

Colleges and universities draw the bulk of their revenue from operations (instruction, research, student housing, food services, patient care, etc.). However, since few break even on operations, institutions rely on endowment and gifts for additional support. Public institutions, which receive substantial financial support from state appropriations, generally rely less on endowment payout to fund the operating budget compared to private institutions. For the 15 public institutions that provided data, support from the LTIP as a percentage of the total operating expenses averaged just 3.4% in fiscal year 2018 (Figure 45). Average support from the LTIP for private institutions was 17.5%.

FIGURE 45 LTIP SUPPORT OF OPERATIONS

Fiscal Year 2018



	Private Institutions	Public Institutions
5th Percentile	47.6	6.5
25th Percentile	25.9	4.7
Median	14.1	3.2
75th Percentile	6.3	1.9
95th Percentile	1.8	0.8
Mean	17.5	3.4
n	76	15

Source: College and university data as reported to Cambridge Associates LLC.

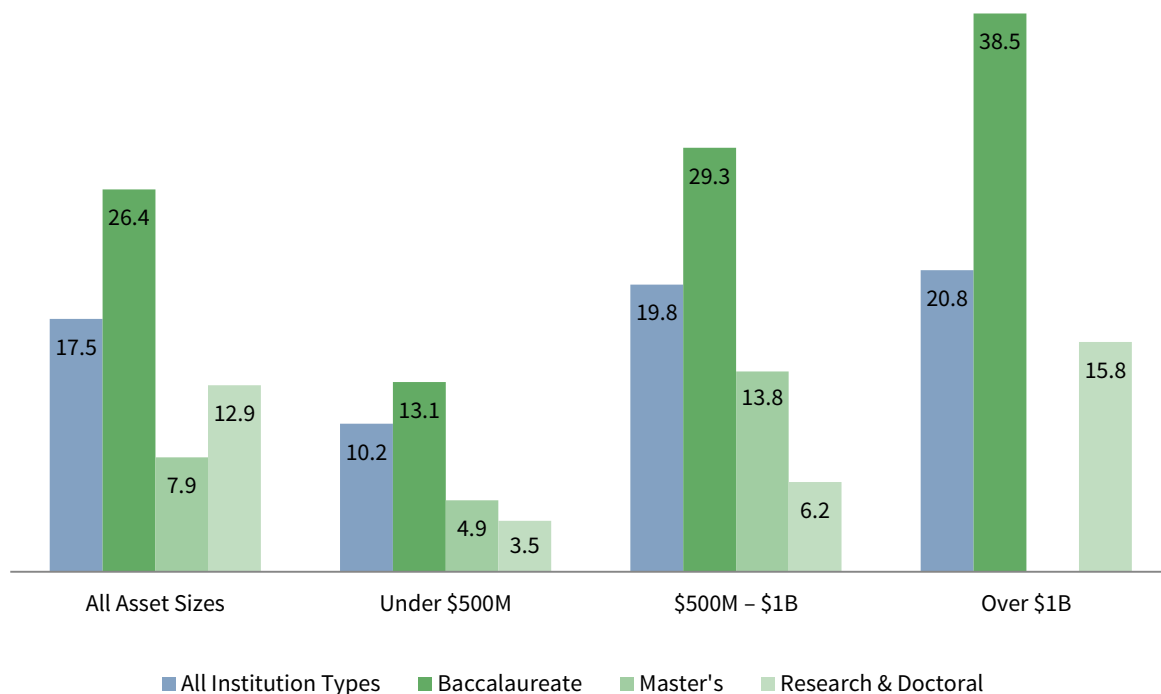
Note: LTIP support of operations is the proportion of the operating budget that is funded from LTIP payout.

The range of LTIP support varies considerably among private institutions. Institutions with smaller asset sizes tend to have a lower ratio of LTIP support than those with larger asset sizes (Figure 46). Support from the LTIP as a percentage of operating expenses averaged 10.2% for institutions with asset sizes under \$500 million. In contrast, average LTIP reliance was 19.8% for institutions with assets between \$500 million and \$1 billion and 20.8% for those with assets over \$1 billion.

LTIP reliance also varies among private colleges and universities depending on the type of institution. The core operating structure of baccalaureate colleges is based mostly on student revenues, reflecting a mission that is focused almost exclusively on providing instruction and other services to students. These types of colleges tend to have the greatest reliance on support from the LTIP to subsidize the annual operating budget. In fiscal year 2018, the average level of LTIP support was 26.4% for private baccalaureate colleges. Research and doctoral universities have more complex and diversified enterprises and revenue streams. They have business models that are focused on a variety of activities, including education, research, and hospital services in some cases. This group of universities reported a lower average level of LTIP support (12.9%). The average reliance upon the LTIP was just 7.9% for master’s colleges and universities; the vast majority of these institutions (9 of 12) have asset sizes less than \$500 million.

FIGURE 46 LTIP SUPPORT OF OPERATIONS: PRIVATE COLLEGE AND UNIVERSITIES

Fiscal Year 2018 • LTIP Support as a Percentage of Operating Budget (%) • n = 76



Source: College and university data as reported to Cambridge Associates LLC.

Notes: LTIP support of operations is the proportion of the operating budget that is funded from LTIP payout. Colleges and universities are grouped by institution type based on the classification categories set forth by the Carnegie Foundation for the Advancement of Teaching.

ENDOWMENT PAYOUT COVERAGE RATIOS

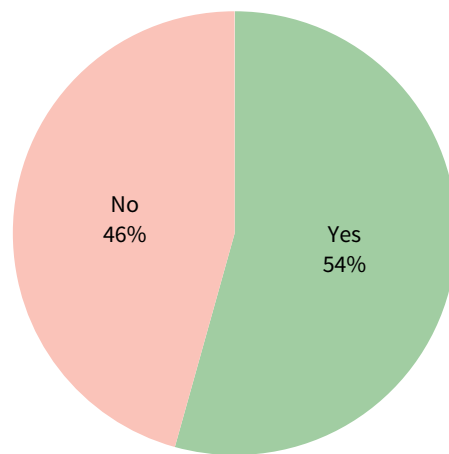
As discussed earlier in this section, the endowment spending policy distribution accounts for the vast majority of the annual outflows from the LTIP. Since most spending rules incorporate some measure of the endowment’s market value, institutions can be susceptible to decreases in endowment spending following periods of market decline. Similarly, institutions may prefer to avoid liquidating certain assets at depressed prices during market bottoms. In such instances, institutions may seek to replace a portion of endowment spending or supplement it by drawing funds from other liquidity sources. Following is a discussion of two coverage metrics that compare the market value of operating funds and the amount available under lines of credit to endowment spending. While credit lines and operating funds can be used for many different purposes by an institution, the coverage ratios we show here provide hypothetical markers for colleges and universities to evaluate their endowment payout in relation to these sources of liquidity.

OPERATING FUNDS. More than half of the institutions that provided data on their operating funds (50 of 92) invest a portion of those funds in the LTIP. The median percentage of operating funds invested in the LTIP was 36.4%, but this percentage varies considerably across respondents (Figure 47).

FIGURE 47 OPERATING FUNDS

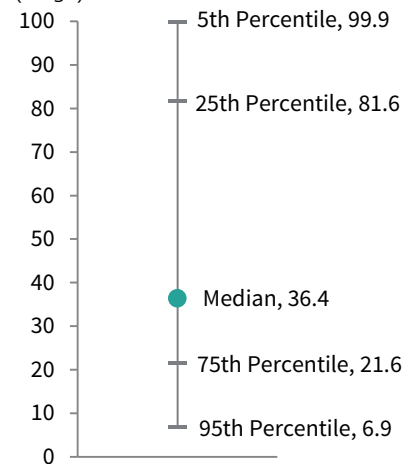
Fiscal Year 2018

Operating Funds Invested in the LTIP (n = 92)



Percentage (%) of Operating Funds Invested in the LTIP

(n = 50)



Source: College and university data as reported to Cambridge Associates LLC.

There were 71 respondents that reported data on their operating funds and endowment spending policy distribution. The coverage ratio displayed in Figure 48 considers the amount of operating funds outside of the LTIP in relation to the endowment spending policy distribution. The median ratio among all respondents was 2.3. At this level, there would be enough operating funds outside the LTIP to cover two full years of endowment spending.

For institutions that rely little on the LTIP to support the operating budget, spending distributions are often lower relative to other aspects of the business model. Indeed, the ratio of operating funds outside the LTIP to the endowment spending policy distribution is generally higher among colleges and universities in this study have lower LTIP support. Institutions that have low LTIP support (5% or less) reported a median ratio of 8.9. Respondents with a moderate reliance on LTIP support reported a median ratio of 2.2, while those with a high reliance on LTIP support reported a median of 1.0.

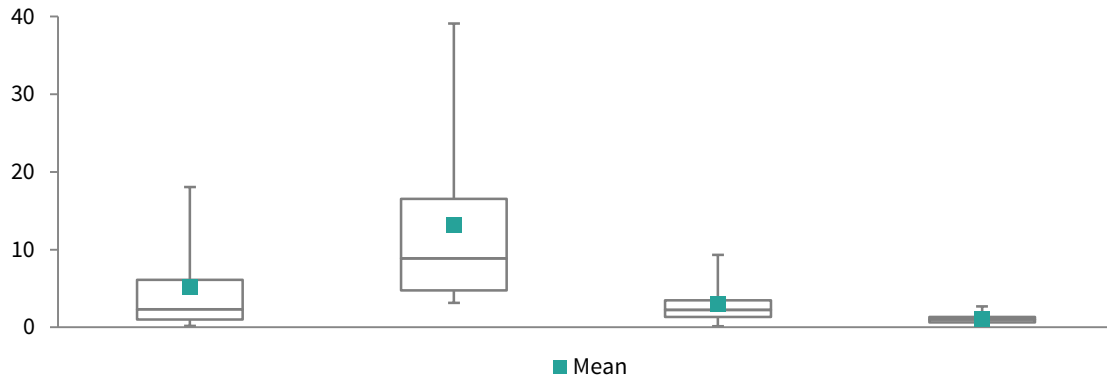
LINES OF CREDIT. There were 55 respondents that reported data on their line(s) of credit and endowment spending policy distribution. Among these institutions, the median ratio of available line of credit to endowment spending policy distribution was 0.8 for fiscal year 2018. A ratio under 1.0 means that there are not enough funds available to be drawn from the credit lines to replace the entire annual endowment spending policy distribution.

Similar to the coverage ratio that focused on operating funds, this ratio also tends to be higher for institutions that have lower levels of LTIP support. Institutions that rely the least on the LTIP to support the operating budget reported a median ratio of 1.8. Respondents with a moderate reliance on LTIP support reported a median ratio of 0.7, while those with a high reliance reported a similar median ratio (0.8).

FIGURE 48 ENDOWMENT PAYOUT COVERAGE RATIOS

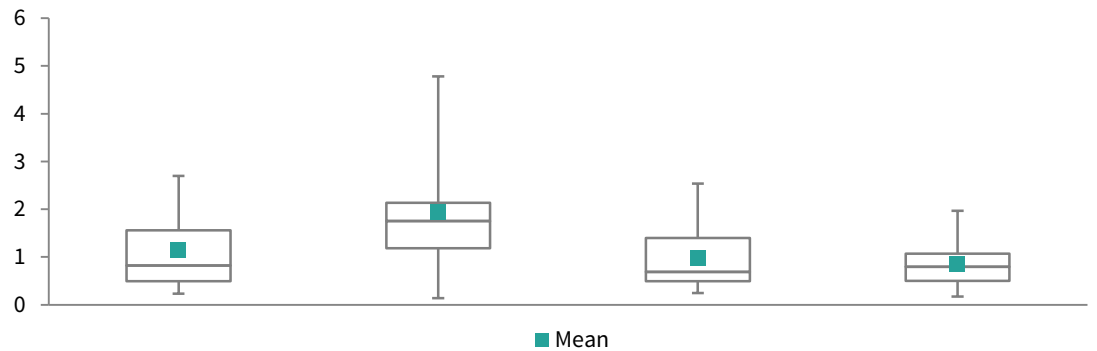
As of June 30, 2018

Ratio of Operating Funds Outside LTIP to Endowment Spending Policy Distribution



	All Institutions	Low LTIP Support	Moderate LTIP Support	High LTIP Support
5th Percentile	18.1	39.1	9.3	2.7
25th Percentile	6.1	16.5	3.5	1.3
Median	2.3	8.9	2.2	1.0
75th Percentile	1.0	4.8	1.3	0.6
95th Percentile	0.2	3.1	0.2	0.2
Mean	5.2	13.2	2.9	1.1
<i>n</i>	71	19	33	19

Ratio of Available Line of Credit to Endowment Spending Policy Distribution



	All Institutions	Low LTIP Support	Moderate LTIP Support	High LTIP Support
5th Percentile	2.7	4.8	2.5	2.0
25th Percentile	1.6	2.1	1.4	1.1
Median	0.8	1.8	0.7	0.8
75th Percentile	0.5	1.2	0.5	0.5
95th Percentile	0.2	0.1	0.2	0.2
Mean	1.2	1.9	1.0	0.9
<i>n</i>	55	12	27	16

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Subgroups in this analysis are based on the proportion of the operating budget that is funded from LTIP payout. The subgroups are broken out as follows: low LTIP support, less than 5%; moderate LTIP support, 5% to 20%; and high LTIP support, greater than 20%. Available line of credit is calculated as the total amount of all credit lines net of any amounts drawn against those lines as of June 30, 2018.

Investment Office Staffing and Governance

What does staffing look like at small, medium, and large endowments? How do endowments utilize outside advisors and consultants? Who governs the investment office? Who has decision rights for asset allocation or manager selection?

In this section, we provide a snapshot of endowment management in 2018 and highlight relevant trends over the past year. The majority of this year's participants (109 of 160) provided data for this section of the survey including 48 endowments with assets over \$1 billion, 31 that fall between \$500 million and \$1 billion, and 30 under \$500 million. Some institutions chose not to respond to every question within this section or the question was not applicable to them. The universe size for each analysis is noted in the subsequent figures.

INVESTMENT OFFICE STAFFING AND OUTSIDE RESOURCES

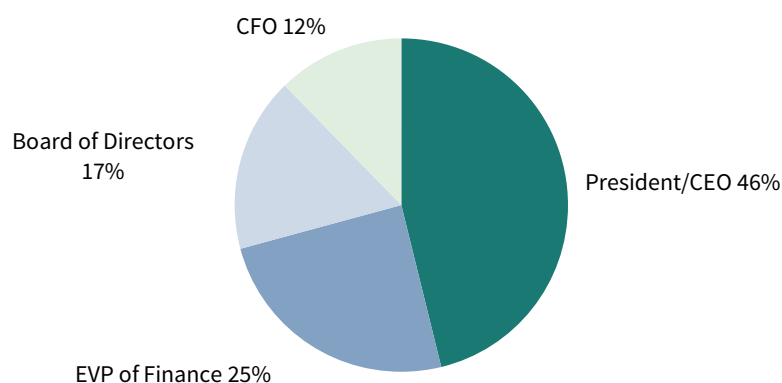
The primary mission of an investment office is to assume day-to-day responsibility for the endowment and other investment assets. This mission will be defined by the set of functions that internal investment office staff will carry out or oversee. Since both the investment philosophy and the demands on the office will vary among institutions, each office will have its own unique profile. Therefore, when evaluating the current structure or anticipated growth of an investment office, it is important to consider not only the size of the asset base, but also the portfolio complexity (whether handled by internal or external resources), the secondary demands on the staff (i.e., treasury functions), the use of outside consultants or advisors, and the level of involvement by boards and committees. Both the number of internal professional investment staff and the depth of specialization required to successfully manage the asset base will fluctuate based on these characteristics.

CHIEF INVESTMENT OFFICER. The presence of a dedicated Chief Investment Officer (CIO) correlates with asset size and is most common at larger endowments. Nearly all (94%) of the respondents with endowments greater than \$1 billion have a full-time CIO, while 58% of respondents with assets between \$500 million and \$1 billion indicated they had a CIO in place. The percentage is drastically lower for endowments less than \$500 million, where only 7% of respondents have a CIO.

Organizations with smaller asset sizes rely more heavily on outside advisors or a chief financial officer to oversee investment assets. In these cases, the chief financial officer might work closely with external investment advisors to develop an investment strategy and monitor investment managers. It is also common place for endowments of this size to outsource some or the entire portfolio to an OCIO. Where there is a CIO, it is most common for the position to report directly to the CEO or President of the institution (Figure 49).

FIGURE 49 CHIEF INVESTMENT OFFICER REPORTING LINES

Fiscal Year 2018 • n = 65



Source: College and university data as reported to Cambridge Associates LLC.

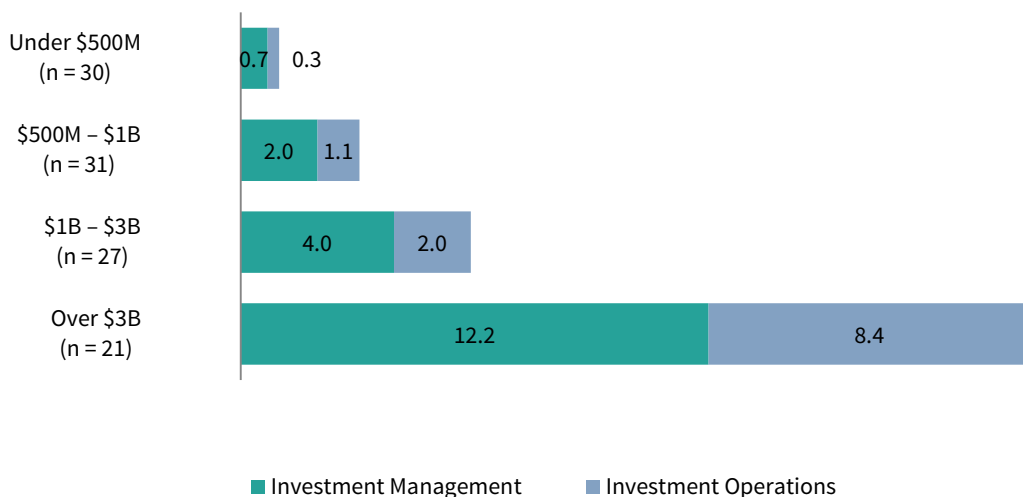
STAFFING LEVELS. Investment office personnel are typically divided into investment management and investment operations. Investment management staff is responsible for implementing the investment policy of the committee and can include: a chief investment officer, risk officer(s), investment director(s), investment officer(s), portfolio manager(s), and analyst(s). Investment operations staff is responsible for the management of custodian and broker relationships, transaction processing, capital call management, endowment accounting, performance measurement, and in some cases conducting operational due diligence on investment managers.

Our survey shows that investment office staffing typically correlate with asset size. This is perhaps not surprising as larger portfolios tend to invest with more fund managers and favor a more active investment approach, which can require more resources. On average, endowments that oversee more than \$3 billion in assets employ a total of 20.6 FTE split between investment management and operations (Figure 50). It should be noted that the over \$3 billion cohort includes 11 endowments that manage assets in excess of \$6 billion and have a total staff size of 29.1 FTE on average, which is more than double the average of 11.3 FTE for endowments with assets between \$3 billion and \$6 billion. A similar observation can be made for the \$1 billion to \$3 billion cohort. Endowments toward the upper-end of the size band have one to two more FTEs than the average of 6.0 for the total group.

Compared to 2017, staffing levels remained unchanged for a constant universe across most size bands. The exception was the \$3 billion plus group, which saw an average increase of 1.3 FTEs dedicated to investment operations (Figure 51). Substantial allocations to alternative assets and increased regulations have driven the need for more investment operations support.

FIGURE 50 AVERAGE STAFFING LEVELS

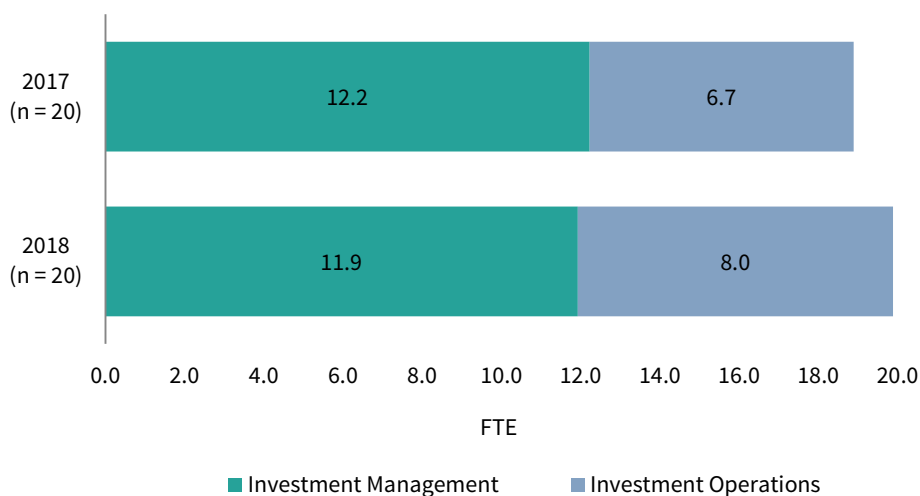
Fiscal Year 2018 • Number of Full-Time Equivalents (FTEs)



Source: College and university data as reported to Cambridge Associates LLC.

FIGURE 51 YEAR-TO-YEAR AVERAGE STAFFING LEVELS: C&Us OVER \$3 BILLION

Fiscal Years 2017-2018 • Number of Full-Time Equivalents (FTEs)



Source: College and university data as reported to Cambridge Associates LLC.

Personnel consisted of a mixture of senior-, mid-, and junior-level positions. Senior investment professionals typically carry the title of Investment Director or Managing Director and have more than ten years of professional experience. Mid-level professionals can hold the titles of Investment Officer or Associate and bring five to ten years of experience. Junior-level positions are usually recent graduates or those with a few years of experience. Junior positions usually carry the title of Investment Analyst or Associate. Figure 52 provides the average FTEs by asset size and position levels for investment management and operations positions.

FIGURE 52 AVERAGE INVESTMENT STAFF BY FUNCTION

Fiscal Year 2018 • Number of Full-Time Equivalents (FTEs)

	Investment Management			Investment Operations		
	Senior	Mid	Junior	Senior	Mid	Junior
Over \$3B	4.4	3.7	4.5	1.3	2.2	3.7
<i>n</i>	21	16	18	15	21	18
\$1B – \$3B	1.9	2.3	1.2	0.9	1.0	1.3
<i>n</i>	21	7	22	12	16	19
\$500M – \$1B	1.1	1.1	1.0	0.6	0.9	0.7
<i>n</i>	17	13	10	5	16	10
Under \$500M	0.6	1.0	0.7	0.2	0.3	0.7
<i>n</i>	7	4	10	1	6	7

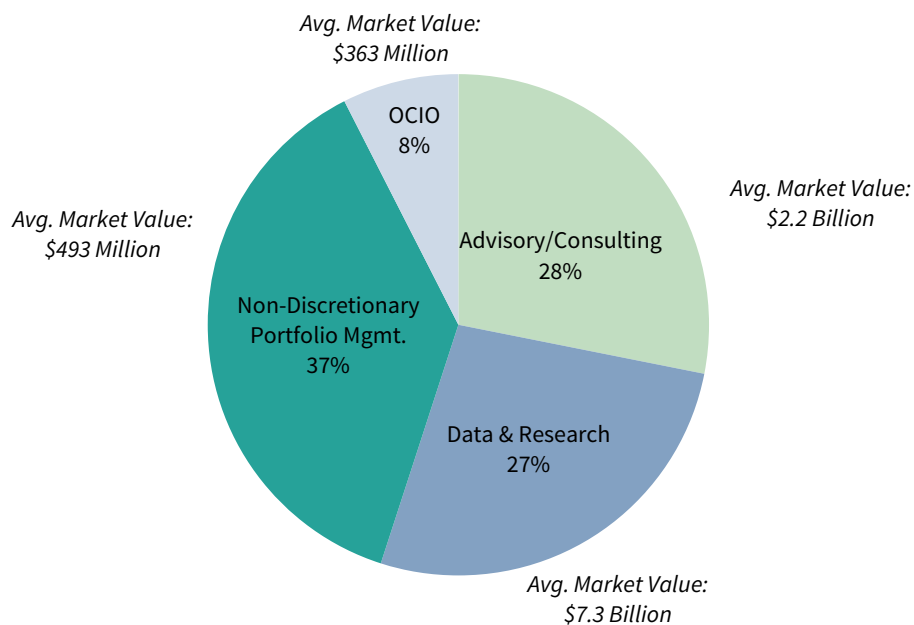
Source: College and university data as reported to Cambridge Associates LLC.

Notes: Office leadership positions (CFO/CIO), IT, and Legal support are not included in the analysis. Only institutions with personnel at the specific staffing level are included in each category. Therefore, the sum of the personnel across each category will not equal the total investment office FTEs.

RELIANCE ON OUTSIDE ADVISORS AND CONSULTANTS. Endowments engage external advisors and consultants in varying degrees and across a wide variety of functions. Based on survey responses and our understanding of how each survey participant engages with Cambridge Associates, Figure 53 broadly illustrates how the group of 160 study participants works with outside advisors or consultants. Endowments, with assets under \$1 billion rely more heavily on external advisors to manage or help manage their investment portfolios, while larger endowments will seek outside support in the form of research, data, or asset class specialization.

FIGURE 53 USE OF EXTERNAL ADVISORS AND CONSULTANTS

Fiscal Year 2018 • n = 160



Source: College and university data as reported to Cambridge Associates LLC and CA's service contract records.

8% of study participants use CA for discretionary portfolio management services. Also known as OCIO, this management model allows institutions to fully delegate portfolio management decision making to an outside firm. These firms are accountable for portfolio strategy, implementation, day-to-day management, and operations. Managing the portfolio within agreed upon policy guidelines, the outsourced investment team makes manager selection, manager termination, tactical asset allocation, and portfolio rebalancing decisions.

37% of institutions in our study use advisors for non-discretionary portfolio management services for the total endowment. These institutions work with an outside team of investment professionals who provide day-to-day oversight of their portfolios, while retaining final decision making on portfolio investments. This service model provides resources and expertise to contribute to portfolio management alongside an institution's investment team.

27% of participants use outside support for research, manager, peer, and benchmarking data. These endowments tend to be larger and have built their own internal investment teams to manage their portfolios. The average market value of endowments utilizing consultants in this fashion is \$7.3 billion.

The remaining 28% of survey participants use external resources for a range of services beyond total portfolio management, including asset allocation reviews, manager searches, alternative assets management, ESG/MRI consulting, and performance reporting.

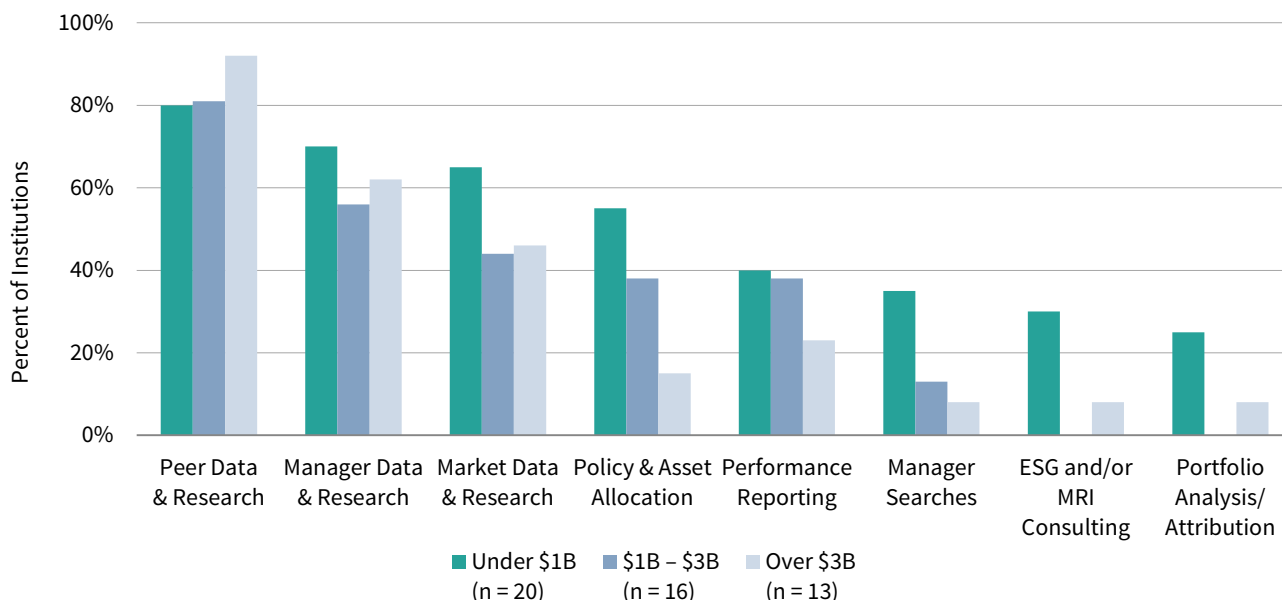
Figure 54 examines the range of services other than portfolio management that are most commonly utilized by institutions of different sizes. Based on survey responses, smaller endowments rely more heavily on external advisors for policy and asset allocation, performance reporting, and manager searches than the largest endowments. Reliance on advisors for peer data & research and market data & research was more consistent across asset sizes (Figure 54).

GOVERNANCE

Good governance is one key factor to a successful investment program. To create the conditions for good governance, endowments should assess whether they have in place the appropriate model for portfolio oversight and management, are upholding their fiduciary responsibilities, and are learning about peer best practices in committee structure, process, and policies.

FIGURE 54 USE OF EXTERNAL ADVISORS AND CONSULTANTS: TYPES OF SERVICES

Fiscal Year 2018 • n = 49 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Analysis excludes institutions that use advisors for OCIO and non-discretionary portfolio management.

GOVERNING BODY/OVERSIGHT COMMITTEE. Among all respondents, an investment committee of the board most often has oversight over the investment office and/or outside advisors (79% of respondents). In much smaller numbers, other governing bodies cited by respondents were a finance committee of the board (3%), the board of trustees or directors (10%), and management company/independent board of trustees/directors (8%) (Figure 55).

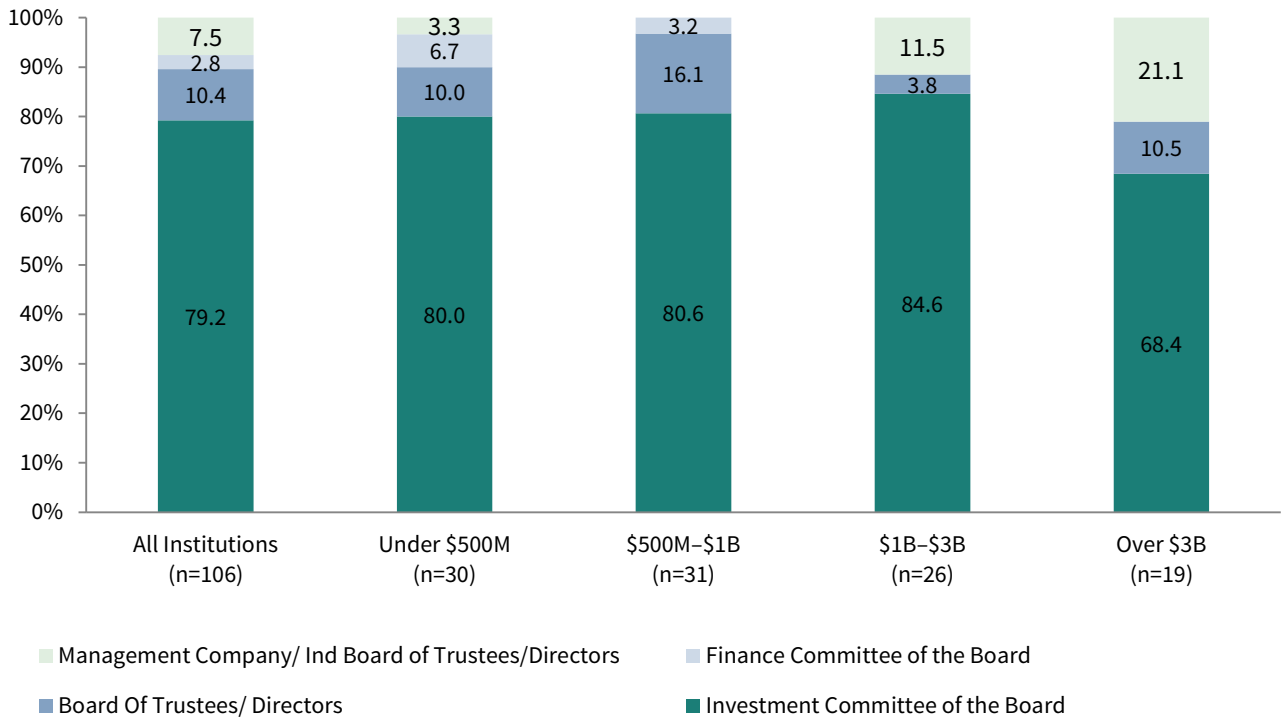
Smaller endowments (under \$500 million) reported more instances of investments being overseen by a Finance Committee of the Board. Some of the largest university endowments have established legally separate investment management companies, which have their own board of directors. In these cases the management company’s board typically has some overlap with that of the university. Among the over \$3 billion cohort, 21% have a management company board in place.

DECISION-MAKING RESPONSIBILITY. To help quantify the dynamic between the governing body (hereafter referred to as simply investment committee) and those managing the endowment (internal investment office or outside advisor), we asked who possessed decision-making responsibility for four integral investment functions: asset allocation policy development, portfolio rebalancing, manager selection, and manager termination. The resulting data show certain trends in the balance of authority between investment committees, staff, and advisors.

For endowments over \$1 billion, the majority of asset allocation policy is developed by committees acting on staff recommendations (Figure 56). Institutions under \$1 billion depend far more on the recommendations of outside advisors or investment

FIGURE 55 GOVERNING BODY OF OVERSIGHT COMMITTEE BY ORGANIZATION TYPE

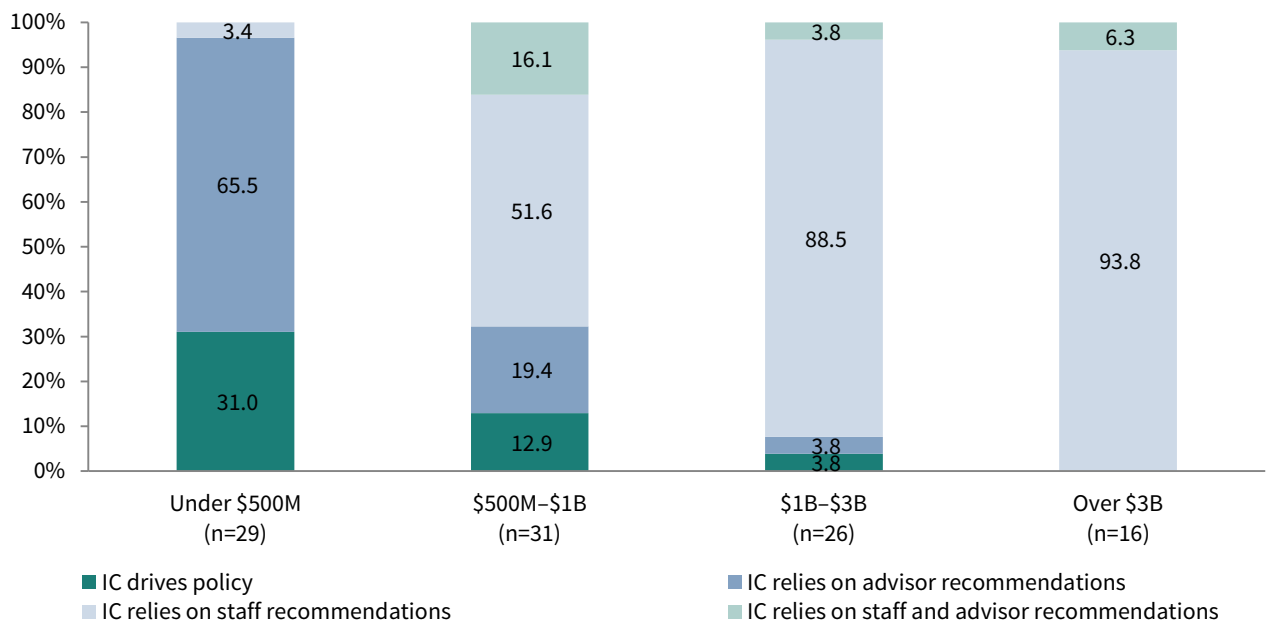
Fiscal Year 2018 • n = 106



Source: College and university data as reported to Cambridge Associates LLC.

FIGURE 56 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: ASSET ALLOCATION POLICY DEVELOPMENT

Fiscal Year 2018 • n=102 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Investment Committee (IC) is shorthand for governing body.

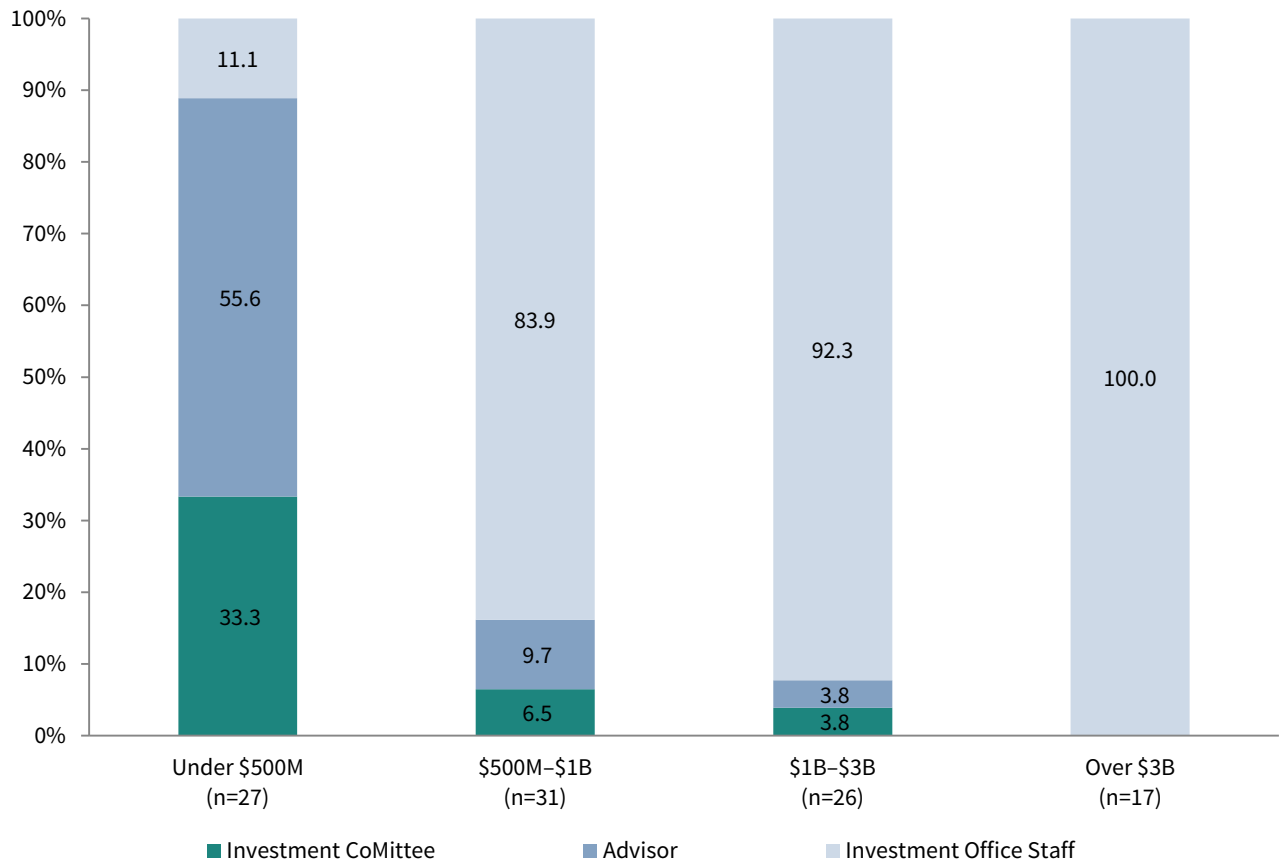
committees driving policy autonomously. The investment committee’s role in portfolio rebalancing is steadily diminished as endowment size rises (Figure 57), with total staff discretion on rebalancing decisions most common for institutions over \$1 billion.

The process of manager selection and termination also involves committees, advisors, and staff, but with different degrees of discretion (Figure 58). Advisors play a significant role in both selection and termination of investment managers at institutions with AUM under \$500 million, with 17.9% delegating full discretion to an OCIO to make hiring and firing decisions. Staff recommendations are increasingly relied upon from \$500 million to \$3 billion and staff discretion (with and without guidelines) accounts for a majority of decision-making at endowments over \$3 billion AUM.

Among the investment committees involved in manager selection, the predominant role is to approve managers, but not interview them.

FIGURE 57 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: PORTFOLIO REBALANCING

Fiscal Year 2018 • n =101 • Percent of Institutions (%)



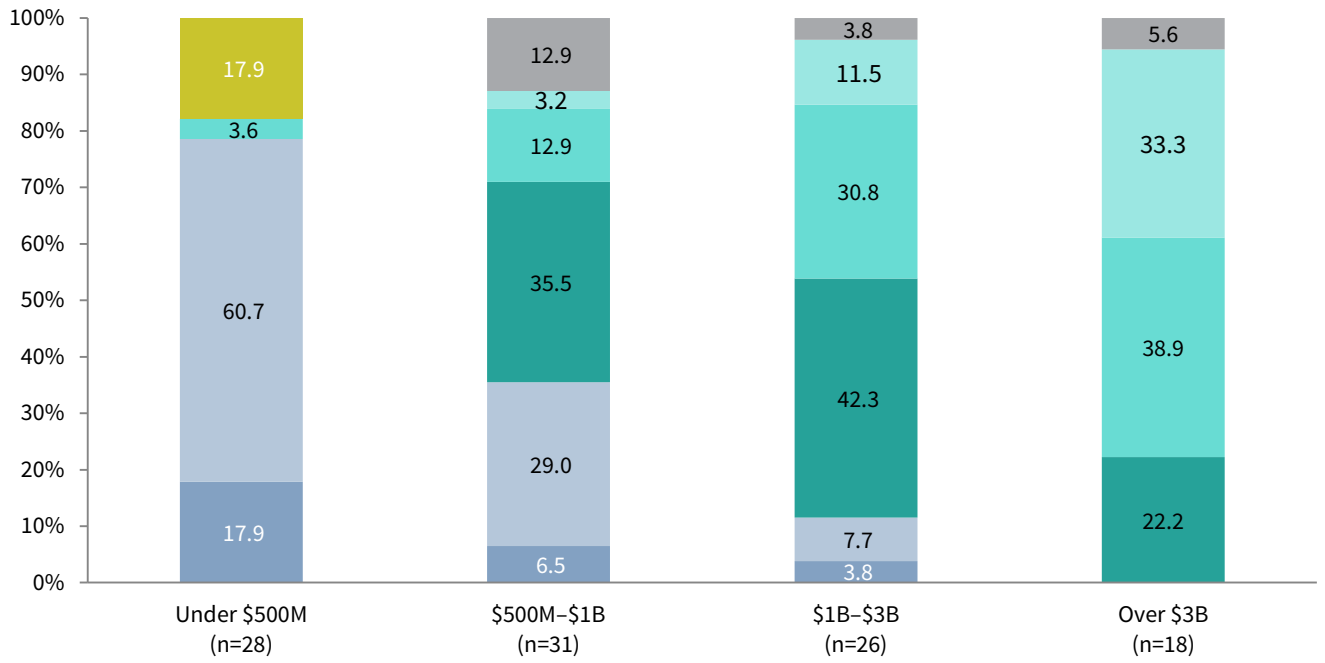
Source: College and university data as reported to Cambridge Associates LLC.

Note: Investment CoMittee (IC) is shorthand for governing body.

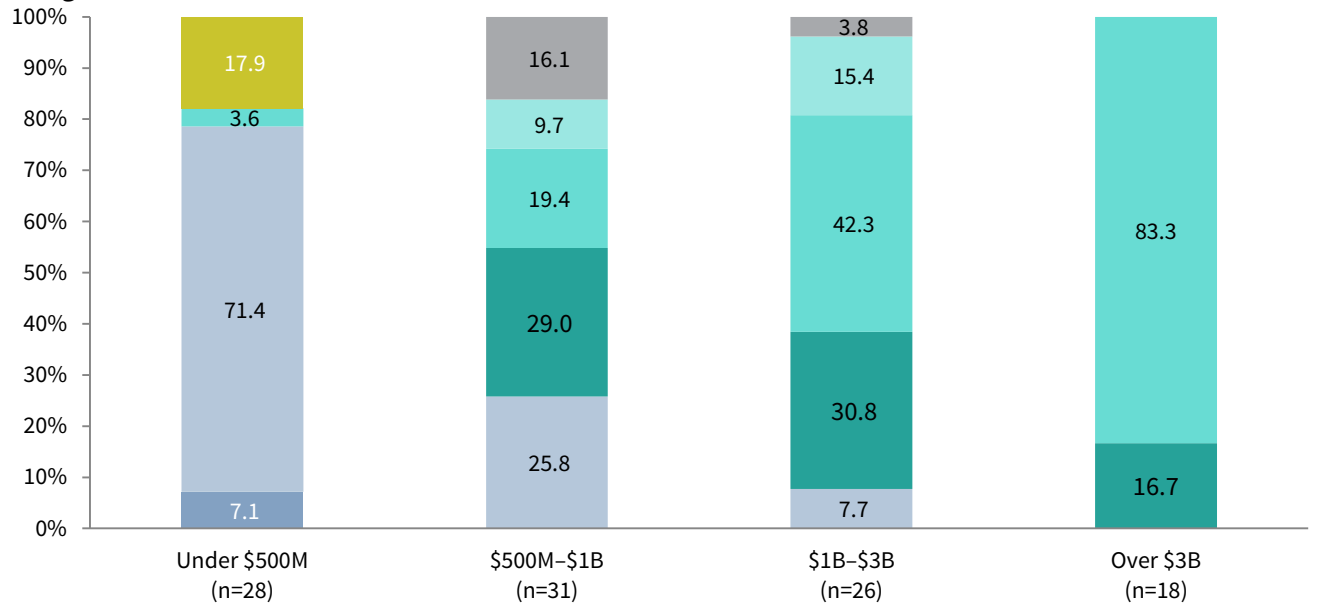
FIGURE 58 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: MANAGER SELECTION AND TERMINATION

Fiscal Year 2018 • n=103 • Percent(%)

Manager Selection



Manager Termination



- IC interviews and approves
- Staff recommendation and IC approves
- Staff discretion with guidelines
- Other
- Advisor recommendation and IC approves
- Staff has full discretion
- OCIO has full discretion

Source: College and university data as reported to Cambridge Associates LLC.

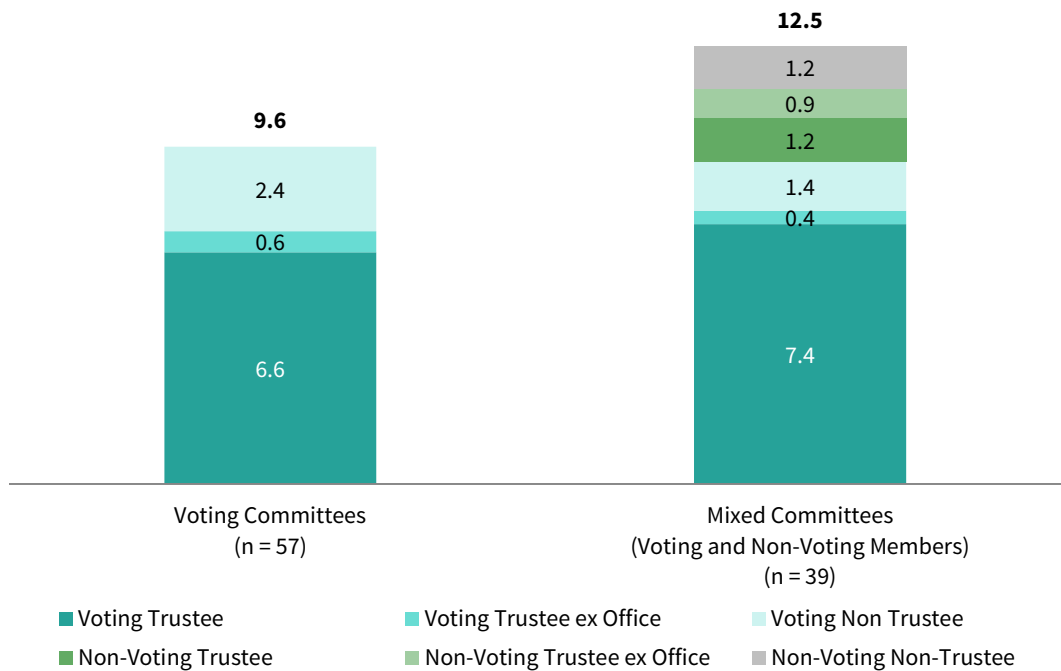
Notes: Investment CoMittee (IC) is shorthand for governing body. "Other" includes IC approval based on staff and advisor recommendations.

INVESTMENT COMMITTEE COMPOSITION. Two types of committees emerged from our survey data. We found that just over half of investment committees (57 of 96) are fully composed of voting members, while the remaining investment committees also include non-voting members. While mandatory voting encourages accountability, there can be good reasons to include nonvoting members. Organizations should weigh the benefit of these advisory members against the prospects of an oversized committee.

The average size of voting committees is 9.6 members, which on average consist of 6.6 trustees, 2.4 non-trustees, and 0.6 ex officio members. Examples of ex officio committee members include the president of the college or chairman of the board or of another committee, whose investment committee membership is included in the official duties of the position. Committees including non-voting members averaged 12.5 people (Figure 59).

Investment committee members can bring a diverse set of experiences to assist in overseeing institutional investment assets. At least some committee members should have professional, institutional investment experience— not just experience managing their own money—and if the organization lacks sufficient trustees with such qualifications, many times the committee includes non-trustee members with investment expertise to fulfill this role.

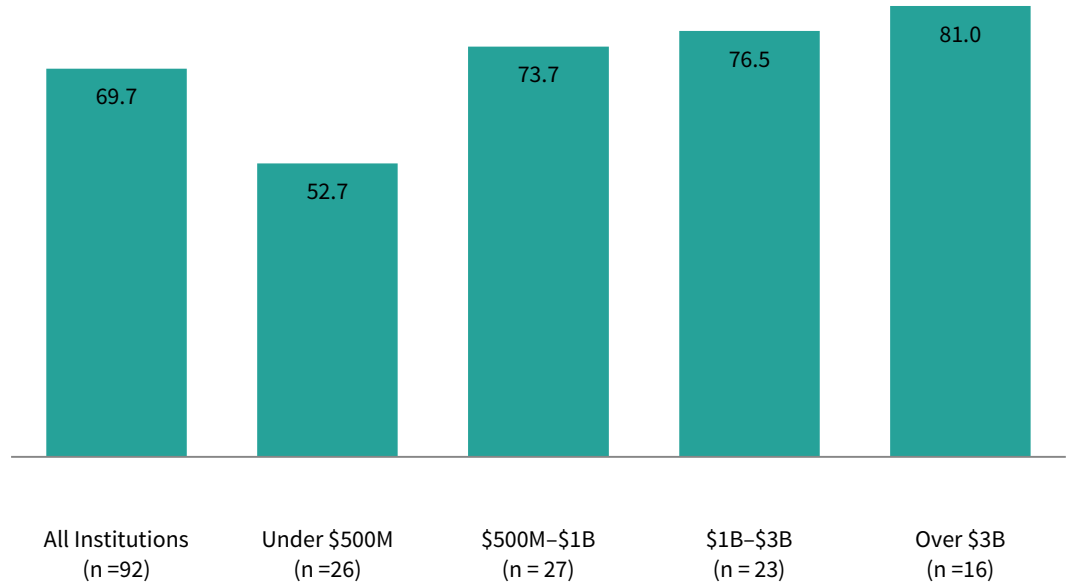
FIGURE 59 PROFILE OF INVESTMENT COMMITTEE MEMBERS
Fiscal Year 2018 • n = 96



Source: College and university data as reported to Cambridge Associates LLC.
Note: Investment Committee is shorthand for governing body.

On average, respondents indicated that 70% of their committee members have investment experience. This composition does change when viewed by asset size. Organizations with assets under \$500 million reported an average of 53% of committee membership having professional investment experience. Each of the asset size groups over \$500 million had an average of 74% or higher (Figure 60).

FIGURE 60 PERCENT OF INVESTMENT COMMITTEE WHO ARE INVESTMENT PROFESSIONALS
Fiscal Year 2018 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

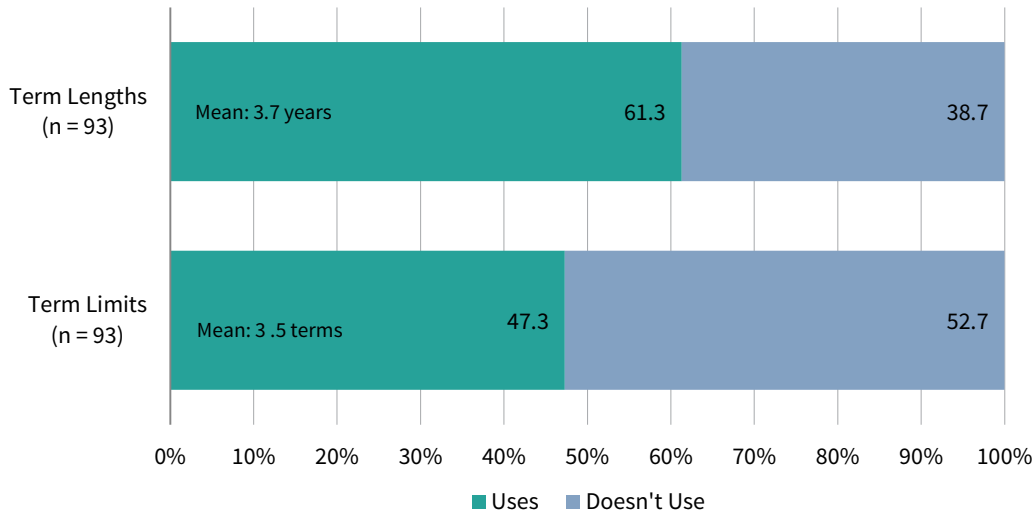
COMMITTEE TERM LENGTH AND LIMITS. Setting guidelines for terms can help manage member turnover and mitigate committee stagnation. Responses regarding term length and limit policy indicated that term length guidelines are generally more common than term limits: for committee members, term lengths (an average of 3.7 years) were specified by 61% of endowments, while term limits (an average of 3.5 terms) were mandated by a smaller percentage of 47% of institutions (Figure 61). Term length and limit policies applied similarly to committee chairmanship, with a slightly higher percentage (53%) indicating having term limits in place for the Chair. The lack of policies around term limits and lengths at some endowments could suggest that these institutions value the stability of a long-standing committee and view turnover as disruptive to long-term investment policy.

INVESTMENT COMMITTEE MEETINGS. Our survey responses show that the majority of endowments (73%) hold quarterly meetings. Few institutions hold meetings on a more or less frequent schedule, but ad hoc conference calls are a frequently cited occurrence. Regular attendance of investment committee members is critical to proper oversight. Participants indicated that average attendance was strong, at 83%.

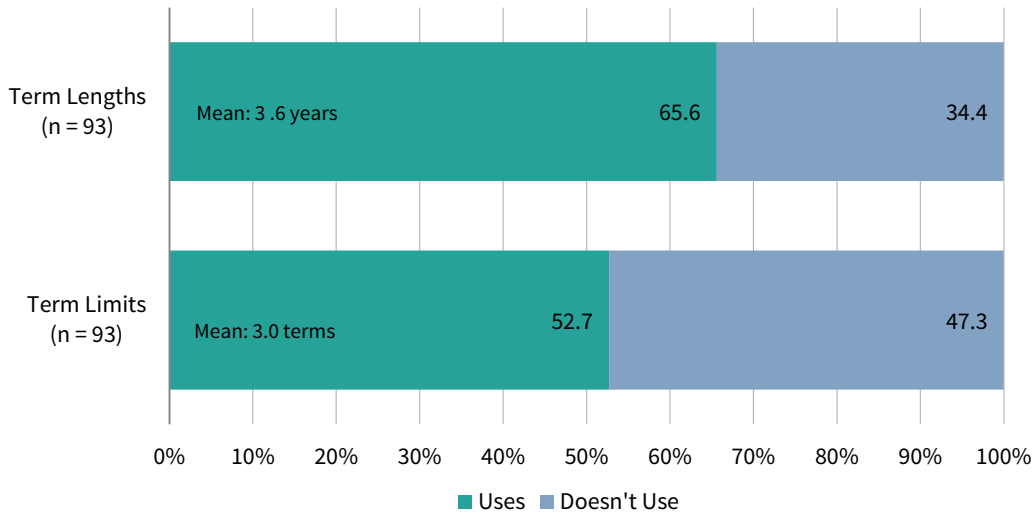
FIGURE 61 INVESTMENT COMMITTEE TERM LENGTHS AND LIMITS

Fiscal Year 2018

Investment Committee Member



Investment Committee Chair



Source: College and university data as reported to Cambridge Associates LLC.

Note: Investment Committee is shorthand for governing body.

REIMBURSEMENT AND CONFLICT OF INTEREST POLICY. Only 24% of respondents provide committee members with expense reimbursement, which generally includes travel-related and other out-of-pocket expenses. A smaller proportion of participants (2%) offer their committee members some sort of compensation other than expense reimbursement. This compensation most often comes in the form of charitable gifts and honorariums.

Nearly all respondents have a conflict of interest policy for investment committee members (98%). These policies require disclosure (49%), recusal (22%), or both disclosure and recusal (29%). Policies may differ by asset class, with institutions requiring disclosure for long-only equity conflicts and recusal for private equity conflicts, for example. A slightly smaller amount of institutions (88%) have a conflict of interest policy in place for investment staff. The majority (67%) of policies center on disclosure only, while 26% require disclosure and recusal. ■

Notes on the Data

DATA COLLECTION AND RESULTS

This report includes data for 160 colleges and universities. Nineteen are public institutions, 27 are foundations affiliated with public institutions, and 114 are private institutions. All participants provided investment pool data as of June 30, 2018. The notation of n denotes the number of institutions included in each analysis.

The 160 participants in this study reported long-term investment portfolio (LTIP) assets as of June 30, 2018, totaling \$445 billion. The LTIP size of participants ranged from \$40.3 million to \$43.4 billion. The mean LTIP size was \$2.8 billion and the median was \$783.6 million. Sixty-five colleges and universities reported LTIP assets greater than \$1 billion, and they controlled 91% of the aggregate LTIP assets.

CALCULATION OF THE SHARPE RATIO

The Sharpe ratio shows how much return above the risk-free rate (T-bills) the investor has earned per unit of risk (defined as standard deviation of returns). The higher the Sharpe ratio, the more the investor has been compensated for each unit of risk taken. The ratio is a measure of reward relative to total volatility. The formula is:

$$\frac{R_p - R_f}{S_p} = \text{Sharpe Ratio}$$

Where:

- R_p is the arithmetic average of composite quarterly returns,
- R_f is the arithmetic average of T-bill (risk-free) quarterly returns, and
- S_p is the quarterly standard deviation of composite quarterly returns.

BLENDED PORTFOLIO BENCHMARKS

Throughout the report, the 70/30 simple portfolio benchmarks are calculated assuming rebalancing occurs on the final day of each quarter. ■

PARTICIPANTS

The University of Akron Foundation
University of Alaska Foundation
Allegheny College
American Coll of Greece & American Univ of Greece
American University
Amherst College
University of Arkansas Foundation Inc.
College of The Atlantic
Baylor University
Bentley University
Berkeley Endowment Management Company
Bethune-Cookman University
Boston College
Boston University
Bowdoin College
Brown University
Bryn Mawr College
University of California
California Institute of Technology
Carleton College
Carnegie Mellon University
Case Western Reserve University
Centenary College of Louisiana
Chapman University
The University of Chicago
University of Cincinnati
Claremont McKenna College
Clarkson University
Clemson University Foundation
Colby College
Colgate University
Columbia University
Connecticut College
Cooper Union for the Advancement of Science & Art
Cornell University
College For Creative Studies
Dartmouth College
Davidson College
University of Delaware
Denison University
Duke University
Duquesne University
Emerson College
Emory & Henry College
Emory University
Florida International University Foundation, Inc.
Florida State University Foundation Inc.
University of Florida Investment Corporation
Georgetown University
Georgia Tech Foundation Inc.
Gettysburg College
Goucher College
Grand Valley State University
Hampton University
Harvard Management Company, Inc.
Haverford College
University of Hawaii Foundation
Hollins University
College of the Holy Cross
Hope College
Houston Baptist University
University of Houston System
Howard University
University of Idaho Foundation, Inc.
University of Illinois Foundation
Indiana University Foundation
Iowa State University Foundation
Johns Hopkins University
Kalamazoo College
KU Endowment
Lafayette College
Lebanese American University
Lehigh University
Lewis and Clark College
Louisiana State University Foundation
University of Louisville
Lycoming College
Macalester College
University of Maine Foundation
Maryland Institute College of Art
Mercy College
University of Michigan
Michigan State University
MIT Investment Management Company
Mount Holyoke College
Mount St. Mary's University
National University
University of Nebraska Foundation
Nevada System of Higher Education
New England Conservatory
New York University
Northeastern University
Northwestern University
Norwich University
University of Notre Dame
Oberlin College
Occidental College
Ohio State University
Ohio Wesleyan University
University of Oklahoma Foundation
Oklahoma State University Foundation
Pace University
University of the Pacific
University of Pennsylvania
Pennsylvania State University
Pepperdine University
University of Pittsburgh
Pomona College
Princeton University
The Principia Corporation
Providence College
Purdue Research Foundation
Randolph-Macon College
Reed College
Rensselaer Polytechnic Institute
University of Rhode Island Foundation
The Rockefeller University
Rice University
University of Rochester
University of San Diego
San Francisco State University Foundation
Santa Clara University
Scripps College
Seattle University
Simmons College
Soka University of America
University of Southern California
Southern Methodist University
Spelman College
Stanford University
St. Lawrence University
University of St. Thomas
Swarthmore College
Texas Lutheran University

The University of Texas Investment Management Co.
University of Toronto c/o UTAM (returns in CAD)
Trinity University
Tulane University
The UCLA Foundation
UNC Management Company, Inc.
UNCG Endowment Partners, LP
Union Theological Seminary
Vanderbilt University
University of Vermont & State Agricultural College
Villanova University
University of Virginia
Virginia Tech Foundation
Washburn University Foundation
University of Washington
Washington and Jefferson College
Washington College
Washington University in St. Louis
Webb Institute
Wellesley College
Wesleyan University
Western New England University
College of William & Mary Foundation
Williams College
Yale University
Yeshiva University

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