Annual Analysis of College and University Investment Pool Returns: Fiscal Year 2016

CAMBRIDGE C|A ASSOCIATES

Annual Analysis of College and University Investment Pool Returns: Fiscal Year 2016

William Prout | Grant Steele
Elizabeth Cheever

CAMBRIDGE C|A ASSOCIATES

Annual Analysis of College and University Investment Pool Returns

This report summarizes portfolio returns, asset allocation, investment manager structures, and net flow data for 161 colleges and universities for the fiscal year ended June 30, 2016. Twenty are public institutions, 27 are foundations affiliated with public institutions, and 114 are private institutions. The 161 participants in this study reported long-term investment portfolio (LTIP) assets as of June 30, 2016, totaling $370 billion. The LTIP size of participants ranged from $45.3 million to $39.0 billion. The mean LTIP size was $2.3 billion and the median was $662 million. Sixty-one colleges and universities reported LTIP assets greater than $1 billion, and they controlled 90% of the aggregate LTIP assets.

This year's report takes a closer look at additional portfolio attributes and investor trends relevant to colleges and universities. Included are exhibits on asset class returns, performance attribution, risk analytics, and policy portfolio benchmarking. We also highlight private investment programs and their impact on portfolio liquidity. Our section on investment management structures reviews the use of external managers by asset class and details portfolio implementation techniques. The report's final section includes exhibits covering net flow rates and the LTIP's support of operations.

C | A

Investment Portfolio Returns

Returns in Fiscal Year 2016

Fiscal year 2016 was a down year for most colleges and university endowments as few asset classes offered strong investment performance for the year ended June 30, 2016. Broad-based market indexes for US equities were just slightly positive, while those for global ex US equities were down by double-digits. Private equities did not generate the robust performance that they produced over the last few years, and most hedge funds reported negative returns.

Real assets were mixed, with real estate producing strong returns but natural resources–related investments again posting negative performance. Bonds were a bright spot, but represented only a small portion of the portfolio for most participants.

The mean nominal total return earned by participating institutions was -2.5% in fiscal year 2016 (Figure 1). With inflation (as measured by the Consumer Price Index) at 1.0% for the year, the mean real return for all respondents is adjusted to -3.5%. There was some disparity in trailing

Figure 1. Summary of Investment Portfolio Returns
Years Ended June 30, 2016 • Percent (%)

Nominal Total Returns

	Average Annual Compound Nominal Return			
	1 Year	5 Years	10 Years	20 Years
Responding Institutions				
High	3.4	10.3	8.5	12.6
Low	-7.2	2.2	2.5	5.3
Mean	-2.5	5.5	5.2	7.8
Median	-2.7	5.3	5.1	7.4
n	*161*	*160*	*152*	*124*
Mean After Spending	-6.7	1.1	0.7	3.3
n	*133*	*115*	*98*	*85*
Benchmarks				
70% Russell 3000® / 30% BBG Barc Govt/Credit	3.6	9.6	7.1	7.7
70% MSCI ACWI / 30% BBG Barc Govt/Credit	-0.5	5.3	5.0	6.1

Real Total Returns

	Average Annual Compound Real Return			
	1 Year	5 Years	10 Years	20 Years
Responding Institutions				
High	2.4	8.9	6.6	10.2
Low	-8.1	0.9	0.7	3.1
Mean	-3.5	4.1	3.4	5.5
Median	-3.6	3.9	3.3	5.1
n	*161*	*160*	*152*	*124*
Mean After Spending	-7.6	-0.2	-1.0	1.1
n	*133*	*115*	*98*	*85*
Benchmarks				
70% Russell 3000® / 30% BBG Barc Govt/Credit	2.6	8.1	5.3	5.4
70% MSCI ACWI / 30% BBG Barc Govt/Credit	-1.5	3.9	3.2	3.9

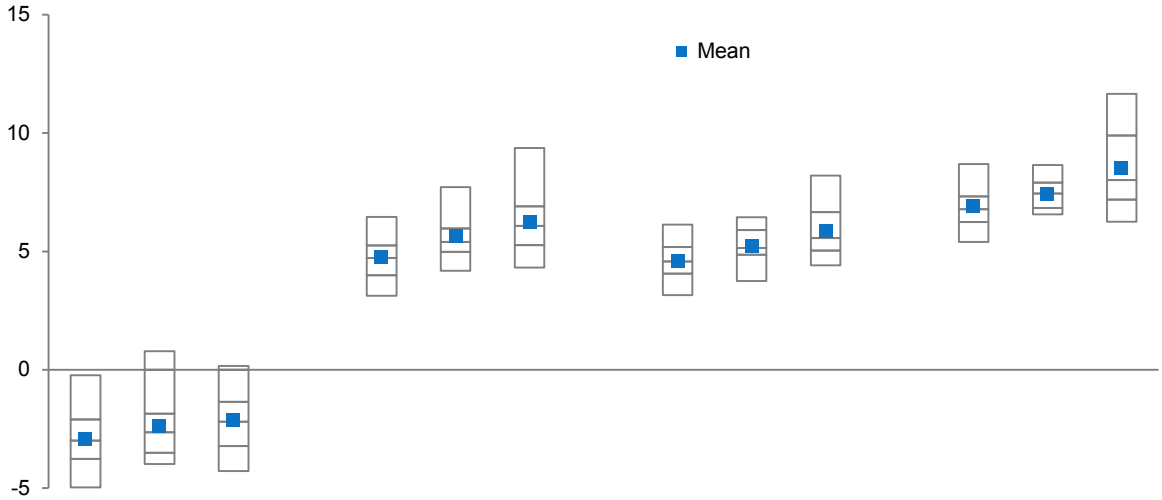
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., Frank Russell Company, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.
Notes: Real returns are adjusted for inflation as measured by the Consumer Price Index. Total returns for the MSCI ACWI are gross of dividend taxes prior to January 1, 2001, and net of dividend taxes from that date to the present.

one-year returns when the participant group is broken out into three broad asset size groups. Participants with assets over $1 billion reported the highest average nominal return (-2.1%) (Figure 2). Institutions with assets between $500 million and $1 billion reported an average return of -2.4%, followed by those with assets under $500 million (-2.9%). Throughout this section, we will explore the factors that contributed to differences in investment performance among institutions.

Figure 3 displays the range of participant returns across marketable asset classes for fiscal year 2016, while Figure 4 shows the same information for private investment asset classes. The marketable asset class returns are reported as time-weighted returns while the private investment data are horizon internal rates of return (IRR).[1] The charts that follow in this section provide fiscal year 2016 median performance for the participant group across these asset classes alongside returns for relevant indexes (all index returns are in USD terms).

[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.

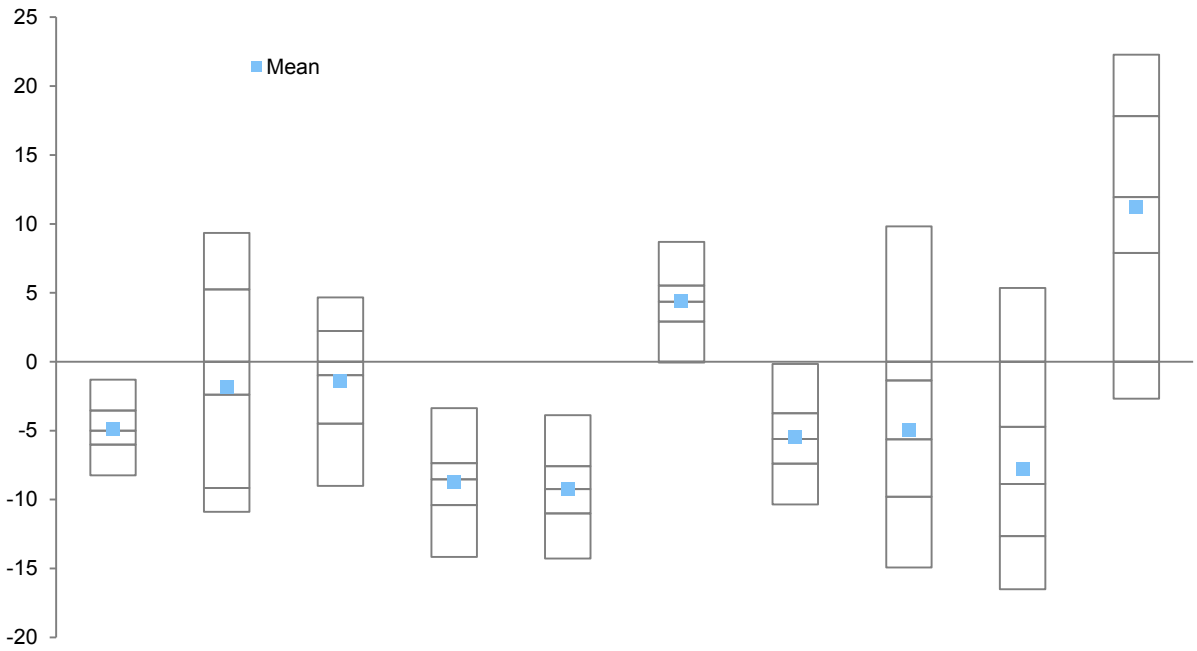
Figure 2. Summary of Long-Term Investment Portfolio Return Percentiles by Asset Size
Years Ended June 30, 2016 • Percent (%)



	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 Percentile	-0.2	0.8	0.2	6.5	7.7	9.4	6.1	6.4	8.2	8.7	8.6	11.7
25th Percentile	-2.1	-1.9	-1.4	5.2	6.0	6.9	5.2	5.9	6.7	7.3	7.9	9.9
Median	-3.0	-2.6	-2.2	4.7	5.4	6.1	4.6	5.1	5.6	6.8	7.5	8.0
75th Percentile	-3.8	-3.5	-3.2	4.0	5.0	5.3	4.1	4.9	5.0	6.2	6.8	7.2
95th Percentile	-5.0	-4.0	-4.3	3.1	4.2	4.3	3.1	3.8	4.4	5.4	6.6	6.3
Mean	-2.9	-2.4	-2.1	4.7	5.6	6.2	4.6	5.2	5.9	6.9	7.4	8.5
n	*66*	*34*	*61*	*65*	*34*	*61*	*60*	*31*	*61*	*38*	*30*	*56*

Source: College and university data as reported to Cambridge Associates LLC.
Note: Five-, ten-, and 20-year returns are annualized.

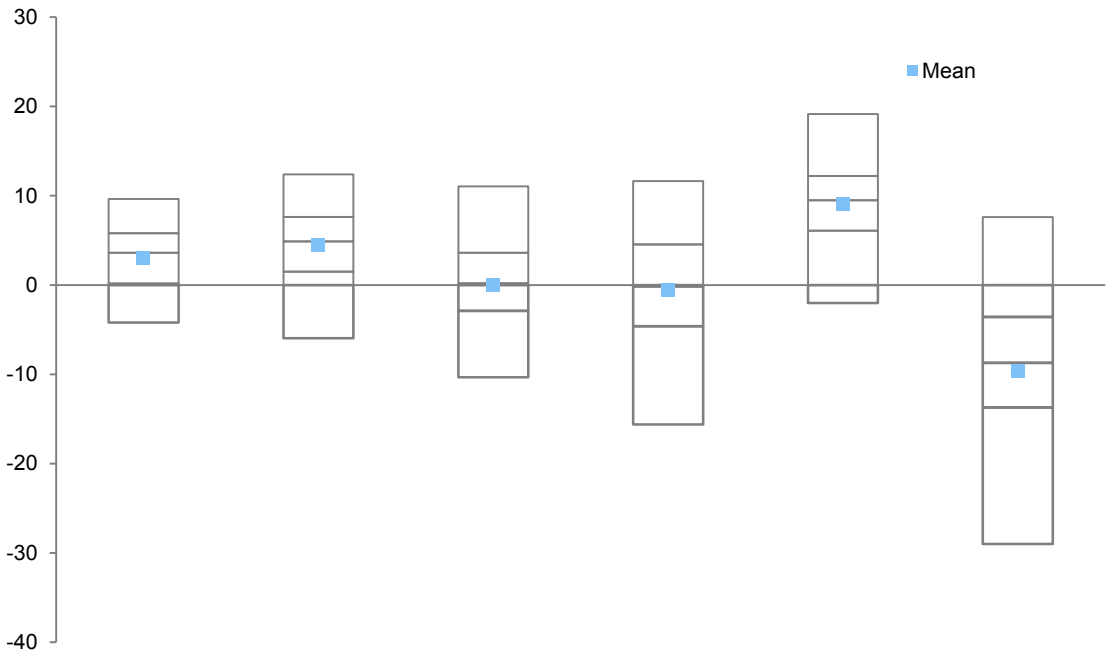
Figure 3. Dispersion of Participants' Asset Class Returns: Marketable Investments
Trailing One-Year as of June 30, 2016



	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	-1.3	6.9	3.7	-3.4	-3.9	8.7	-0.2	9.8	5.4	22.3
25th Percentile	-3.5	2.9	1.3	-7.4	-7.6	5.5	-3.7	-1.4	-4.7	17.8
Median	-5.0	-2.4	-1.0	-8.5	-9.2	4.3	-5.6	-5.6	-8.9	11.9
75th Percentile	-6.0	-6.8	-3.5	-10.4	-11.0	2.9	-7.4	-9.8	-12.7	7.9
95th Percentile	-8.2	-8.5	-8.0	-14.2	-14.3	-0.1	-10.4	-14.9	-16.5	-2.7
Mean	-4.9	-1.8	-1.4	-8.8	-9.2	4.4	-5.5	-5.0	-7.8	11.2
n	*125*	*64*	*127*	*123*	*125*	*128*	*128*	*96*	*101*	*29*
Median by Asset Size										
Under $500mm	-4.3	2.1	-0.1	-8.6	-9.1	4.8	-6.3	-6.3	-8.7	11.9
n	*60*	*27*	*61*	*59*	*60*	*59*	*57*	*57*	*57*	*12*
$500mm to $1bn	-5.1	-4.2	-1.7	-8.4	-8.1	3.9	-5.4	-5.6	-8.9	12.3
n	*26*	*15*	*28*	*28*	*28*	*29*	*30*	*20*	*20*	*9*
Over $1bn	-5.4	-3.2	-3.2	-8.5	-9.6	3.8	-3.9	-4.9	-8.9	11.4
n	*39*	*22*	*38*	*36*	*37*	*40*	*41*	*19*	*24*	*8*

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.

Figure 4. Dispersion of Participants' Asset Class Returns: Private Investments
Trailing One-Year as of June 30, 2016



	Private Equity[1]	Non-Venture Private Equity[2]	Venture Capital	Private Real Assets[3]	Private Real Estate	Private Natural Resources
5th Percentile	9.6	12.4	11.0	11.6	19.2	7.6
25th Percentile	5.8	7.6	3.6	4.5	12.2	-3.6
Median	3.6	4.9	0.2	-0.2	9.5	-8.7
75th Percentile	0.2	1.5	-2.9	-4.6	6.1	-13.7
95th Percentile	-4.2	-6.0	-9.0	-15.6	-2.0	-29.0
Mean	3.0	4.5	-0.1	-0.6	9.0	-9.6
n	*111*	*107*	*103*	*95*	*98*	*100*
Median by Asset Size						
Under $500mm	2.8	3.0	0.5	-0.3	9.5	-7.1
n	*49*	*49*	*45*	*44*	*34*	*40*
$500mm to $1bn	4.3	5.0	0.2	1.5	11.3	-7.6
n	*25*	*22*	*21*	*23*	*24*	*24*
Over $1bn	4.3	6.4	0.2	-0.3	9.4	-10.2
n	*37*	*36*	*37*	*28*	*40*	*36*

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.

Public Equity. Public equities represent a significant portion of the portfolio for most institutions in this study.[2] Consequently, the performance of global equity markets is usually a key indicator of which direction endowment returns are trending. The median total public equity return among participants for fiscal year 2016 was -5.0% (Figure 5).

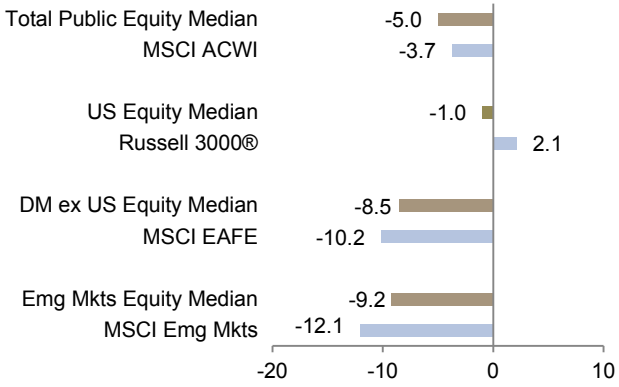
US equities, represented by the Russell 3000® Index, returned just 2.1% (Figure 5) in fiscal year 2016. Institutions in this study generally fared poorly versus this benchmark, with the median participant return at -1.0%. Smaller portfolios reported the highest median US equity return (-0.1%) while larger portfolios reported the lowest (-3.2%). Performance among all institutions varied from 3.7% at the 5th percentile to -8.0% at the 95th percentile (Figure 3).

For global ex US equities, institutions fared better on a relative basis versus the broad-based market indexes. The median participant return for global ex US developed equities was -8.5%, compared to -10.2% for the MSCI EAFE Index (Figure 5). In emerging markets, the median participant return was -9.2%, nearly 300 basis points (bps) higher than the MSCI Emerging Markets Index. The size of the range of returns among participants for both composites was similar to that of US equities (Figure 3).

Private Equity. After several years of strong performance, private equity returns settled in at a more modest level in fiscal year 2016. The trailing one-year IRR for the Cambridge Associates US Private Equity and Venture Capital Index was 2.0%, the lowest return for a fiscal year since 2009. Among participants, the median IRR for the private equity composite was 3.6% (Figure 6). Midsized and larger institutions reported the highest median IRR (4.3%) while smaller portfolios reported the lowest (2.8%) (Figure 4).

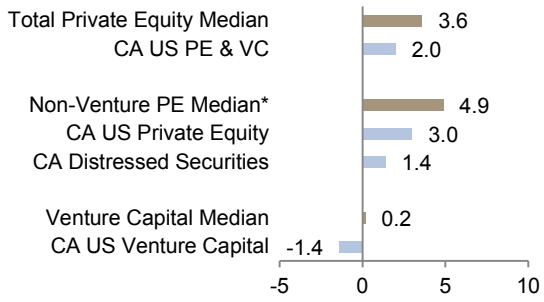
[2] On average, public equities accounted for 41.0% of the investment portfolio among participating institutions.

Figure 5. Public Equity: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



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

Figure 6. Private Equity: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



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

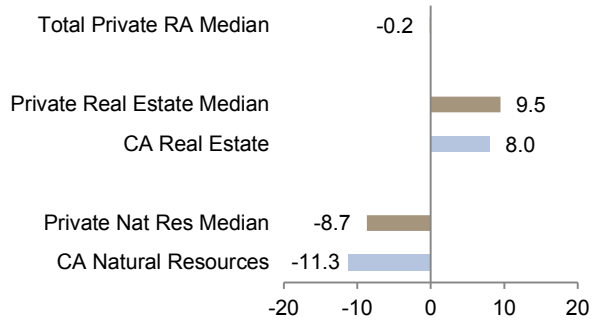
On a more granular level, the median IRR among participants was 4.9% for non-venture private equity and just 0.2% for venture capital (Figure 6). The median non-venture private equity IRR for larger institutions (6.4%) was more than double that of smaller institutions (3.0%). For venture capital, the median IRR across the three asset size groups varied little (Figure 4).

While returns among private equity funds have varied considerably historically, the range of composite IRRs among participants was narrower in fiscal year 2016 than the previous two years in which we have gathered this data. The range of total private equity IRRs from the 5th percentile to 95th percentile was 14 percentage points (ppts) in 2016 compared to 27 ppts in 2015 and 19 ppts in 2014. For the subcategories of non-venture private equity and venture capital, the range of IRRs in fiscal year 2016 was 18 ppts and 20 ppts, respectively (Figure 4).

Real Assets. Real assets consists of a diversified group of investments, including commodities, natural resources, real estate, and inflation-linked bonds. Returns for these substrategies were mixed in fiscal year 2016. Real estate and inflation-linked bonds produced positive returns, while natural resources and commodities were in the red.

Natural resources and real estate are broken out between public and private investments. Analysis of index returns for private real estate and private natural resources using the CA Modified Public Market Equivalent (mPME) shows that the private strategies underperformed the reference public indexes substantially for

Figure 7. Private Real Assets: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



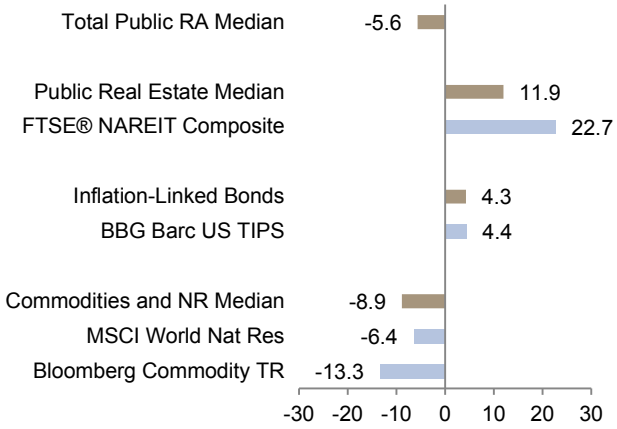
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Cambridge Associates LLC.
Note: Private investment return statistics are reported as horizon internal rates of return (IRRs).

2016 (Figure 11).[3] The median IRR among participants for private real estate and natural resources was 9.5% and -8.7%, respectively (Figure 7). The median IRR for the overall private real assets composite fell near the middle of these two returns (-0.2%), reflecting the nearly equal median asset allocation for each category among participants.

In public real assets, allocations among participants tend to be weighted more heavily toward natural resources and commodities. Consequently, median performance for the public real assets composite (-5.6%) was driven primarily by these strategies (Figure 8). The median participant returns for real estate (11.9%) and inflation-linked bonds (4.3%) were positive but negative for natural resources and commodities (-8.9%).

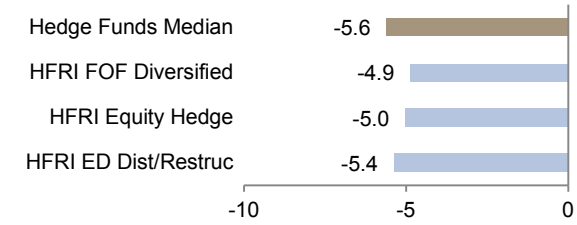
[3] Under the CA mPME methodology, the public index's share are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME net asset value (NAV) is a function of mPME cash flows and public index returns. The mPME analysis evaluates what return would have been earned had the dollars invested in private investments been invested in the public market instead.

Figure 8. Public Real Assets: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



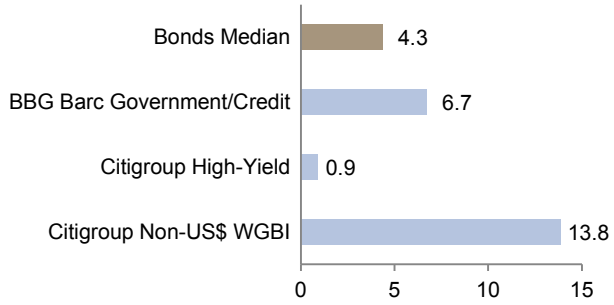
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg L.P., FTSE International Limited, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Figure 9. Hedge Funds: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Hedge Fund Research, Inc.

Figure 10. Bonds: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2016



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

The varying asset mixes across the diverse sub-strategies of these composites contributed to a wide range in returns reported across participants. The range of private real assets returns from the 5th percentile to 95th percentile was 27 ppts (Figure 4). The range of public real assets returns was similar at 25 ppts (Figure 3). For both composites, institutions at the top end of the return distribution had the highest proportional allocations to the outperforming real estate asset classes.

Hedge Funds. Many hedge funds again posted disappointing returns in fiscal year 2016. The median hedge fund composite return among participants was -5.6% (Figure 9) in fiscal year 2016, with the largest portfolios reporting the highest median return (-3.9%) (Figure 3). Just six of 128 participants reported a positive return for their hedge fund composite in 2016. On an index basis, diversified funds-of-funds that invest across a variety of strategies returned -4.9%, followed closely by equity-oriented hedge funds (-5.0%).

Bonds. Major bond market indexes posted strong performance in fiscal year 2016. The Bloomberg Barclays Government/Credit Bond Index returned 6.7% while the Citigroup Non-US World Government Bond Index performed even better (13.8%). However, the median return among participants (4.3%) significantly underperformed both benchmarks (Figure 10). Smaller portfolios reported the highest median return (4.8%) of the three asset size groups (Figure 3).

Analysis of Top and Bottom Performers in 2016

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 importance of an asset allocation mix and its contributions to performance cannot be overstated. Figure 11 breaks the participant group into four quartiles based on fiscal year 2016 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 of the institutions within each quartile.

The greatest disparity between top and bottom performers continues to be the way in which the overall equity portfolio was allocated. Institutions that posted a trailing one-year return in the top quartile had the highest average allocation to PE/VC (15.7%). Those in the bottom quartile of performers reported an average allocation of 8.1%. Conversely, the top quartile of performers reported the lowest average allocation to public equities, while the bottom quartile of performers had the highest average allocation.

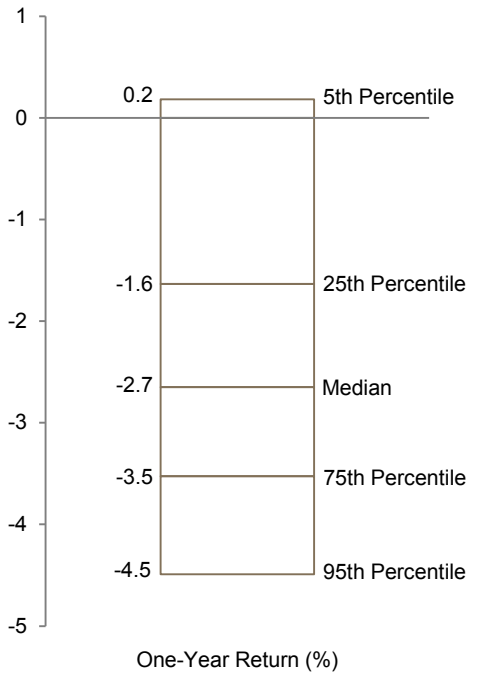
Attribution. Although asset allocation is a key driver of performance, it does not fully explain the variation of returns that are reported across different institutions. The execution or implementation of an asset allocation strategy also contributes to the total returns that portfolios earn. We do not have the level of detailed data that is necessary to perform a precise attribution analysis, but our data do allow us to conduct an estimated analysis that can help illuminate the main drivers of performance for fiscal year 2016.

Figure 12 illustrates the results of an analysis based on the one-year return and beginning fiscal year asset allocation of 158 respondents that provided sufficient data. 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]

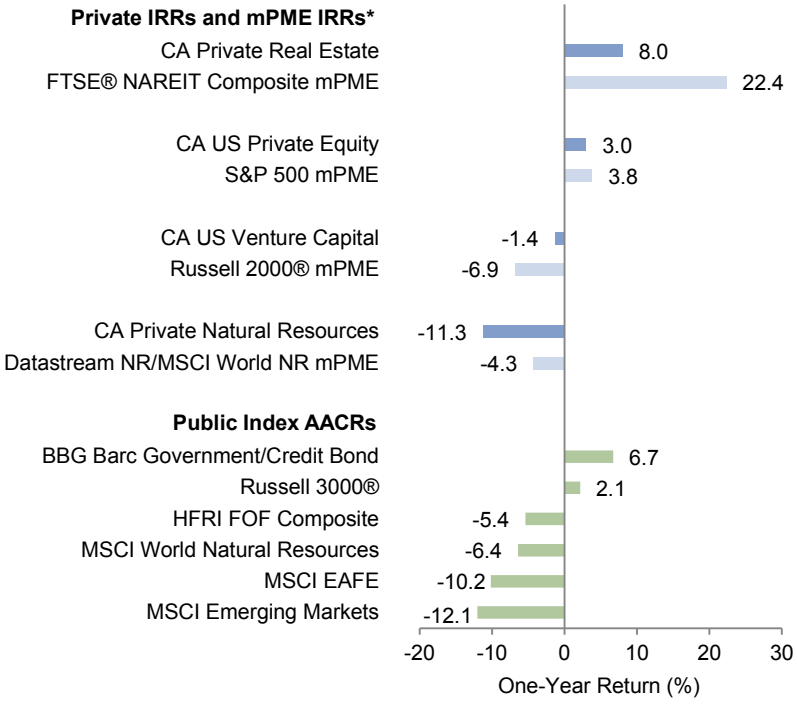
[4] This model assumes that flows to and from investment managers take place on the last day of the fiscal year. In addition, the analysis uses a standard set of asset class benchmarks that may be more or less representative of the asset allocation policy across different institutions. Therefore, the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

Figure 11. Analysis of Top and Bottom Quartile Performers: One-Year Asset Allocation
As of June 30, 2016

Return Distribution



Index Returns



Mean Asset Allocation by Performance Quartile (%): June 30, 2015 to June 30, 2016

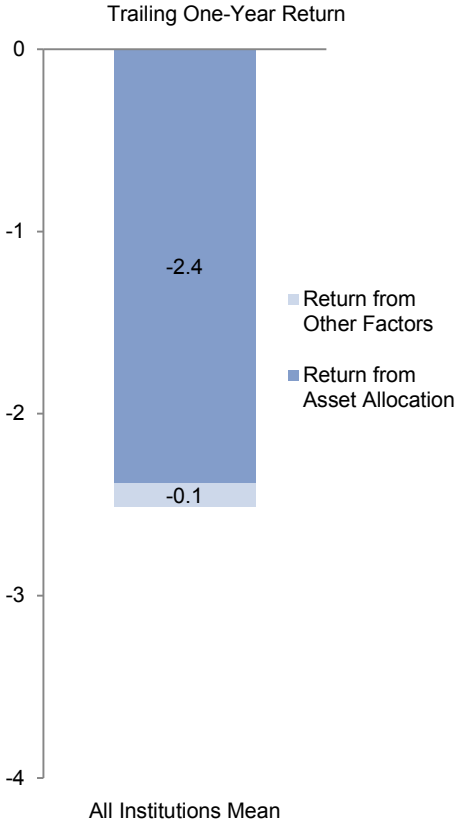
Quartile	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds	Dist Sec	PE & VC	Private RA	Public RA & ILBs	Cash	Other
Top Quartile	17.7	12.3	7.3	7.7	19.6	3.8	15.7	8.4	3.3	3.9	0.1
2nd Quartile	18.3	13.8	7.0	9.1	20.9	3.2	12.1	6.8	4.2	4.3	0.3
3rd Quartile	19.7	14.8	7.2	9.6	20.6	3.3	10.7	6.1	4.1	3.4	0.6
Bottom Quartile	21.3	16.2	7.9	10.0	20.4	2.7	8.1	4.2	5.9	3.0	0.3
All C&U Mean	19.3	14.3	7.4	9.1	20.3	3.3	11.7	6.4	4.4	3.6	0.3

Divergence of Asset Allocation from Mean

-4% -2% Mean 2% 4%

Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., 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.
Notes: Performance quartiles are based on the trailing one-year return as of June 30, 2016. Mean allocations are for the 2015 and 2016 June 30 periods. Analysis includes data for 158 colleges and universities.
* Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest. 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 flows and public index returns. Private benchmark IRRs and mPME IRRs are for the period of 7/1/15 to 6/30/16.

Figure 12. Attribution Analysis
As of June 30, 2016 • Percent (%)



Asset Class	Breakdown of Return from Asset Allocation: Mean Asset Allocation	Asset Class Benchmark Return	Contribution to Asset Class Return
US Bonds	7.3	6.7	0.5
US Equity	19.2	2.1	0.4
Private Real Estate	3.3	8.0	0.3
Non-Venture Private Equity	6.0	3.2	0.2
Developed ex US Bonds	0.8	13.8	0.1
Public Real Estate	0.5	22.7	0.1
Emerging Markets Bonds	0.5	9.8	0.1
Inflation-Linked Bonds	0.4	4.4	0.0
Distressed-Private Equity Structure	1.4	1.5	0.0
Timber	0.4	3.4	0.0
Other Private Investments	0.7	0.8	0.0
High-Yield Bonds	0.4	0.9	0.0
Cash & Equivalents	3.7	0.2	0.0
Other	0.4	0.2	0.0
Venture Capital	4.7	-1.5	0.0
Distressed-Hedge Fund Structure	1.9	-5.4	-0.1
Commodities	0.8	-13.3	-0.1
Public Energy / Natural Resources	2.5	-6.4	-0.2
Private Oil & Gas / Natural Resources	2.5	-11.8	-0.3
Long/Short Hedge Funds	9.5	-5.0	-0.5
Absolute Return (ex Distressed)	11.1	-4.9	-0.5
Emerging Markets Equity	7.4	-12.1	-0.9
Developed ex US Equity	14.5	-10.2	-1.5

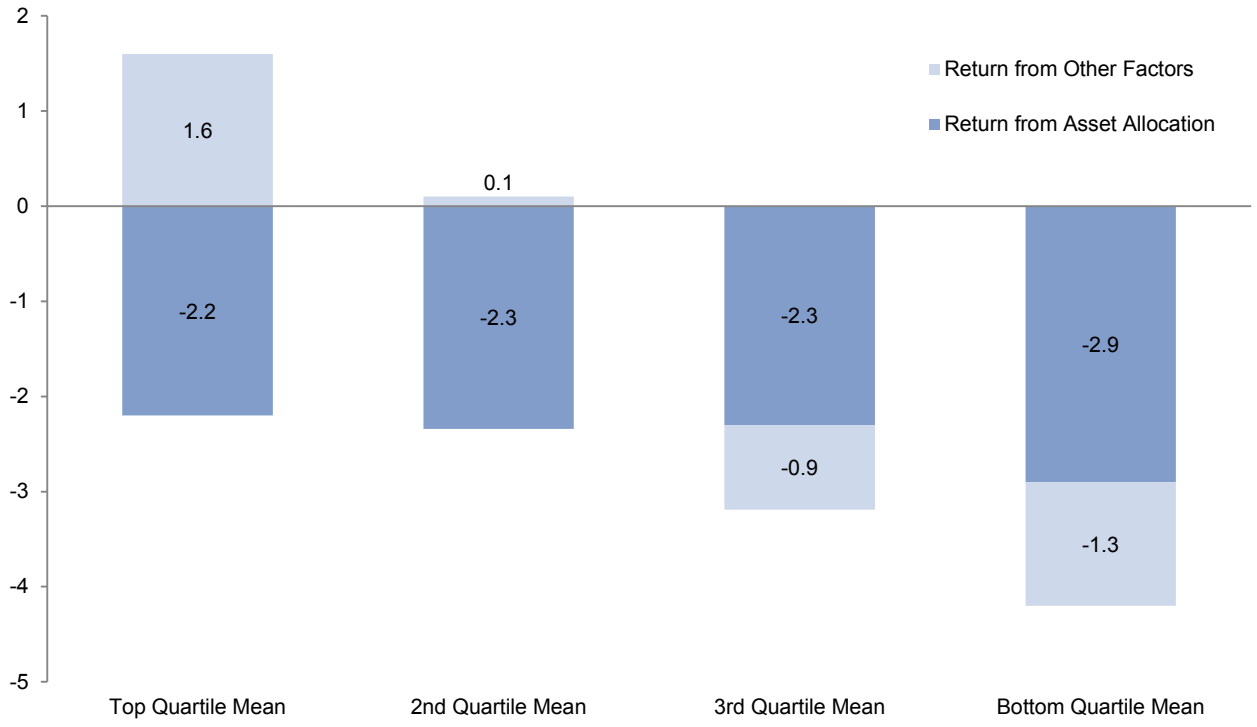
Sources: College and university data as reported to Cambridge Associates LLC. Index data provided by Barclays, Bloomberg L.P., BofA Merrill Lynch, Cambridge Associates LLC., Citigroup Global Markets, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., J.P. Morgan Securities, Inc., MSCI Inc., 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 158 institutions that provided beginning fiscal year asset allocation. Mean asset allocation is as of June 30, 2015. 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.

The analysis estimates that nearly all of the mean total return for the participant group could be explained by asset allocation in fiscal year 2016. US bonds made the largest positive contribution to the mean asset class return while global ex US equities made the largest overall contributions on the negative end. 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 (Figure 12).

While the average data for the overall peer group show factors other than allocation had a negligible impact on returns in fiscal year 2016, a breakdown of the data in the four performance quartiles tells a different

story (Figure 13). The model indicates that it was implementation decisions rather than asset allocation that drove most of the dispersion in returns across the peer group. The mean asset class return was nearly identical across the top three quartiles of performers, with the bottom quartile lagging slightly. However, the disparity among quartiles was significant in the portion of return attributable to other factors, with the top quartile producing by far the highest average return from this area.

Figure 13. Attribution Analysis by Performance Quartile: Trailing One-Year Return
As of June 30, 2016 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: Includes data for 158 institutions that provided beginning fiscal year asset allocation.

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.

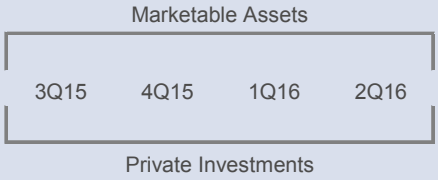
Private Investments. Institutions used two main methodologies to account for private investments in their fiscal year 2016 total portfolio return. The most frequently used methodology was to report returns on a current basis, meaning the total portfolio return incorporated private investment valuations for the entire fiscal year period. The second most frequently used methodology to account for private investments 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 2016 total return represents performance for the period of April 1, 2015, to March 31, 2016.

When assessing the impact of these two methodologies, it is important to consider private investment returns for both second quarter 2015 and second quarter 2016. With the lagged basis methodology, performance for the former period will be included in the one-year total return calculation, while performance for the latter period will be excluded. For natural resources, the Cambridge Associates private index return for second quarter 2016 was substantially stronger than second quarter 2015 (Figure 14). However, the opposite was true for private real estate and venture capital. Whether or not either reporting methodology would have an advantage over the other in the fiscal year 2016 total

Performance Reporting Methodologies

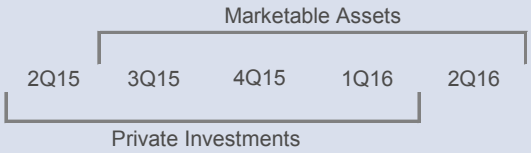
Current Basis

Total investment pool return for 2016 includes marketable asset and private investment performance for July 1, 2015, to June 30, 2016. Of the 122 institutions using this methodology, 120 used confirmed private investment valuations and two used estimated valuations.



Lagged Basis

Total investment pool return for 2016 includes marketable asset performance for July 1, 2015, to June 30, 2016, and private investment performance for April 1, 2015, to March 31, 2016.



Methodologies Used by Participants

Asset Size	Current Basis	Lagged Basis	No PI Allocation
Under $500mm	79%	3%	18%
n	*52*	*2*	*12*
$500mm to $1bn	76%	24%	0%
n	*26*	*8*	*0*
Over $1bn	72%	28%	0%
n	*44*	*17*	*0*
All Institutions	76%	17%	7%
n	*122*	*27*	*12*

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.

Figure 14. Cambridge Associates Private Investment Index Returns

	One Quarter Horizon Pooled Return	
	Q2 2015	Q2 2016
US Private Equity	3.9	4.0
US Venture Capital	6.8	0.7
Distressed Securities	1.8	2.3
Real Estate	4.2	1.5
Natural Resources	-1.0	6.6

Source: Cambridge Associates LLC.

return calculation will be depend on each institution's allocation across the private investment asset classes and their actual performance in these categories.

Net of Fee Calculations. Each participant in this study provided performance on a net-of-fees basis, with virtually all (158 of 161) providing a breakdown of the fee types deducted. The majority (68%) of respondents deduct only asset- and performance-based management fees while another 9% also deduct custody expenses (Figure 15). The remaining institutions deduct the aforementioned fee types as well as a variety of investment office oversight expenses. Consulting fees and internal staff salaries tend to be the largest components of investment oversight expenses and are deducted by 22% and 19% of institutions, respectively.

Past Cambridge Associates surveys have shown that total annual investment office oversight expenses range between 10 bps and 30 bps for most of our endowment clients.[5] Many factors can impact the overall level of costs including staffing levels,

[5] Please see Grant Steele and Elizabeth Cheever, "Investment Office Staffing, Oversight Costs, and Governance," Cambridge Associates Research Report, 2015.

Figure 15. Calculation of Net Returns
Fiscal Year 2016

Number of Institutions	*108*	*14*	*10*	*5*
% of Institutions	68	9	6	3
Asset-Based Mgmt Fees	x	x	x	x
Perf-Based Mgmt Fees	x	x	x	x
Custody Fees		x	x	x
Consulting Fees			x	x
Staff Salaries			x	x
Travel Expenses			x	x
Legal Expenses			x	x
Accounting Expenses			x	x
IC Meetings Costs			x	x
Rents/Space Costs			x	

Source: College and university data as reported to Cambridge Associates LLC.
Note: The remaining 13% of institutions deduct asset-based and performance-based management fees, as well as various other combinations of investment office oversight expenses.

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 tend to be lower for institutions with a larger asset base.

Long-Term Returns

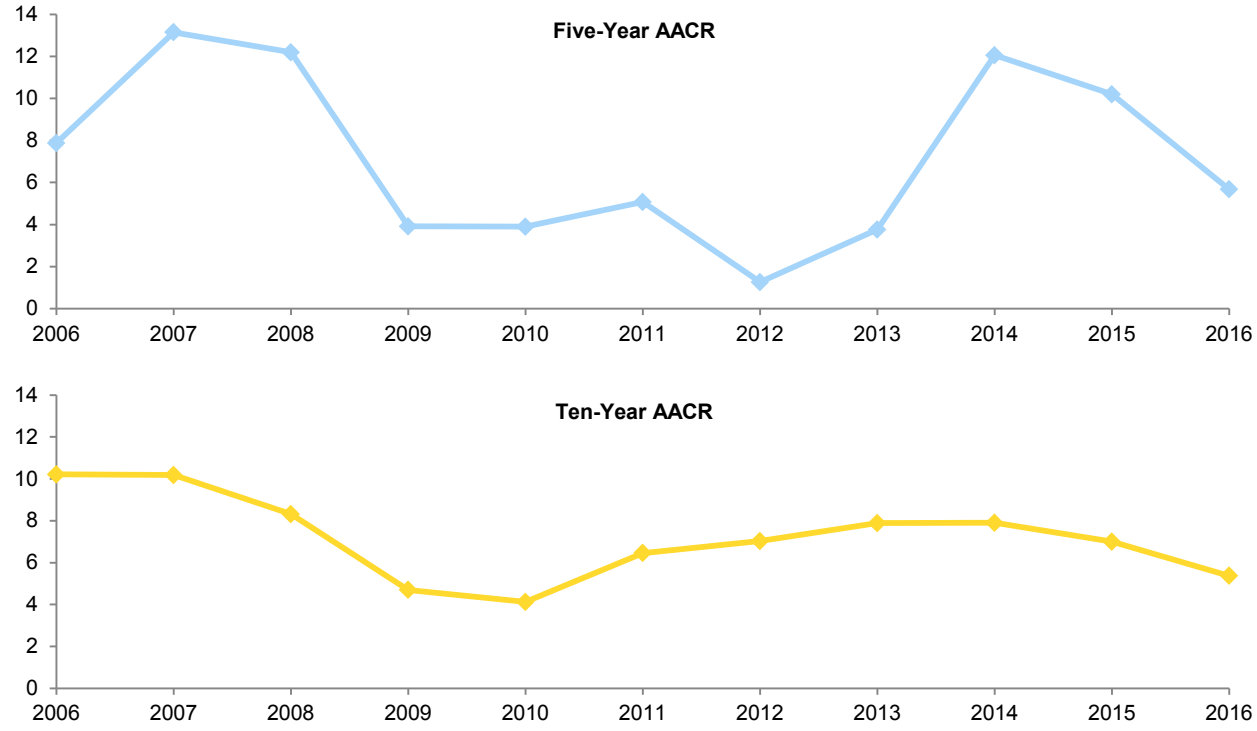
The mean average annual compound return (AACR) was 5.5% for the five-year period ending June 30, 2016 (Figure 1). Institutions with assets greater than $1 billion reported the highest average five-year return (6.2%) (Figure 2). The average return for the most recent five-year period is considerably lower compared to the prior two rolling five-year periods (Figure 16). However, this year's average rolling five-year return was higher than those ending fiscal years 2009–13, periods that included the steep market declines from the 2008–09 global financial crises.

The mean nominal AACR for the ten-year period was 5.2% (Figure 1), with the largest portfolios again reporting the highest mean return (5.9%) (Figure 2). The most recent ten-year period is one of the lowest long-term return periods reported over the last decade, surpassing only the ten-year periods ending in fiscal years 2009 and 2010 (Figure 16).

To maintain purchasing power for an endowment,[6] institutions must achieve a real return that offsets the average effective spending rate over the long term. Of the 100 institutions that provided consistent data over the last decade, the average long-term effective spending rate was 4.8%.[7] For

[6] 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.
[7] 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 encompassing fiscal years 2007 to 2016.

Figure 16. Rolling Five-Year and Ten-Year 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 124 institutions that provided returns for the last 20 years.

the institutions that provided a long-term real return objective, the most common figure reported was 5% (Figure 17).

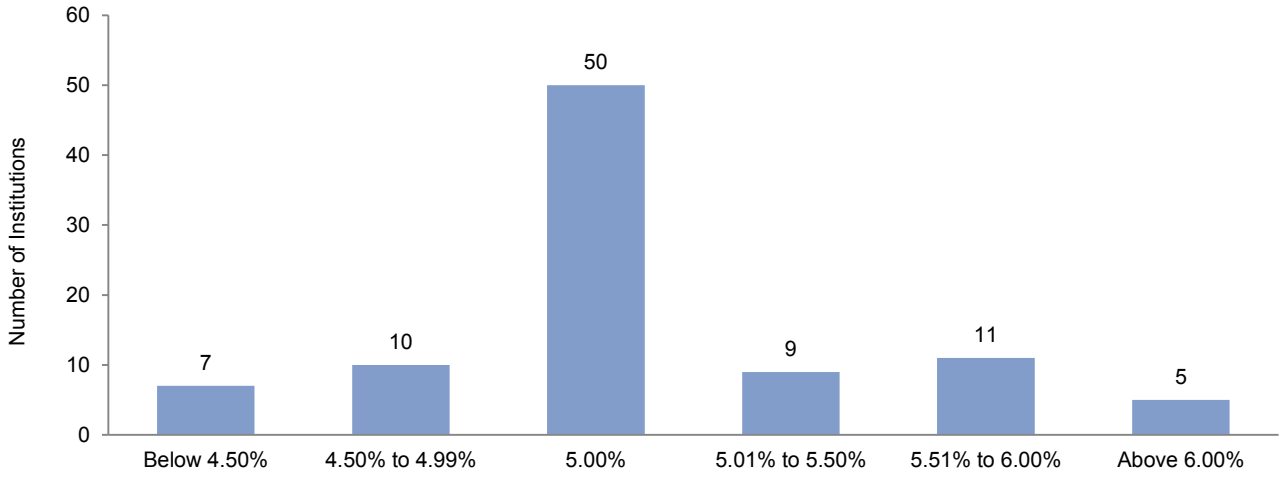
Through the trailing ten-year period ending June 30, 2016, the average real return after spending was -1.0% (Figure 1), with only 19 of 98 respondents reporting a return above 0%. This statistic is troubling as it demonstrates most endowments have lost purchasing power over the last ten years and struggled to maintain intergenerational equity at current spending levels. Institutions will need to reconsider their spending rates if this trend continues into the future.

Relative Returns: Simple Portfolio Benchmark. US equities and bonds have been among the top-performing marketable investments over the past ten years, outperforming global ex US equities, hedge funds, and natural resources (Figure 18). Consequently, portfolios that have diversified across these asset classes have considerably lagged a simple 70/30 benchmark that uses a US index for the equity component.[8] The average return for institutions in this study underperformed this simple benchmark by nearly 200 bps (Figure 1) for the trailing ten-year period. Institutions fared better against a 70/30 benchmark that uses a global equity index, with the mean participant return slightly outperforming this benchmark over the ten-year period.

These simple benchmarks help evaluate the decision to adopt the endowment model of investing where the portfolio is allocated across a diverse set of mostly equity-oriented investments, including non-traditional illiquid assets. While in retrospect diversification among the marketable asset classes did not benefit institutions over the trailing ten-year period, another key tenet of the endowment model was a boon to investment performance over this period. Institutions that had the highest

[8] Among institutions in this study, the mean combined allocation to global ex US equities, hedge funds, and public natural resources and commodities was 47%.

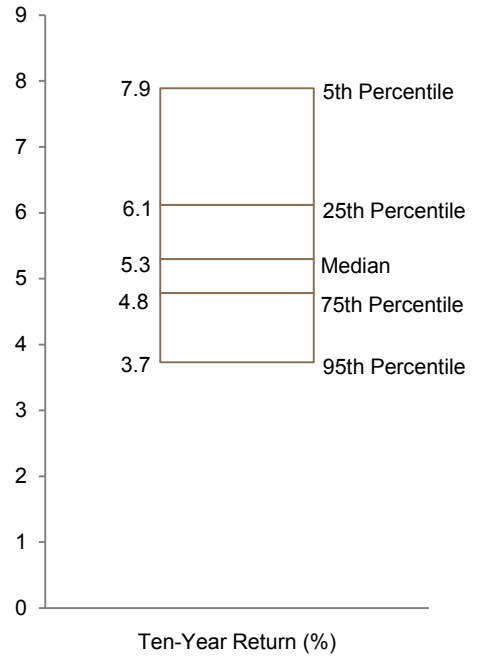
Figure 17. Real Total Portfolio Return Objectives



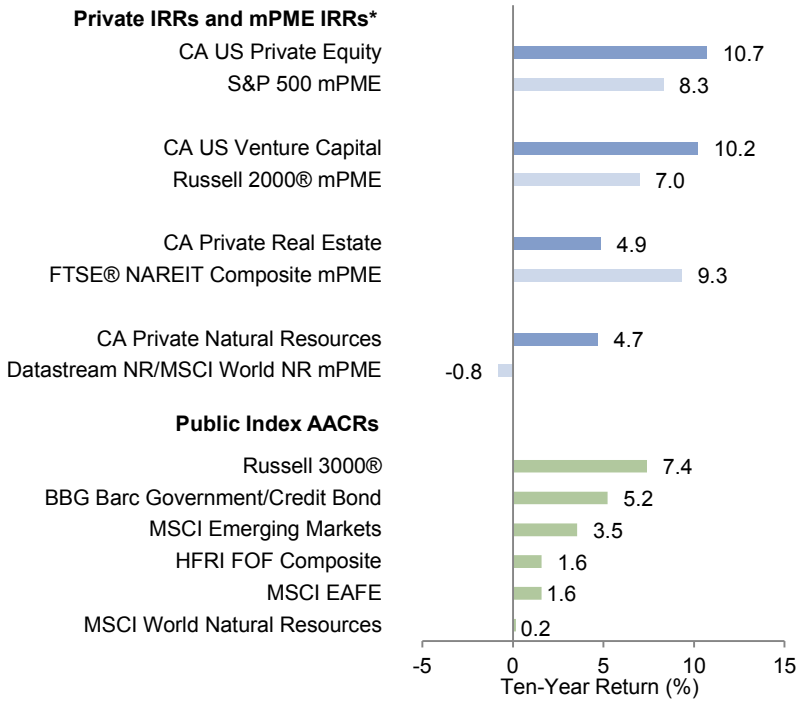
Source: College and university data as reported to Cambridge Associates LLC.
Note: Graph includes data for 92 colleges and universities that provided a real total portfolio return objective.

Figure 18. Analysis of Top and Bottom Quartile Performers: Ten-Year Asset Allocation
As of June 30, 2016

Return Distribution



Index Returns



Mean Asset Allocation by Performance Quartile (%): June 30, 2006 to June 30, 2016

Quartile	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds	Dist Sec	PE & VC	Private RA	Public RA & ILBs	Cash	Other
Top Quartile	15.0	11.0	5.8	7.6	21.3	3.7	17.9	11.7	3.3	2.5	0.2
2nd Quartile	19.0	13.6	7.2	10.2	19.0	4.0	11.5	7.3	5.2	2.6	0.3
3rd Quartile	21.8	14.4	6.2	13.3	18.0	3.4	8.9	4.2	6.4	3.2	0.2
Bottom Quartile	22.6	15.5	6.0	13.9	17.5	2.3	7.1	4.6	6.2	3.3	0.9
All C&U Mean	19.6	13.6	6.3	11.2	19.0	3.4	11.4	7.0	5.3	2.9	0.4

Divergence of Asset Allocation from Mean

-4% -2% Mean 2% 4%

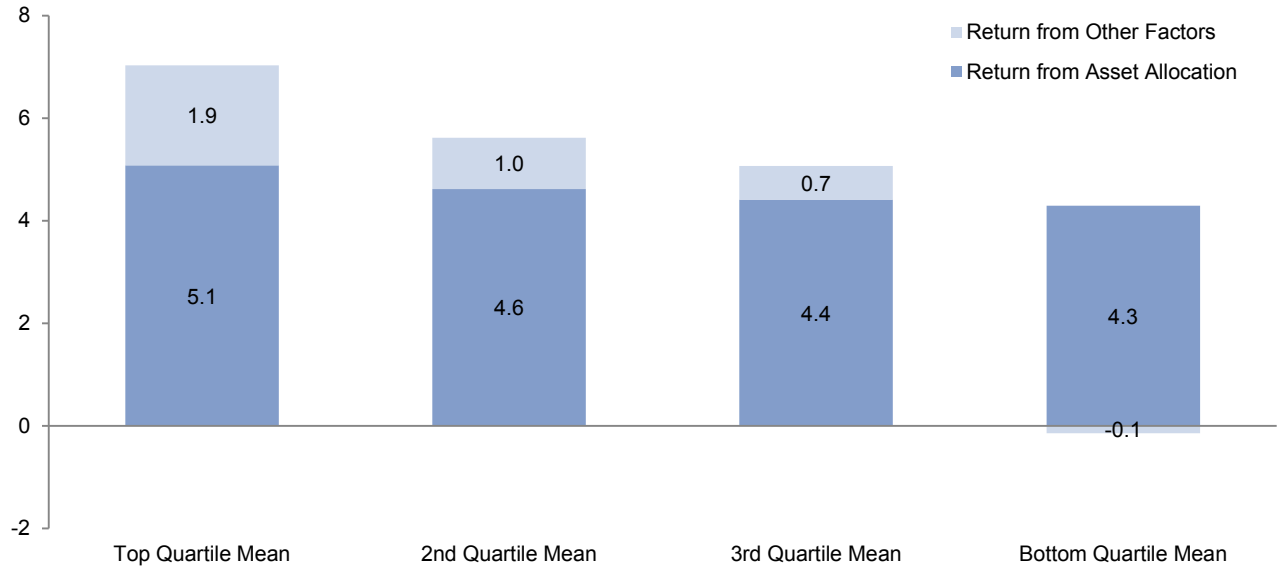
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., the National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Performance quartiles are based on the trailing ten-year return as of June 30, 2016. Mean allocations are for the 11 June 30 periods from 2006 and 2016. Analysis includes data for 117 institutions.
* Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest. 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 flows and public index returns. Private benchmark IRRs and mPME IRRs are for the period of 7/1/6 to 6/30/16.

allocations to illiquid private investments generally produced the best returns over the last decade.

Among the asset class benchmarks listed in Figure 18, most private investment strategies outperformed their public market counterparts on an mPME basis over the past ten years. Institutions in the top quartile of performers reported an average allocation of 17.9% to private equity and venture capital over the last ten years, while those in the bottom quartile of performers averaged just 7.1%. Similarly, the top quartile of performers reported the highest average allocation to private real assets (11.7%) while those in the bottom quartile reported the lowest average allocation (4.6%).

Attribution. Our analysis of historical asset allocation and returns indicates that asset allocation was responsible for some of the peer group outperformance among the top performance quartile over the last decade (Figure 19). However, the analysis also suggests that it was other factors that explain most of the dispersion in returns within the peer group over this period. The model estimates that the top performance quartile earned an average of 5.1% from asset allocation over the trailing ten-year period and added another 1.9% through implementation decisions. Conversely, it is estimated that the bottom performance quartile had the lowest average return from both factors, including a slight negative contribution (-0.1%) from implementation decisions. The ranges of actual asset class returns across the entire participant group for the trailing five- and ten-year periods are listed in Figures 20 and 21.

Figure 19. Attribution Analysis by Performance Quartile: Trailing Ten-Year Return
As of June 30, 2016 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: Includes data for 117 institutions.

Figure 20. Dispersion of Participants' Asset Class Returns: Marketable Investments (Trailing Five- and Ten-Year)
As of June 30, 2016

	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 Five-Year										
5th Percentile	8.4	11.4	13.5	7.1	2.5	5.9	6.0	2.4	-1.0	12.8
25th Percentile	6.9	10.5	12.3	4.7	-1.2	4.0	4.5	-2.1	-4.6	11.6
Median	6.2	9.6	11.0	3.6	-2.3	3.4	3.4	-5.3	-6.9	8.7
75th Percentile	5.6	6.5	10.0	2.5	-3.8	2.6	2.7	-7.2	-8.3	6.9
95th Percentile	4.2	3.7	8.5	1.0	-5.6	1.5	1.5	-10.4	-10.6	2.3
Mean	6.3	8.5	11.1	3.7	-2.2	3.5	3.6	-4.4	-6.4	9.0
n	*116*	*39*	*120*	*114*	*111*	*119*	*119*	*87*	*86*	*23*
Trailing Ten-Year										
5th Percentile	7.4	10.3	9.3	6.3	6.8	7.3	6.9	3.6	1.4	11.7
25th Percentile	5.7	9.1	8.4	4.4	4.9	6.0	5.3	1.1	-0.2	7.5
Median	5.2	8.3	7.3	3.5	3.9	5.2	4.5	-0.6	-1.1	5.4
75th Percentile	4.5	5.5	6.6	2.3	2.8	4.3	3.4	-2.3	-2.9	4.2
95th Percentile	4.0	2.7	5.4	1.0	1.2	2.9	2.3	-4.0	-4.0	2.4
Mean	5.4	7.4	7.4	3.5	3.9	5.1	4.4	-0.5	-1.4	5.8
n	*103*	*19*	*110*	*100*	*75*	*100*	*101*	*55*	*43*	*17*

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 21. Dispersion of Participants' Asset Class Returns: Private Investments (Trailing Five- and Ten-Year)
As of June 30, 2016

	Total Private Equity[1]	Non-Venture Private Equity[2]	Venture Capital	Total Private Real Assets[3]	Private Real Estate	Private Natural Resources
Trailing Five-Year						
5th Percentile	17.5	17.5	25.1	12.9	16.3	7.9
25th Percentile	14.3	12.5	17.7	8.9	13.9	2.3
Median	12.1	11.0	12.7	5.1	11.8	-0.3
75th Percentile	10.0	9.4	10.2	3.0	8.9	-3.8
95th Percentile	7.5	7.2	2.9	-3.3	2.6	-11.4
Mean	12.2	11.3	13.5	5.5	10.9	-1.3
n	*107*	*104*	*95*	*90*	*92*	*86*
Trailing Ten-Year						
5th Percentile	15.1	15.6	19.3	8.3	9.5	12.7
25th Percentile	12.3	11.2	13.9	5.6	5.9	6.5
Median	10.6	9.7	11.0	3.8	3.8	5.0
75th Percentile	9.0	8.7	9.3	1.6	1.8	2.5
95th Percentile	7.0	6.4	5.5	-5.5	-3.3	-4.4
Mean	10.8	10.1	11.6	3.0	3.7	4.5
n	*103*	*100*	*82*	*74*	*76*	*59*

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.

Policy Portfolio Benchmarks

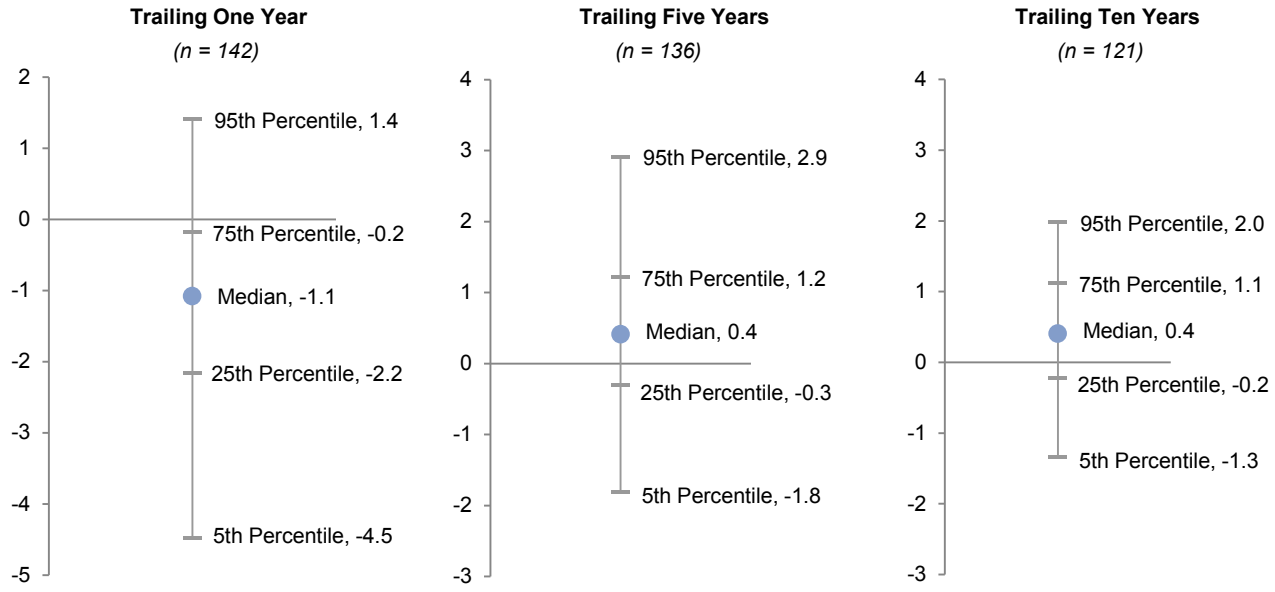
Relative Returns. Benchmarking is all about answering the question, "how are we doing?" in ways that are both accurate and relevant to the objectives of the portfolio being measured. While performance results of peers can be informative, they are not necessarily the most effective benchmark to evaluate 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.[9]

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.

Over 75% of participating institutions (113 of 142) underperformed their policy portfolio benchmark in fiscal year 2016. The median difference between the total portfolio return and the policy benchmark among all institutions was -1.1 ppts (Figure 22). Most institutions fared better versus their policy benchmark over the longer time horizon. The median difference between the total portfolio AACR and the benchmark was 0.4 ppts for both the trailing five- and ten-year periods.

[9] For a more in-depth discussion on the appropriate uses of peer data, please see William Prout et al., "Finding the Proper Perspective for Peer Comparisons," Cambridge Associates Research Report, 2016.

Figure 22. Range of Out/Underperformance of Total Return Versus Policy Portfolio Benchmark
As of June 30, 2016 • 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 80% of the respondents (112 of 136) that provided a policy portfolio benchmark use a detailed, asset class–specific benchmark to evaluate the performance of the total portfolio. The other 24 institutions that provided data use a simple benchmark, which typically incorporates a broad-based equity market index and a bond index weighted in proportion to the overall risk profile of the portfolio.

For those that use a detailed policy portfolio benchmark, the components of the 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 public and private equities, where 16% of institutions use a single index to benchmark their entire equity allocation (Figure 23). This method is appropriate where there is a broad target allocation to equity stated in the policy and there is discretion in choosing the strategies to fill out that allocation.[10] The remaining 84% of institutions assign separate indexes for public and private equities and/or based on geographic orientation.

Where separate indexes were reported for public equities based on geographic orientation, the Russell 3000® Index was cited by 67% of institutions for US equities (Figure 23). The same proportion of institutions 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 developed markets ex US and emerging markets, particularly if the targets are out of proportion to the weightings of the MSCI ACWI ex US Index.

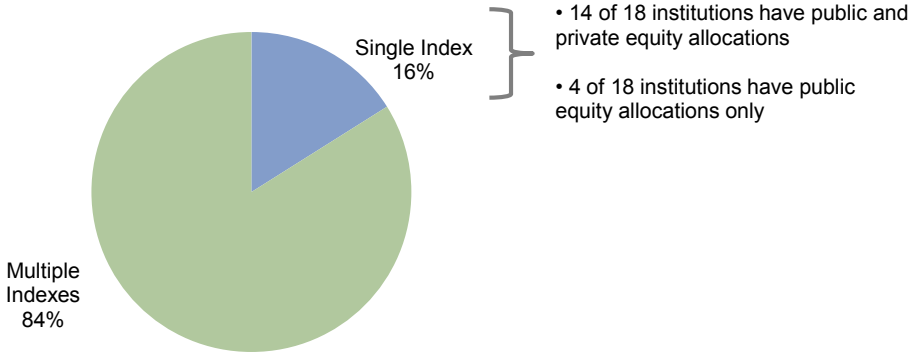
For institutions that benchmark private equity and venture capital separately from public equity, 47% use the Cambridge Associates LLC Private Equity and Venture Capital indexes (Figure 23). Another 33% of institutions used a public market index, with half of those adding a prespecified percentage or premium (ranging from 2% to 5%) to the index return. The choice of the public indexes reported by institutions varies widely and should be representative of the private equity program's exposure and geographic orientation.

The use of solely the Bloomberg Barclays Aggregate Bond Index was the most common benchmarking approach for bonds and was reported by 32% of institutions (Figure 24). 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 40% of institutions. For real assets, benchmark combinations are unique across most participants due to the wide variety of strategies under this category.

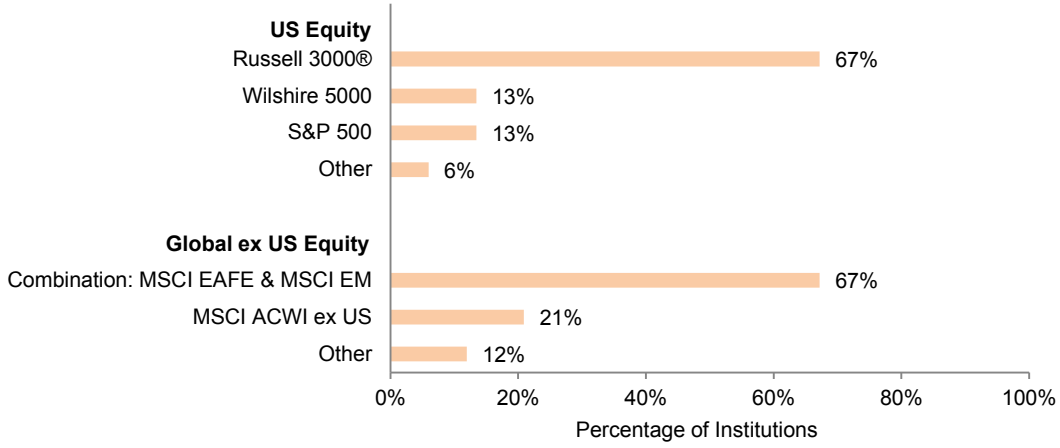
[10] Even in such cases where the target allocation to equity is not broken out by substrategies, there is typically a liquidity policy that sets limits on the proportion of the portfolio that can be invested in illiquid private investments.

Figure 23. Frequently Used Components of Policy Portfolio Benchmarks: Public and Private Equity
As of June 30, 2016

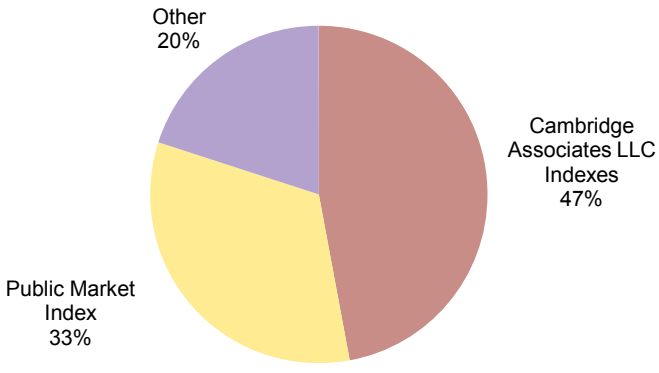
Benchmark for the Entire Equity Allocation *(n = 112)*



Public Equity Indexes Reported by Geographic Orientation *(n = 67)*

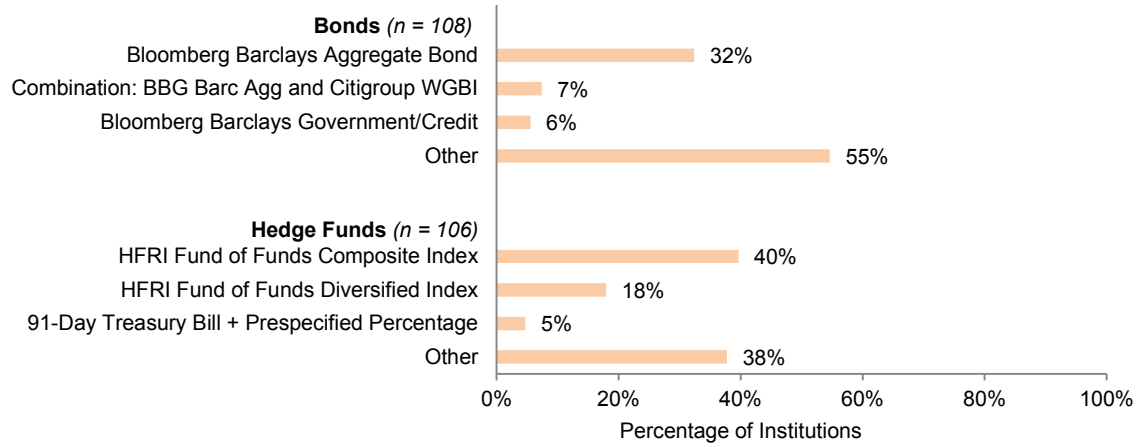


Private Equity Indexes *(n = 85)*



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

Figure 24. Frequently Used Components of Policy Portfolio Benchmarks: Bonds and Hedge Funds
As of June 30, 2016



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

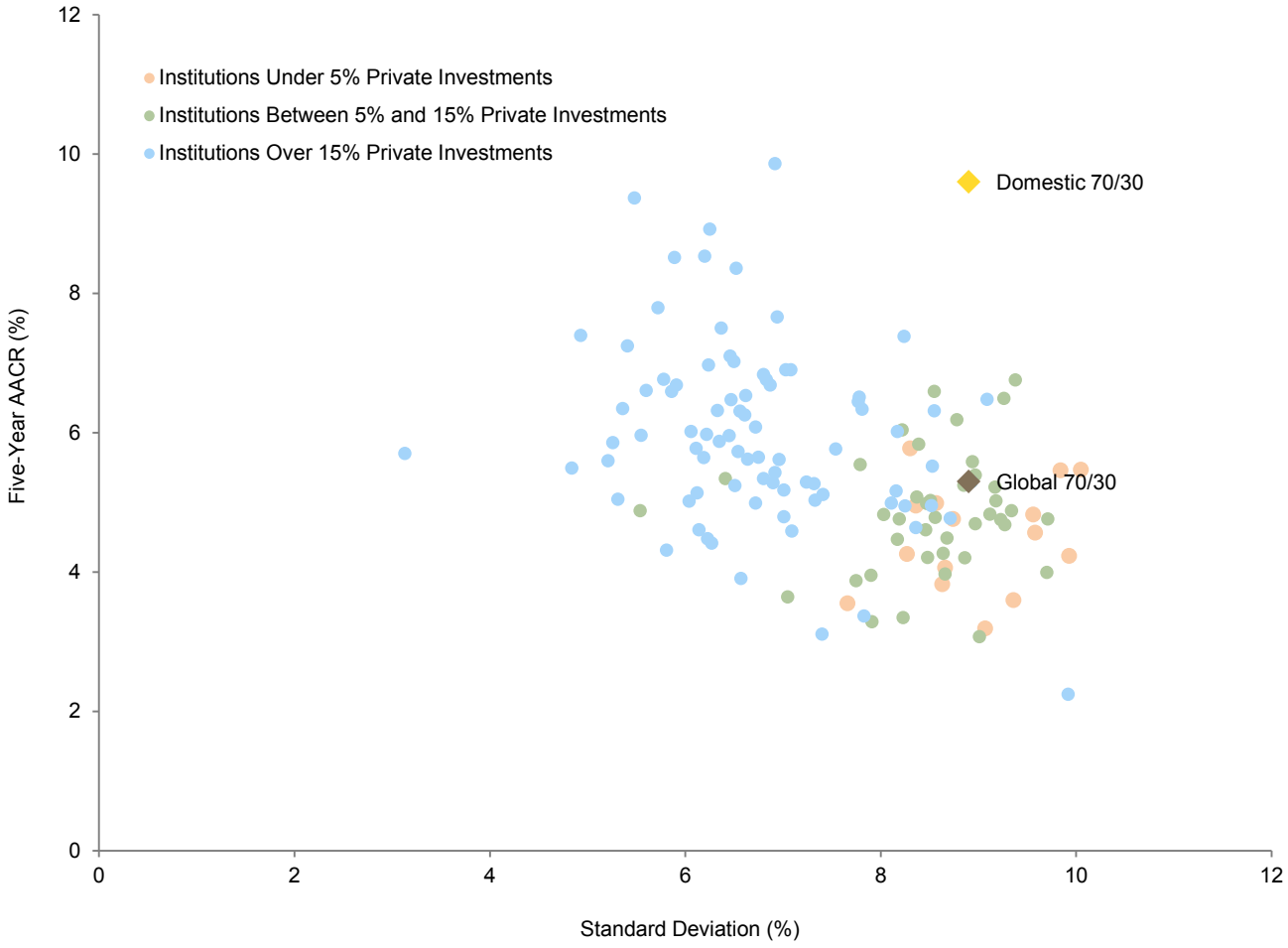
Risk-Adjusted Performance

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 for the returns of 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 25 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 0.92, significantly higher than that of the other subgroups with smaller private allocations. While the magnitude of the differences in average Sharpe ratios is partly a function of this group's higher average five-year return, it is also attributable to the group's lower average standard deviation.

Figure 25. Risk/Return and Sharpe Ratio
Five Years Ended June 30, 2016



		By Private Investment Allocation			70/30 Benchmarks	
	All Institutions	Under 5%	5% – 15%	Over 15%	Domestic	Global
Five-Year AACR	5.5	4.5	4.8	6.0	9.6	5.3
Standard Deviation	7.5	9.0	8.5	6.7	8.9	8.9
Sharpe Ratio	0.78	0.53	0.59	0.92	1.07	0.61
n	*139*	*15*	*40*	*84*		

Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., Frank Russell Company, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.
Notes: Analysis includes only institutions that provided underlying quarterly returns and asset allocation for the last five years. Each institution's private investment allocation represents the mean for the six June 30 periods from 2011 to 2016. The Domestic 70/30 benchmark is composed of 70% Russell 3000® / 30% Bloomberg Barclays Government/Credit and the Global 70/30 benchmark is composed of 70% MSCI ACWI / 30% Bloomberg Barclays Government/Credit.

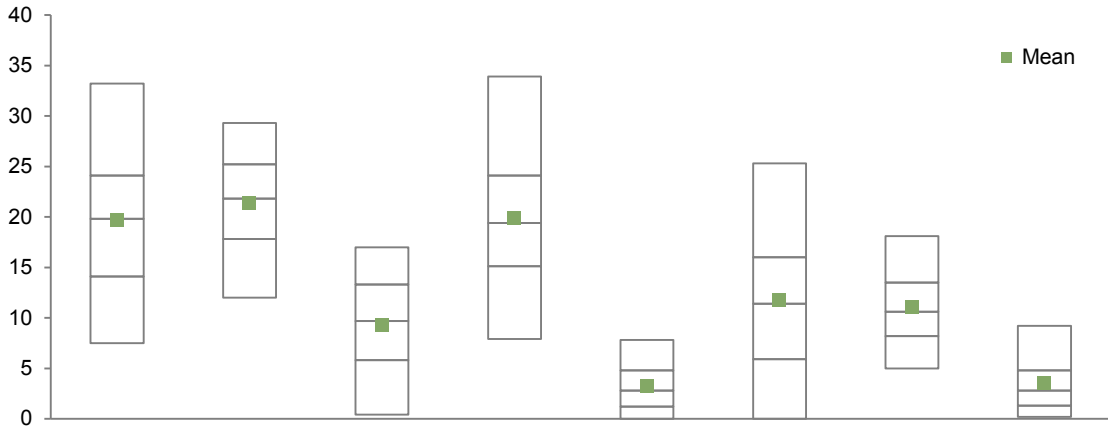
Portfolio Asset Allocation

2016 Asset Allocation

Over 40% of the average LTIP consisted of public equities at June 30, 2016. On average, allocations to global ex US equities (21.4%) were higher than those to US equities (19.6%). Portfolios had significant exposure to alternative assets, with 19.9% allocated to hedge funds and 11.7% allocated to private equity and venture capital, on average. Another 3.2% 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 11.1% of portfolios, on average. Average allocations to bonds and cash were 9.3% and 3.5%, respectively (Figure 26).

As Figure 27 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 is a more granular view of allocations within each broad asset class.

Figure 26. Asset Allocation Distribution by Asset Class
As of June 30, 2016 • Percent (%) • n = 161



	US Equity	Global ex US Equity	Bonds	Hedge Funds	Distressed Securities	Priv Equity & Ven Capital	Real Assets & ILBs	Cash & Equivs
5th Percentile	33.2	29.3	17.0	33.9	7.8	25.3	18.1	9.2
25th Percentile	24.1	25.2	13.3	24.1	4.8	16.0	13.5	4.8
Median	19.8	21.8	9.7	19.4	2.8	11.4	10.6	2.8
75th Percentile	14.1	17.8	5.8	15.1	1.2	5.9	8.2	1.3
95th Percentile	7.5	12.0	0.4	7.9	0.0	0.0	5.0	0.2
Mean	19.6	21.4	9.3	19.9	3.2	11.7	11.1	3.5

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

Figure 27. Summary Asset Allocation by Asset Size
As of June 30, 2016 • Percent (%)

	Under $500mm (n = 66)		$500mm to $1bn (n = 34)		Over $1bn (n = 61)	
	Mean	Median	Mean	Median	Mean	Median
US Equity	**24.7**	**23.8**	**17.3**	**16.6**	**15.4**	**15.6**
Global ex US Equity	**24.1**	**24.7**	**19.3**	**19.6**	**19.5**	**19.5**
Developed Markets	16.6	16.5	12.7	13.5	12.0	11.9
Emerging Markets	7.5	7.7	6.6	6.9	7.4	7.3
Bonds	**12.6**	**13.3**	**8.0**	**7.3**	**6.4**	**6.1**
US Bonds	10.7	10.8	6.7	6.8	5.0	5.3
Developed ex US Bonds	0.7	0.0	0.7	0.0	0.8	0.0
Emerging Markets Bonds	0.7	0.0	0.4	0.0	0.2	0.0
High-Yield Bonds	0.5	0.0	0.1	0.0	0.4	0.0
Hedge Funds	**17.3**	**18.2**	**22.5**	**21.4**	**21.3**	**20.9**
Long/Short Hedge Funds	7.8	7.7	9.1	8.5	10.6	9.7
Absolute Return (ex Distressed)	9.5	9.7	13.4	12.4	10.8	11.1
Distressed Securities	**2.3**	**1.7**	**4.0**	**3.9**	**3.7**	**3.2**
Hedge Fund Structure	1.5	1.2	2.0	1.3	1.9	1.6
Private Equity Structure	0.9	0.5	2.0	1.3	1.8	1.3
Private Equity & Venture Capital	**6.4**	**5.9**	**12.8**	**11.9**	**16.9**	**15.8**
Venture Capital	2.5	1.5	5.0	3.7	7.5	7.1
Non-Venture Private Equity	3.0	2.6	7.2	6.7	8.8	8.6
Other Private Investments	0.9	0.2	0.7	0.1	0.6	0.0
Real Assets & Infl-Linked Bonds	**9.5**	**9.2**	**10.7**	**10.7**	**13.1**	**12.5**
Private Real Estate	1.4	0.5	3.2	2.7	5.2	4.6
Public Real Estate	0.7	0.0	0.8	0.0	0.4	0.0
Commodities	0.8	0.6	0.4	0.0	0.7	0.0
Inflation-Linked Bonds	0.6	0.0	0.1	0.0	0.5	0.0
Private Oil & Gas/Natural Resources	1.2	0.6	3.4	3.1	4.4	4.2
Timber	0.1	0.0	0.4	0.0	0.7	0.3
Public Energy/Natural Resources	4.8	4.9	2.4	2.3	1.2	0.0
Cash & Equivalents	**2.9**	**2.4**	**5.1**	**5.0**	**3.3**	**2.8**
Other	**0.2**	**0.0**	**0.2**	**0.0**	**0.4**	**0.0**

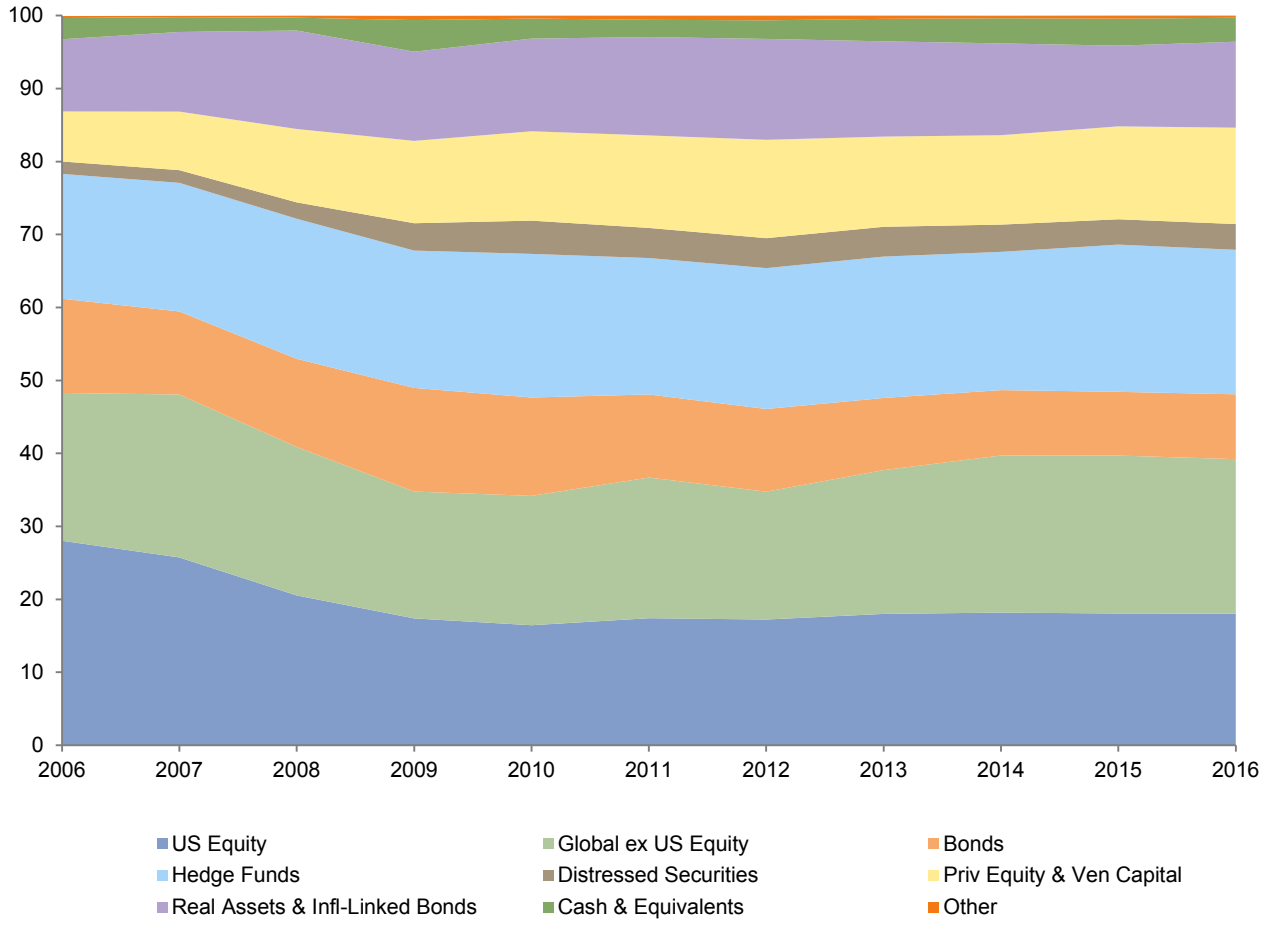
Source: College and university data as reported to Cambridge Associates LLC.

Historical Asset Allocation

Average allocations to some of the broad asset class categories at the end of fiscal year 2016 look considerably different than those reported a decade ago (Figure 28). The largest change in average allocations was to US equities which decreased by 10.0 ppts from 2006 to 2016. The biggest increase was to private equity and venture capital, where the average allocation rose by 6.3 ppts. In both cases, the greatest extent of the changes occurred during the first few years of the decade.

Figure 29 shows the average asset allocation of colleges and universities in 2006, 2011, and 2016 for the three broad asset size groups. Institutions with assets under $500 million reported the largest decrease to US equity allocations over the full ten-year period (12.7 ppts). Allocations to bonds also declined over the decade for

Figure 28. Historical Mean Asset Allocation Trends
Years Ended June 30 • Percent (%)



	Constant Universe											All C&U
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016
US Equity	28.0	25.7	20.5	17.4	16.4	17.4	17.2	18.0	18.2	18.1	18.0	19.6
Global ex US Equity	20.3	22.3	20.3	17.4	17.7	19.3	17.5	19.7	21.5	21.6	21.2	21.4
Developed Markets	*15.5*	*16.5*	*14.7*	*12.1*	*12.0*	*12.8*	*11.3*	*12.9*	*13.9*	*14.1*	*13.7*	*14.1*
Emerging Markets	*4.7*	*5.8*	*5.7*	*5.3*	*5.7*	*6.5*	*6.2*	*6.8*	*7.6*	*7.5*	*7.4*	*7.3*
Bonds	12.9	11.4	12.1	14.2	13.5	11.4	11.3	9.9	9.0	8.7	8.9	9.3
Hedge Funds	17.1	17.6	19.2	18.8	19.7	18.7	19.3	19.4	18.9	20.2	19.8	19.9
Distressed Securities	1.7	1.7	2.2	3.7	4.6	4.1	4.1	4.1	3.7	3.5	3.5	3.2
Priv Equity & Ven Capital	6.9	8.0	10.1	11.3	12.2	12.7	13.5	12.4	12.3	12.7	13.2	11.7
Real Assets & Infl-Linked Bonds	9.9	10.9	13.5	12.2	12.7	13.5	13.8	13.1	12.6	11.1	11.8	11.1
Cash & Equivalents	2.9	2.0	1.8	4.3	2.7	2.4	2.6	3.1	3.4	3.7	3.3	3.5
Other	0.3	0.2	0.3	0.6	0.4	0.6	0.6	0.5	0.4	0.4	0.3	0.3

Source: College and university data as reported to Cambridge Associates LLC.
Notes: Constant universe represents 117 institutions that provided asset allocation data for each year from 2006 to 2016. All C&U represents 161 colleges and universities that provided 2016 data.

Figure 29. Trends in Asset Allocation by Asset Size
Equal-Weighted Means as of June 30 • Percent (%)

	US Equity	Global ex US Total	Global ex US Dev	Global ex US EM	Bonds	Hedge Funds	Dist Sec	PE/VC	RA & ILBs	Cash & Equiv
Under $500mm *(n = 36)*										
2006	35.5	20.6	*16.6*	*4.0*	16.7	11.2	0.7	2.9	8.4	3.7
2011	22.9	23.0	*16.8*	*6.2*	15.7	16.3	2.8	6.5	11.3	1.3
2016	22.8	24.2	*16.7*	*7.4*	12.5	17.7	2.5	7.6	10.3	2.2
Change (ppt)										
2011–2016	-0.1	1.2	*-0.1*	*1.3*	-3.2	1.3	-0.3	1.1	-1.0	0.8
2006–2016	-12.7	3.5	*0.1*	*3.4*	-4.2	6.5	1.9	4.7	1.9	-1.6
$500mm to $1bn *(n = 29)*										
2006	26.8	18.7	*15.0*	*3.7*	13.3	19.8	2.0	6.7	8.4	3.8
2011	15.9	18.2	*12.1*	*6.1*	10.8	20.4	5.2	12.1	12.5	4.3
2016	17.4	20.3	*13.2*	*7.1*	8.8	20.5	4.5	12.7	11.0	4.7
Change (ppt)										
2011–2016	1.5	2.1	*1.1*	*1.0*	-2.0	0.1	-0.7	0.6	-1.5	0.4
2006–2016	-9.5	1.6	*-1.8*	*3.4*	-4.5	0.7	2.6	6.0	2.5	0.9
Over $1bn *(n = 54)*										
2006	23.7	20.7	*15.0*	*5.7*	10.1	19.5	2.4	9.7	11.7	1.9
2011	14.3	17.4	*10.5*	*6.9*	8.5	19.6	4.3	17.3	15.5	2.2
2016	15.1	19.6	*11.9*	*7.7*	6.4	21.1	3.5	17.3	13.3	3.2
Change (ppt)										
2011–2016	0.9	2.2	*1.5*	*0.7*	-2.1	1.5	-0.7	0.0	-2.3	1.0
2006–2016	-8.6	-1.1	*-3.1*	*2.0*	-3.7	1.6	1.1	7.6	1.6	1.4

Source: College and university data as reported to Cambridge Associates LLC.
Note: Asset sizes are based on June 30, 2016 data.

each size cohort. Each asset size group saw significant increases to private equity and venture capital allocations over the last ten years, with portfolios over $1 billion reporting the largest increase (7.6 ppts). Hedge funds allocations also increased substantially for the smallest portfolios over the decade (6.5 ppts).

Changes in portfolio allocations were generally more modest over the second half of the decade, and in some cases a reverse of the longer-term trends. Since 2011, US public equity allocations actually increased slightly for midsized and larger portfolios. For real assets, average allocations have declined since 2011 for all asset size groups after increasing over the prior five years.

Target Asset Allocation

While 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.

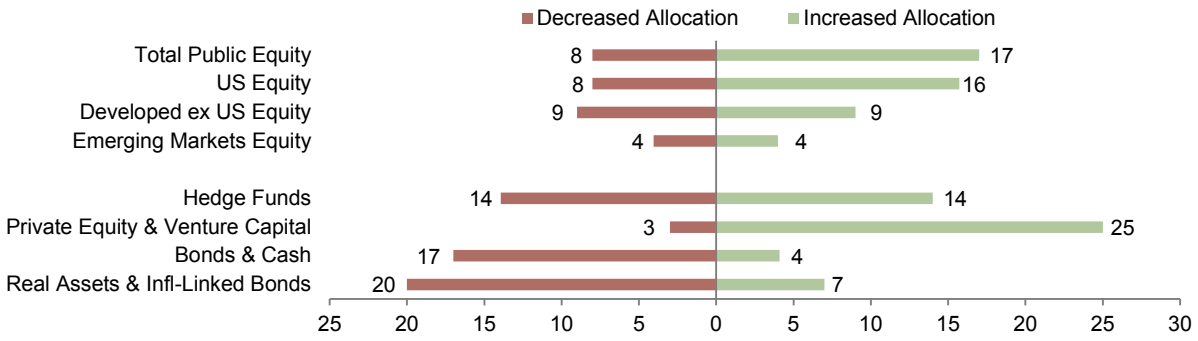
Nearly all survey participants (154 of 161) provided target asset allocation data for fiscal year 2016. Institutions construct their target asset allocation mix under different frameworks. Of the 154 institutions that provided target asset allocation data, 82% reported data using the traditional asset 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 over 40% of these institutions made a change to their policy targets in fiscal year 2016. Institutions with larger portfolios were most likely to make changes to their policy targets (47%) followed by midsized portfolios (46%) and smaller portfolios (31%).

As shown in Figure 30, many institutions are increasing the equity exposure in their portfolio. The most striking change in fiscal year 2016 was within private equity and venture capital, where 25% of institutions raised targets and only 3% reported a decrease. The proportion of institutions that reported increases to public equity was more than double the proportion that lowered targets, with nearly the entire differential a result of changes to US equity targets. Among the other broad asset class categories, the proportion of institutions lowering their hedge fund target (14%) was identical to the proportion that reported increases. Meanwhile as in the prior year, the proportion of institutions lowering their targets to bonds and real assets was considerably higher that the proportion that increased their target allocation. Figure 31 shows detailed data by asset size.

Figure 30. Changes in Target Asset Allocation

June 30, 2015 – June 30, 2016 • Percentage of Institutions Increasing or Decreasing Targets



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

Notes: Exhibit represents data for 118 colleges and universities that provided target asset allocation data for 2015 and 2016. Real assets includes targets to both public and private assets.

Figure 31. Changes in Target Asset Allocation by Asset Size
June 30, 2015 – June 30, 2016

	Total Equity	US Equity	DM ex US Equity	EM Equity	Hedge Funds	PE/VC	Bonds & Cash	RA & ILBs	Other
Under $500mm *(n = 48)*									
Mean Target AA (%)									
2015	46.2	22.6	16.1	7.8	18.4	8.3	15.5	11.3	0.2
2016	46.2	22.5	16.2	7.6	18.5	9.5	14.6	11.1	0.2
% of Inst Making Changes to Targets									
Increased	*15*	*16*	*18*	*3*	*8*	*21*	*2*	*4*	*0*
Decreased	*8*	*9*	*12*	*9*	*10*	*0*	*17*	*10*	*0*
$500mm to $1bn *(n = 26)*									
Mean Target AA (%)									
2015	36.9	16.6	12.9	7.7	24.2	14.0	11.8	12.1	1.0
2016	37.5	17.0	12.6	7.4	24.1	15.1	11.6	11.2	0.4
% of Inst Making Changes to Targets									
Increased	*19*	*16*	*0*	*0*	*4*	*31*	*8*	*8*	*0*
Decreased	*0*	*0*	*0*	*0*	*19*	*8*	*8*	*23*	*8*
Over $1bn *(n = 44)*									
Mean Target AA (%)									
2015	34.9	15.9	11.6	8.6	21.5	16.8	10.3	14.9	1.6
2016	35.1	16.1	11.4	8.7	21.5	17.6	9.8	14.3	1.7
% of Inst Making Changes to Targets									
Increased	*18*	*15*	*0*	*9*	*25*	*25*	*5*	*9*	*9*
Decreased	*11*	*11*	*10*	*0*	*16*	*2*	*23*	*30*	*2*

Source: College and university data as reported to Cambridge Associates LLC.
Note: Asset sizes are based on June 30, 2016, data.

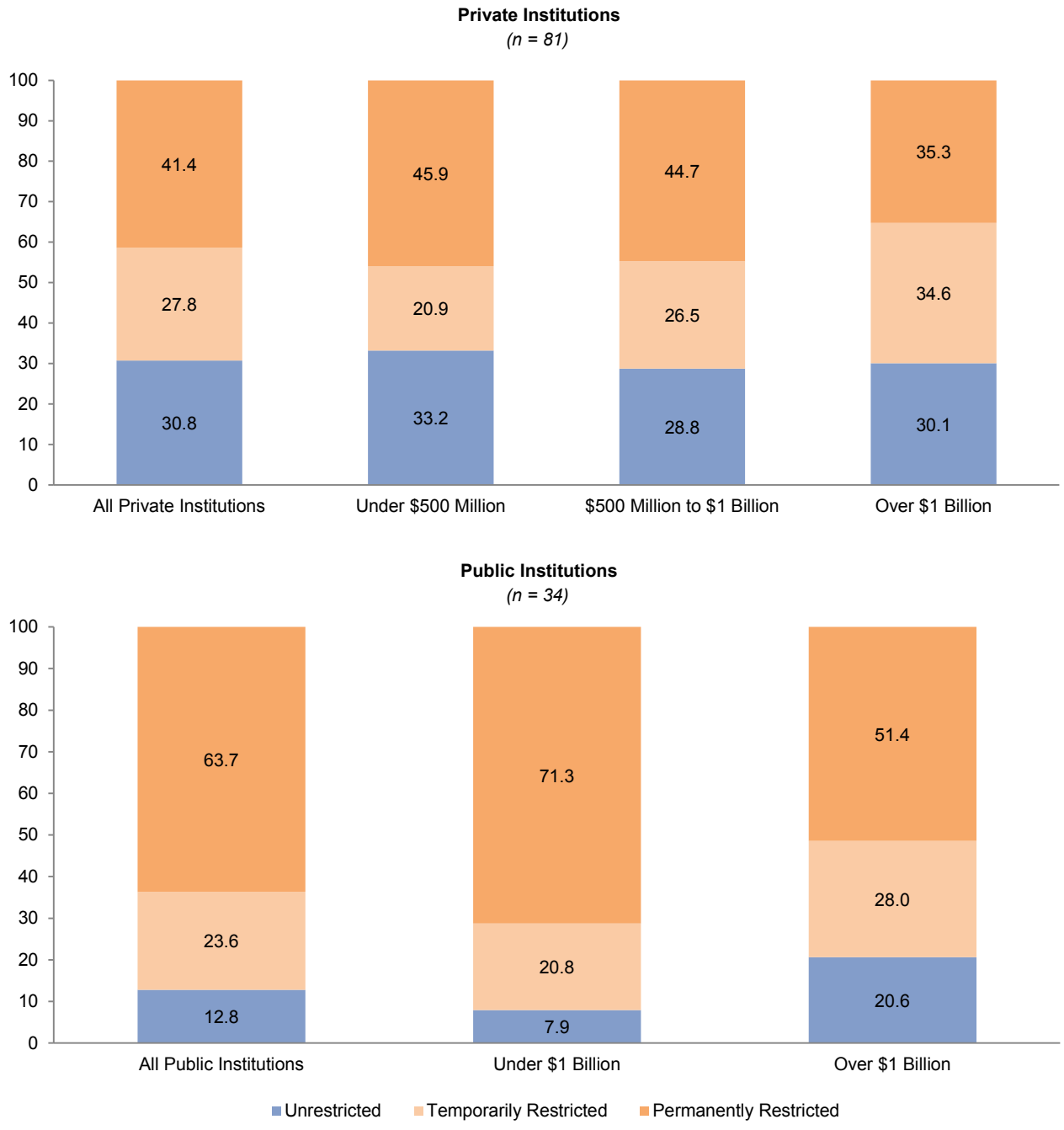
Endowment Asset Composition

While endowment asset composition by degree of restriction varies across participants, certain patterns emerge. On average, 41% of endowment assets at private institutions were classified as permanently restricted.[11] The proportion was much higher at public institutions, where 64% of endowment assets are permanently restricted (Figure 32).

[11] In this study, we use the Financial Accounting Standards Board (FASB) accounting categories. Some public institutions use private affiliated foundations to raise funds and manage their endowment assets and also report under FASB standards. Other public institutions use the Governmental Accounting Standard Board (GASB) accounting categories. Under GASB, "restricted–nonexpendable" is equivalent to FASB's "permanently restricted" and "restricted–expendable" is equivalent to "temporarily restricted."

Much of the disparity in endowment composition between private and public institutions can be attributed to the amount of recent fundraising relative to the overall size of the endowment. Given that the bulk of donor gifts tend to be restricted, institutions with a larger percentage of endowment from recent gifts tend to have a higher proportion of their endowment classified as permanently restricted. Figure 33 scales each institution's endowment to $100 in 2006 and tracks the average asset growth through the end of fiscal year 2016. Over the last decade, the average public institution has seen its endowment grow by

Figure 32. Classification of Endowment Funds
Equal-Weighted Means as of Fiscal Year End 2016



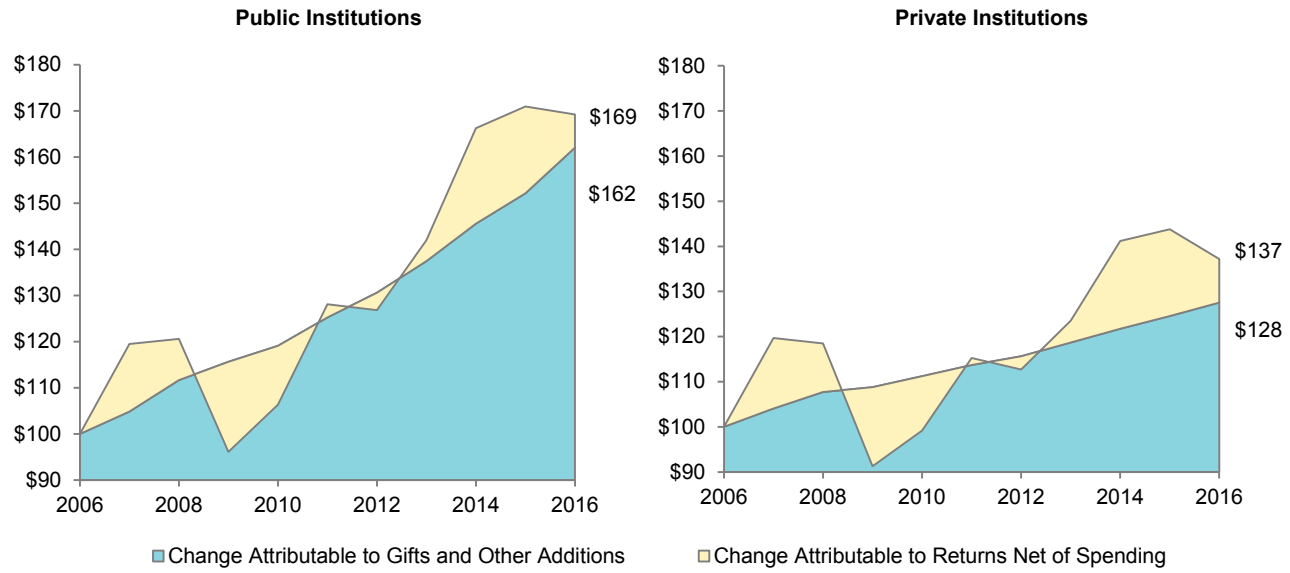
Source: College and university data as reported to Cambridge Associates LLC.
Note: Institutions grouped by fiscal year 2016 market value of endowment assets.

$69. In contrast, the average private institution's endowment grew by just $37. While investment performance net of spending was similar between the two groups, the amount of growth attributable to gifts and other additions at public institutions ($62) was more than double that of private institutions ($28).

Differences in endowment composition can also be related to the overall size of endowment assets. At both public and private institutions, endowments with smaller market values tend to have a higher proportion of permanently restricted assets compared to larger endowments (Figure 32). As detailed in Figure 3, larger endowments have posted higher historical returns than smaller endowments, resulting in more unspent endowment earnings that accrue to the temporarily restricted category. Since smaller endowments have accumulated fewer earnings, their permanently restricted category is proportionally greater when compared to larger endowments.

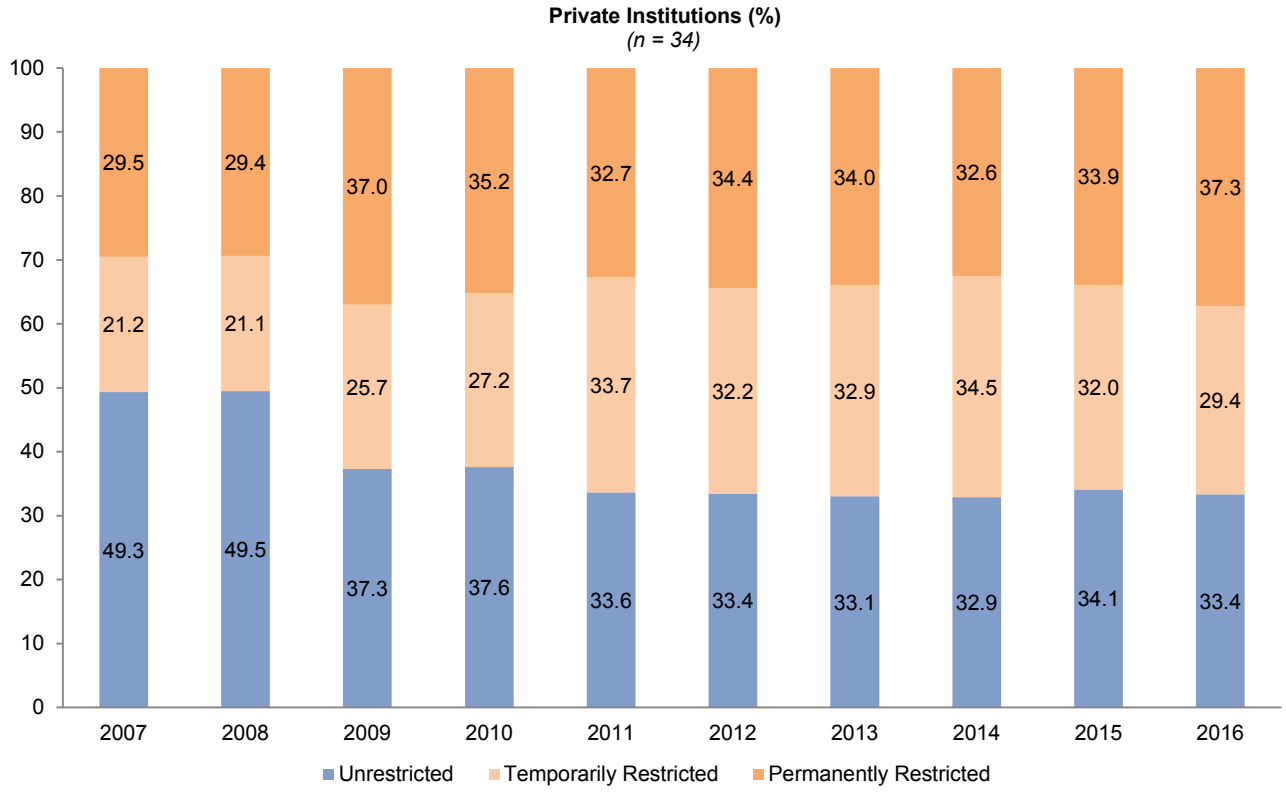
Over the last decade, there have been significant shifts in the average endowment composition at private institutions. The proportion of unrestricted assets declined at both larger and smaller endowments by 16 ppts (Figure 34). The decline was offset by nearly equal proportional increases to the other categories. Much of the shifts in endowment composition occurred after fiscal year 2008 and were mainly a result of the accounting changes mandated as states adopted the Uniform Prudent Management of Institutional Funds Act (UPMIFA). In addition, new donor contributions in 2009 likely contributed to a spike in the proportion of permanently restricted assets during a year in which existing endowment assets eroded substantially due to severe market declines.

Figure 33. Ten-Year Cumulative Change in Endowment Market Value
Years Ended June 30 • Base Year July 1, 2006 = $100



Source: College and university data as reported to Cambridge Associates LLC.
Notes: Analysis displays the average cumulative growth in endowments at public and private institutions over the last decade based on an initial $100 investment at the beginning of the period. Included are 28 public institutions and 68 private institutions that provided returns, effective spending rates, and endowment market values for each year from 2006 to 2016.

Figure 34. Trends in Classification of Endowment Funds: Private Institutions
Equal-Weighted Means as of Fiscal Year End



Institutions by Asset Size

Under $1 Billion
(n = 20)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	*Change (ppt) 2007–2016*
Unrestricted	49%	48%	38%	39%	36%	36%	35%	35%	35%	34%	*-16*
Temporarily Restricted	18%	18%	21%	22%	27%	25%	27%	30%	29%	26%	*7*
Permanently Restricted	32%	34%	41%	39%	36%	39%	38%	35%	36%	41%	*8*

Over $1 Billion
(n = 14)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	*Change (ppt) 2007–2016*
Unrestricted	49%	52%	36%	36%	30%	30%	30%	30%	33%	33%	*-16*
Temporarily Restricted	25%	26%	33%	34%	43%	42%	42%	41%	36%	34%	*9*
Permanently Restricted	26%	23%	31%	30%	28%	28%	29%	29%	30%	33%	*7*

Source: College and university data as reported to Cambridge Associates LLC
Note: Institutions grouped by fiscal year 2016 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, continue to allocate a significant portion of their portfolios to private investments.[12] The average allocation to private investments for all participants was 19.7%, while those with portfolios greater than $1 billion had an average allocation of 29.0% (Figure 27).

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. While 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 12.7% at the end of fiscal year 2016 (Figure 35). Predictably, institutions with larger asset sizes tend to have a higher ratio of uncalled capital commitments to the total LTIP value. For those with asset sizes greater than $1 billion, uncalled capital commitments represented an average of 17.6% of their total LTIP value (ranging from 7.5% to 27.8%, excluding outliers).

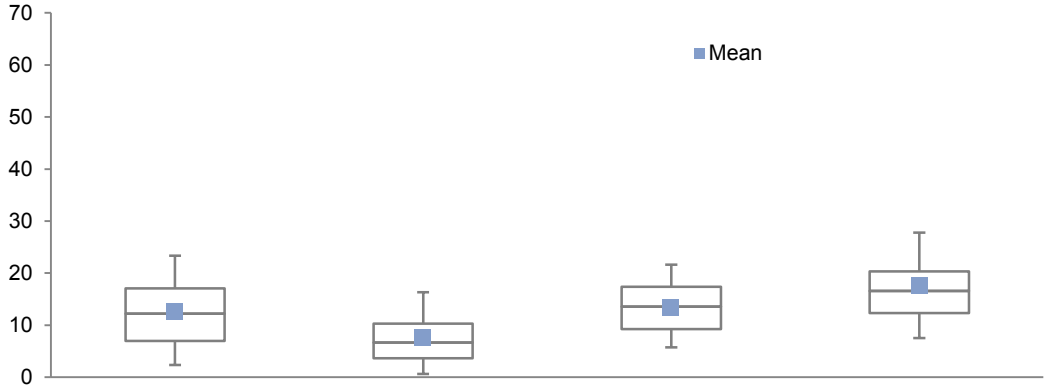
Larger portfolios also tend to have a higher ratio of uncalled capital commitments to the LTIP's total liquid assets, which exclude hedge funds and private investments. For institutions with asset sizes greater than $1 billion, uncalled capital commitments represented an average of 31.9% of their total liquid assets. For institutions with asset sizes under $500 million, the average was 13.1% (Figure 35).

Of the participants that have provided consistent historical data, approximately 90% (89 of 99) 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 73%. Over the same five-year period, the median percent change in the market value of the LTIP (21%) and the portfolio's liquid assets (32%) was substantially lower. As a result, both of the aforementioned ratios increased for most colleges and universities. The trends in the median ratios for all institutions and the three asset size groups are displayed in Figure 36.

[12] Private investments include private equity, venture capital, private distressed securities, private real estate, private oil & gas/natural resources, and timber.

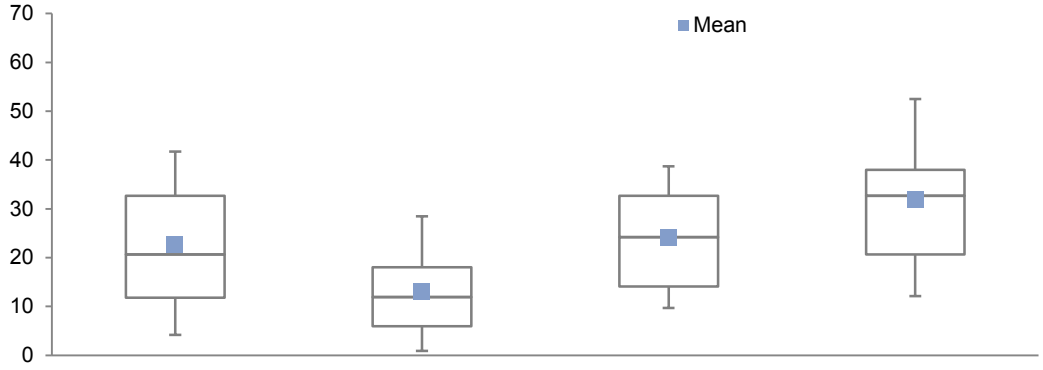
Figure 35. Uncalled Capital Committed to Private Investment Funds
As of June 30, 2016 • Percent (%)

Uncalled Capital Commitments as a Percentage of the Total LTIP



	All Institutions	Under $500 Million	$500 Million to $1 Billion	Over $1 Billion
5th Percentile	23.3	16.3	21.6	27.8
25th Percentile	17.1	10.3	17.4	20.3
Median	12.2	6.7	13.6	16.6
75th Percentile	7.0	3.7	9.3	12.3
95th Percentile	2.4	0.6	5.8	7.5
Mean	12.7	7.6	13.4	17.6
n	*135*	*53*	*32*	*50*

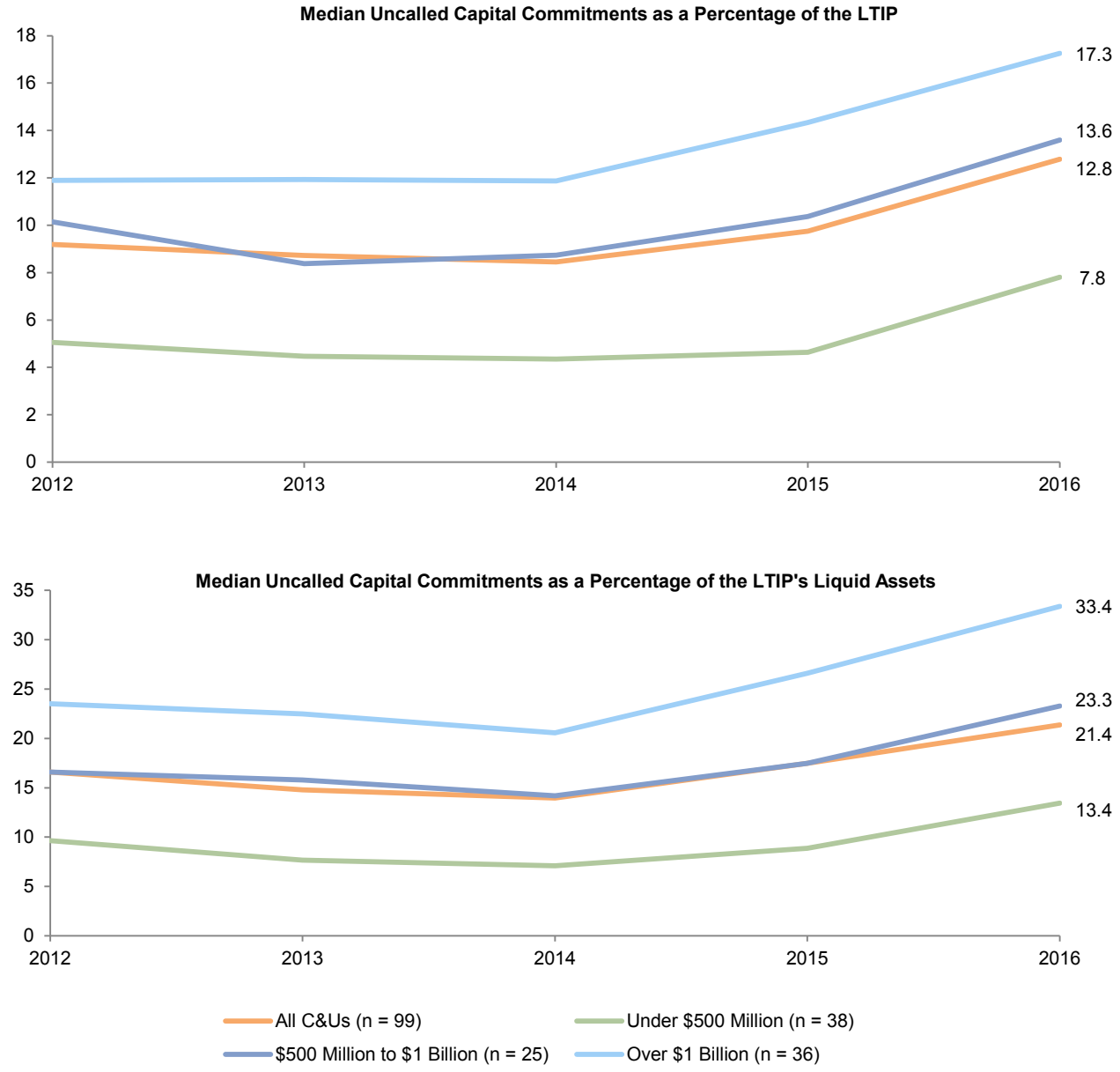
Uncalled Capital Commitments as a Percentage of the LTIP's Liquid Assets



	All Institutions	Under $500 Million	$500 Million to $1 Billion	Over $1 Billion
5th Percentile	41.7	28.5	38.7	52.5
25th Percentile	32.7	18.0	32.6	38.0
Median	20.7	11.9	24.2	32.6
75th Percentile	11.8	5.9	14.1	20.7
95th Percentile	4.2	0.9	9.7	12.1
Mean	22.7	13.1	24.1	31.9
n	*135*	*53*	*32*	*50*

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 36. Trend in Median Uncalled Capital Commitments to Private Investment Funds
Years Ended June 30 • Percent (%)



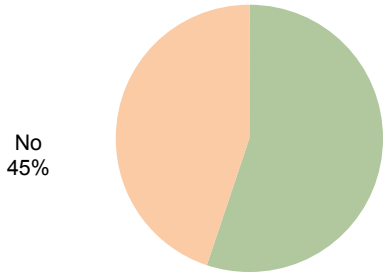
Source: College and university data as reported to Cambridge Associates LLC.
Notes: Uncalled capital is the amount committed, but not yet paid in, to private investment funds. Liquid assets consist of all LTIP assets excluding hedge funds and private investments. Private investments include non-venture 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 rise, the potential liquidity risks associated with funding future capitals can increase as well. In recent years, these risks have been mitigated for most institutions due to the self-funding nature of private investment program cash flows. However, in 2016, just slightly over half of participants (55%) reported that their private investment programs were cash flow positive, meaning the amount of fund distributions was higher than paid-in capital calls (Figure 37). 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 37. Private Investment Program Cash Flow
As of June 30, 2016 • n = 136

Was Your Private Investment Program Cash Flow Positive in 2016?

By Percentage of Institutions



By Asset Size

	Yes	No
Under $500 Million	52%	48%
n	*28*	*26*
$500 Million to $1 Billion	55%	45%
n	*17*	*14*
Over $1 Billion	59%	41%
n	*30*	*21*

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 2016.

Investment Management Structures

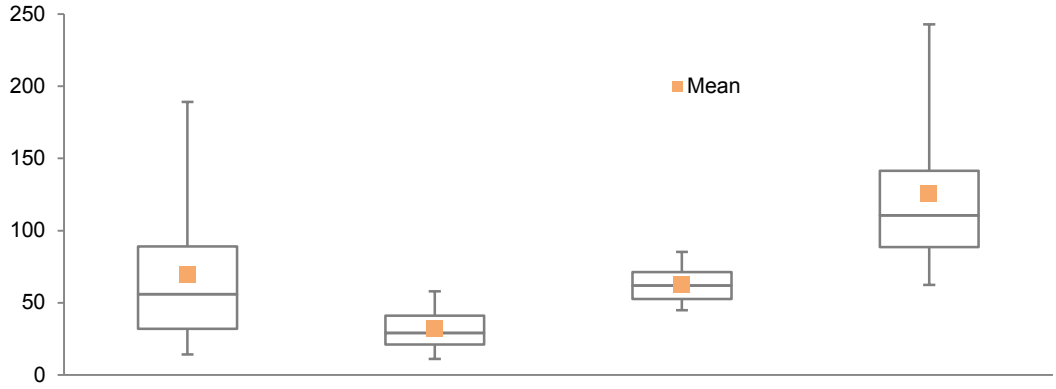
Number of External Managers

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 126 external investment managers in 2016 (Figure 38). In contrast, mid-sized portfolios had an average of 62 managers, while smaller portfolios reported even fewer (32). The number of investment vehicles is higher than the number of managers for each peer group, mainly because of the allocation of capital across multiple funds of the same investment manager in private investment asset classes. For colleges and universities 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 39).

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 (41) is about double the number used at the 75th percentile (21) (Figure 38). For portfolios over $1 billion, there are 243 managers employed at the 5th percentile compared to just 62 at the 95th percentile. Much of the variation can be attributed to the management of alternative asset classes. As Figure 40 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 41.

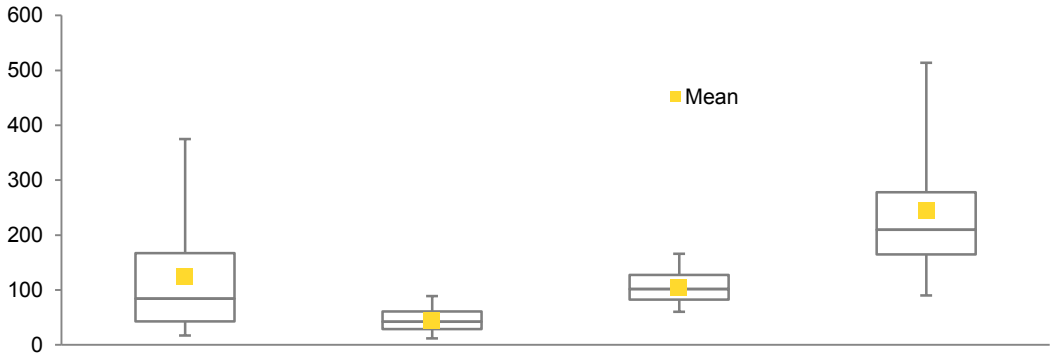
Figure 38. Number of External Managers and Investment Vehicles
As of June 30, 2016

External Managers



	All Institutions	Under $500 Million	$500 Million to $1 Billion	Over $1 Billion
5th Percentile	189	58	85	243
25th Percentile	89	41	71	142
Median	56	29	62	111
75th Percentile	32	21	53	89
95th Percentile	14	11	45	62
Mean	70	32	62	126
n	*145*	*65*	*32*	*48*

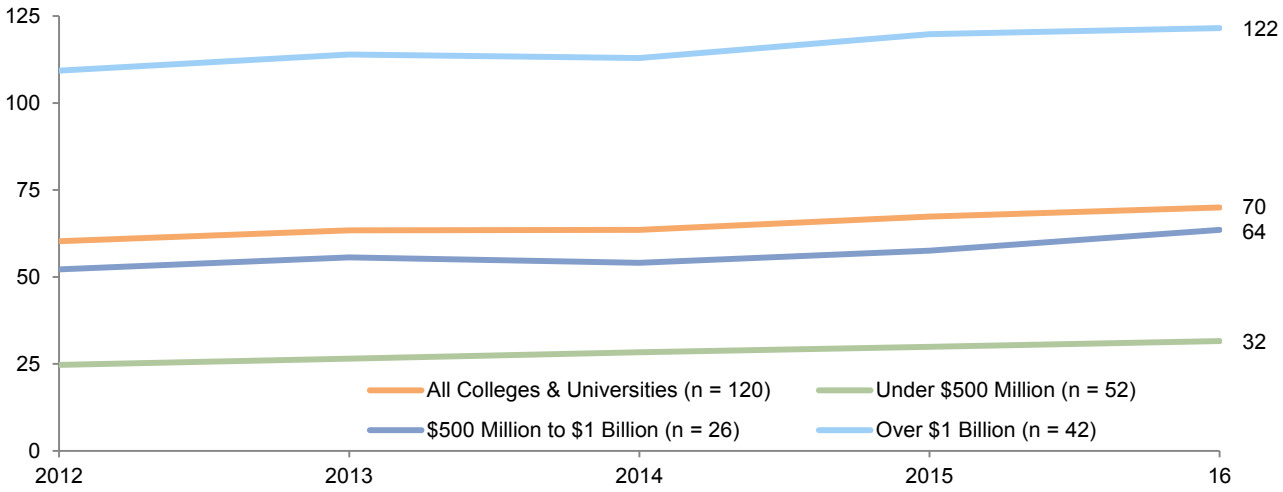
Investment Vehicles



	All Institutions	Under $500 Million	$500 Million to $1 Billion	Over $1 Billion
5th Percentile	375	89	166	514
25th Percentile	167	61	128	278
Median	84	42	102	210
75th Percentile	43	29	83	165
95th Percentile	17	12	61	90
Mean	124	45	104	244
n	*145*	*65*	*32*	*48*

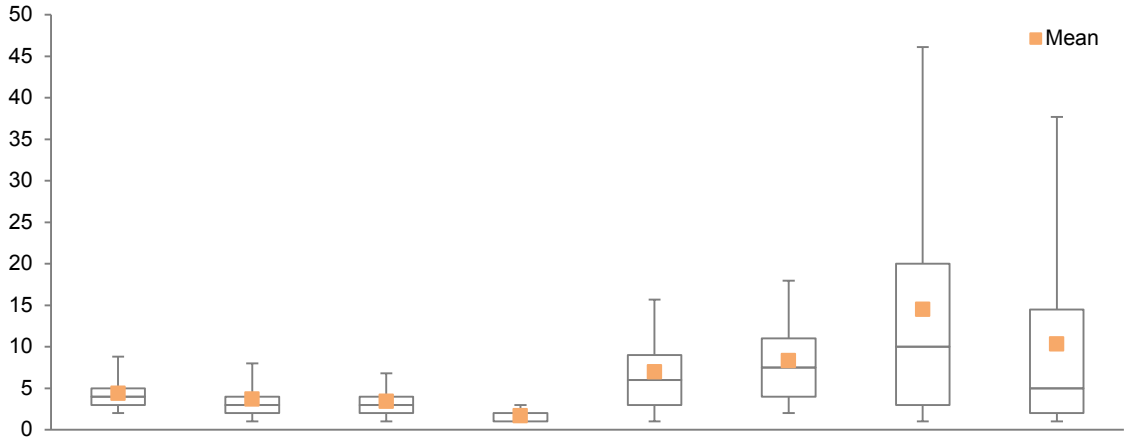
Source: College and university data as reported to Cambridge Associates LLC.
Note: Funds-of-funds are counted as one separate investment manager and investment vehicle.

Figure 39. Trend in Number of Average External Managers
2012–16



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

Figure 40. Dispersion in Number of Managers for Selected Asset Classes
As of June 30, 2016



	US Equity	DM ex US Equity	Emerging Markets Equity	US Bonds	Long/Short Hedge Funds	Ab Return Hedge Funds	Private Equity	Venture Capital
5th Percentile	9	8	7	3	16	18	46	38
25th Percentile	5	4	4	2	9	11	20	15
Median	4	3	3	1	6	8	10	5
75th Percentile	3	2	2	1	3	4	3	2
95th Percentile	2	1	1	1	1	2	1	1
Mean	4	4	3	2	7	8	15	10
n	*145*	*141*	*145*	*128*	*124*	*142*	*130*	*127*

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 41. Externally Managed Investment Pool Holdings by Strategy
As of June 30, 2016

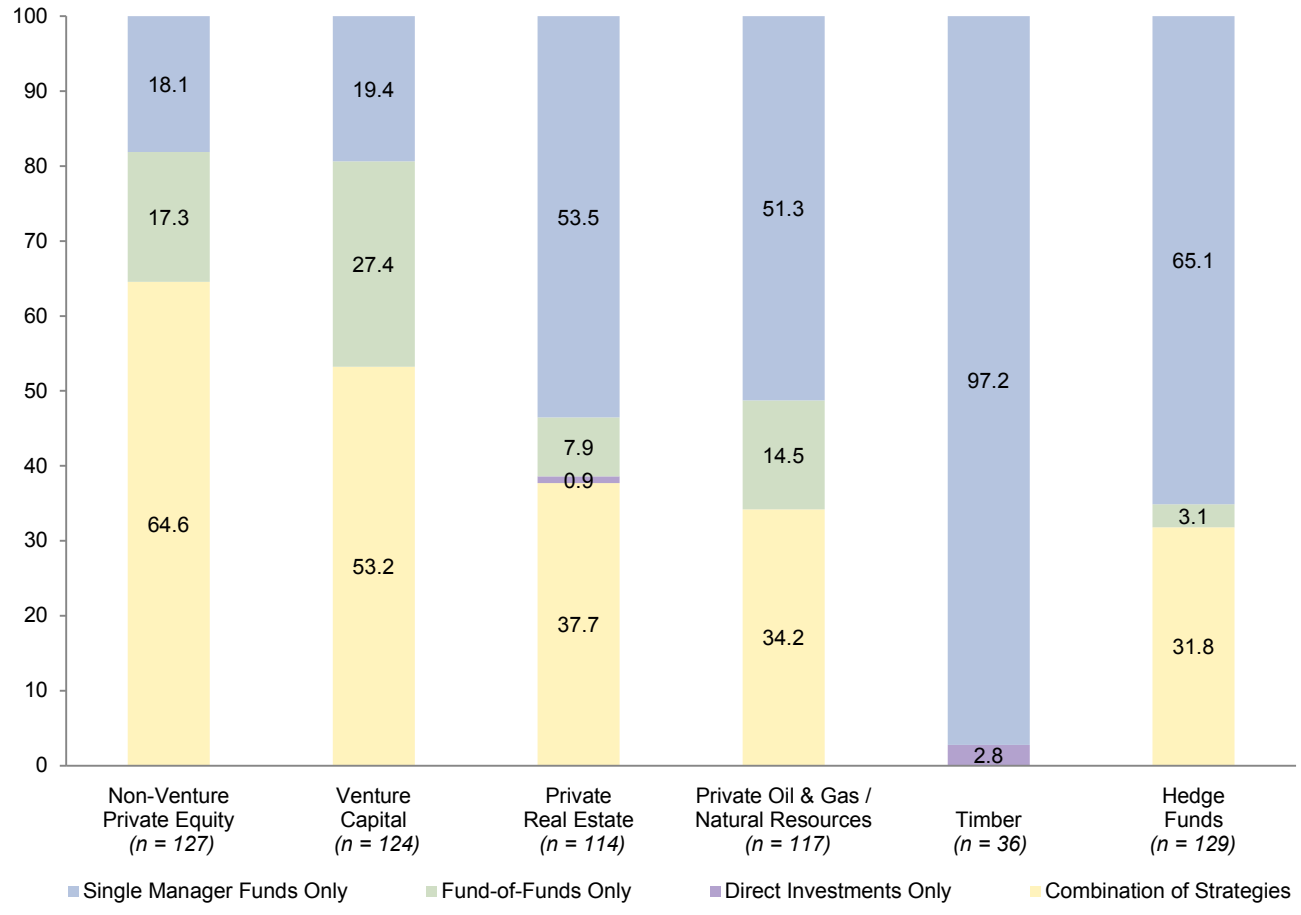
	Under $500 Million			$500 Million to $1 Billion			Over $1 Billion		
	Average Number of			Average Number of			Average Number of		
Strategy	Managers	Vehicles	*n*	Managers	Vehicles	*n*	Managers	Vehicles	*n*
Traditional Equity									
Global Equity	2	2	*30*	2	2	*17*	3	3	*27*
US Equity	3	4	*65*	4	4	*32*	6	7	*48*
Developed ex US Equity	3	3	*64*	3	4	*31*	5	6	*46*
Emerging Markets Equity	2	3	*65*	3	3	*32*	5	6	*48*
Traditional Bonds									
Global Bonds	1	1	*28*	1	1	*12*	2	2	*13*
US Bonds	2	2	*63*	2	2	*26*	2	2	*39*
Developed ex US Bonds	--	--	*0*	1	2	*4*	2	2	*5*
Emerging Markets Bonds	1	1	*11*	1	1	*3*	1	1	*9*
High-Yield Bonds	1	1	*12*	1	1	*1*	2	3	*11*
Hedge Funds									
Long/Short Hedge Funds	4	4	*51*	7	7	*29*	11	12	*44*
Absolute Return (ex Dist Securities)	6	6	*62*	9	10	*32*	12	14	*48*
Distressed Securities									
Distressed (Hedge Fund Structure)	2	2	*30*	2	3	*21*	3	4	*34*
Distressed (Private Equity Structure)	2	3	*37*	5	8	*27*	7	13	*35*
Private Investments									
Non-Venture Private Equity	4	7	*50*	11	22	*32*	28	57	*48*
Venture Capital	2	5	*50*	7	17	*30*	21	59	*47*
Other Private Investments	2	3	*37*	2	2	*19*	5	8	*18*
Real Assets & ILBs									
Private Real Estate	2	4	*37*	6	10	*31*	16	33	*48*
Public Real Estate	1	1	*14*	1	1	*10*	1	1	*11*
Commodities	1	1	*18*	1	2	*9*	2	2	*17*
Inflation-Linked Bonds (TIPS)	1	1	*9*	1	1	*1*	1	1	*9*
Private Oil & Gas / Natural Resources	3	4	*40*	5	10	*32*	12	28	*48*
Timber	1	1	*3*	1	2	*11*	2	3	*25*
Public Energy/Natural Resources	2	2	*57*	2	2	*23*	2	3	*23*
Diversified (Multi-Strategy) RA	1	1	*18*	1	1	*1*	1	1	*2*
Cash (Dedicated Cash Managers Only)	2	2	*33*	1	2	*18*	2	2	*28*
Tactical Asset Allocation	2	2	*8*	1	1	*1*	1	1	*4*
Other	--	--	*0*	2	3	*3*	3	6	*4*

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 and average number of vehicles. 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 and vehicles.

Asset Class Implementation

Alternative Assets. The majority of participants (65%) have constructed a hedge fund program that solely uses single manager funds, while just 3% rely only on funds-of-funds. The remaining participants (32%) employ a combination of single manager funds and funds-of-funds (Figure 42). Even those that use a combination of strategies tend to favor single manager funds, with an average of 71% being directed to these types of managers. Implementation practices also vary across private investment asset classes. The use of a combination of strategies was most common for the implementation of private equity and venture capital portfolios. A sole reliance upon single manager funds was most prevalent in real estate (54%) and private energy/natural resources (51%). Smaller portfolios generally employ more funds-of-funds managers than larger portfolios in all alternative asset classes, which is not surprising given the typically high minimum investments for alternative asset funds.

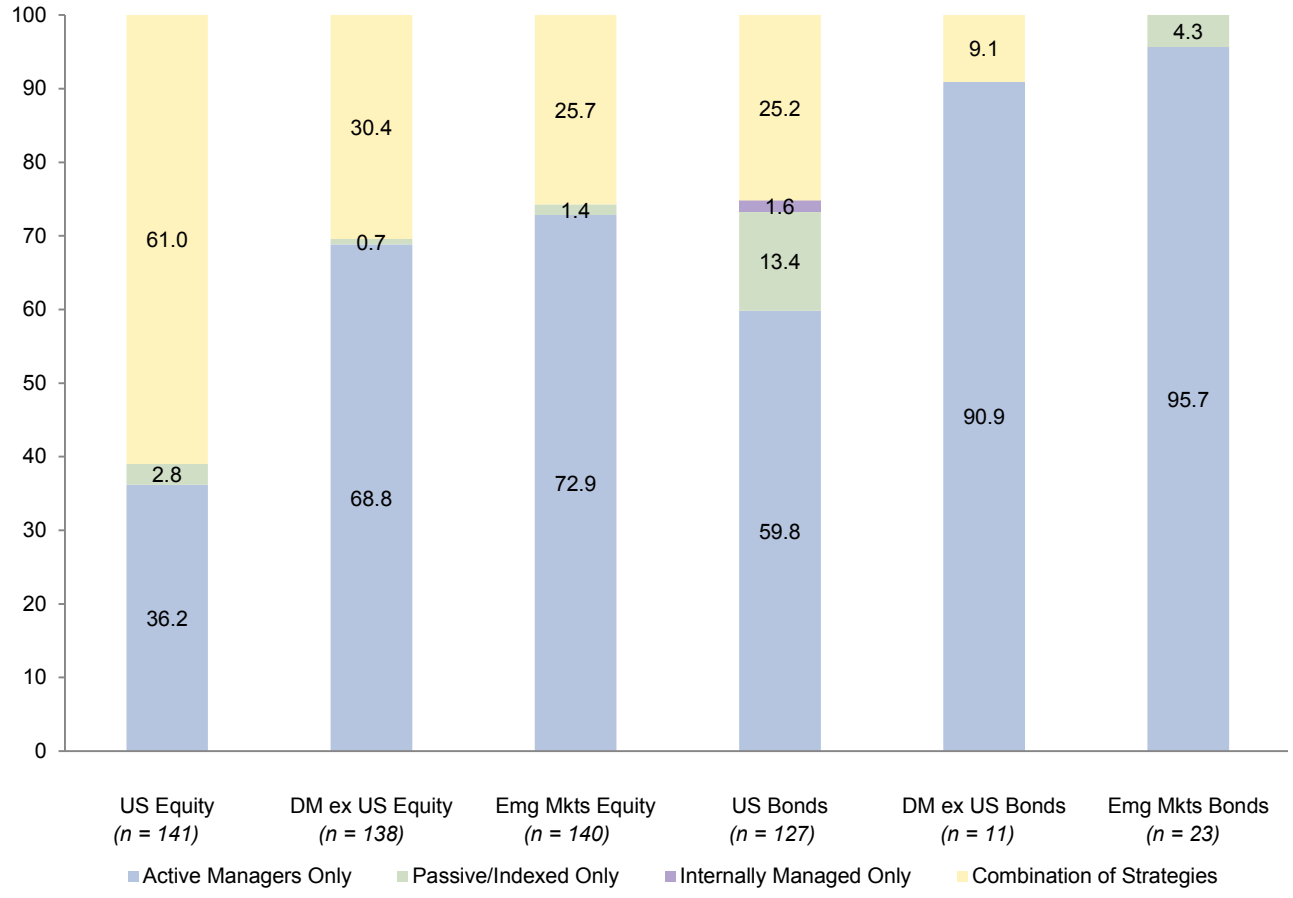
Figure 42. Portfolio Implementation: Private Investments and Hedge Funds
As of June 30, 2016 • Percent (%)



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 college and universities that provided implementation data on traditional asset classes, 36% used active managers for all of their US equity allocation while most (61%) use a combination of active and passive implementation (Figure 43). Among those that use a combination of strategies, 65% 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 69% and 73% of respondents, respectively. For bonds, a majority of respondents used only active managers for their total allocation to US markets (60%), developed markets ex US (91%), and emerging markets (96%).

Figure 43. Portfolio Implementation: Traditional Equities and Bonds
As of June 30, 2016 • Percent (%)



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.

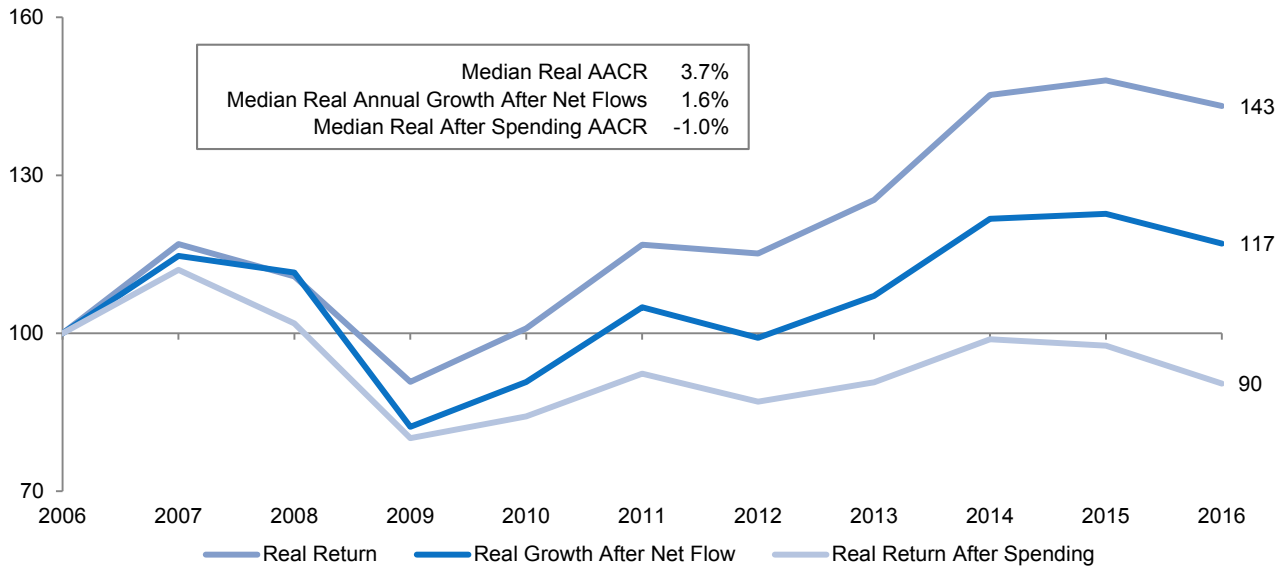
Payout from the Long-Term Investment Portfolio

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 44 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 2006, the portfolio would have grown to $143 in real dollars by the end of fiscal year 2016. After deducting the annual endowment spending policy distribution from real investment performance, the investment would have fallen to $90, eroding purchasing power by nearly 10%. 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.

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 17% 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

Figure 44. Cumulative Dollar Growth After Inflation, Net Flows, and Spending
Years Ended June 30 • Base Year 2006 = $100 • n = 95



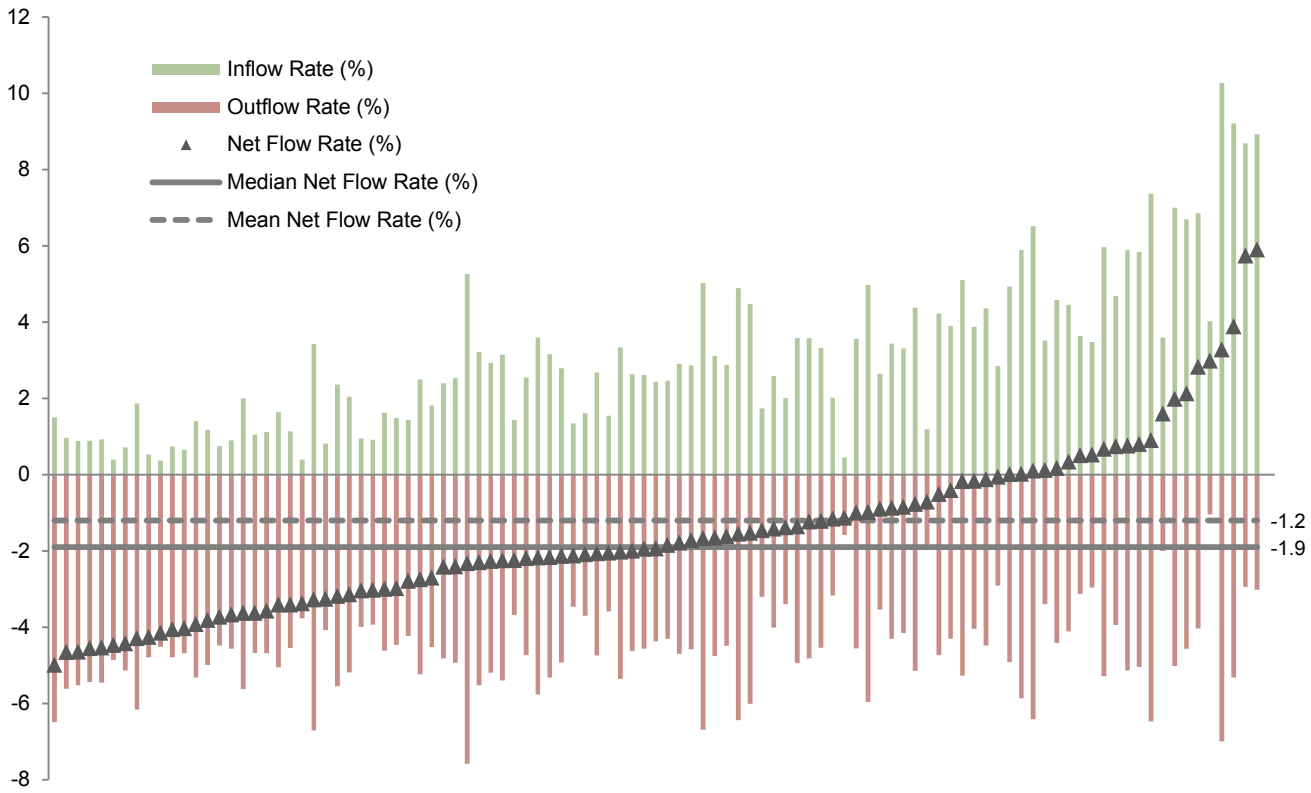
Source: College and university data as reported to Cambridge Associates LLC.
Notes: To limit the impact of outliers, median data are used for each statistic in this exhibit. The median real annual growth after net flows represents the actual growth in the long-term investment portfolio's market value adjusted for inflation.

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 mean (-1.2%) and median (-1.9%) net flow rates for participants in fiscal year 2016 were negative, meaning the amount of withdrawals from the portfolio surpassed the amount of additions for the majority of respondents (Figure 45). In addition, real investment performance for 2016 was negative for almost all institutions. As a result, the vast majority of participants (151 of 161) saw the real market value of their LTIP decline over the fiscal year.

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 out*flow) for each of the ten years (Figure 46). The median *net out*flow rate in fiscal year 2016 was -2.1%, slightly lower than the net outflow rate from fiscal year 2015 (-2.3%).

Figure 45. Net Flow Rate Comparison
Fiscal Year 2016 • n = 104



Source: College and university data as reported to Cambridge Associates LLC.
Notes: Due to being an extreme outlier, one institution is not displayed on the graph but is still included in the mean and median. See Appendix Exhibit 9 for a listing of the net flow rates for all institutions.

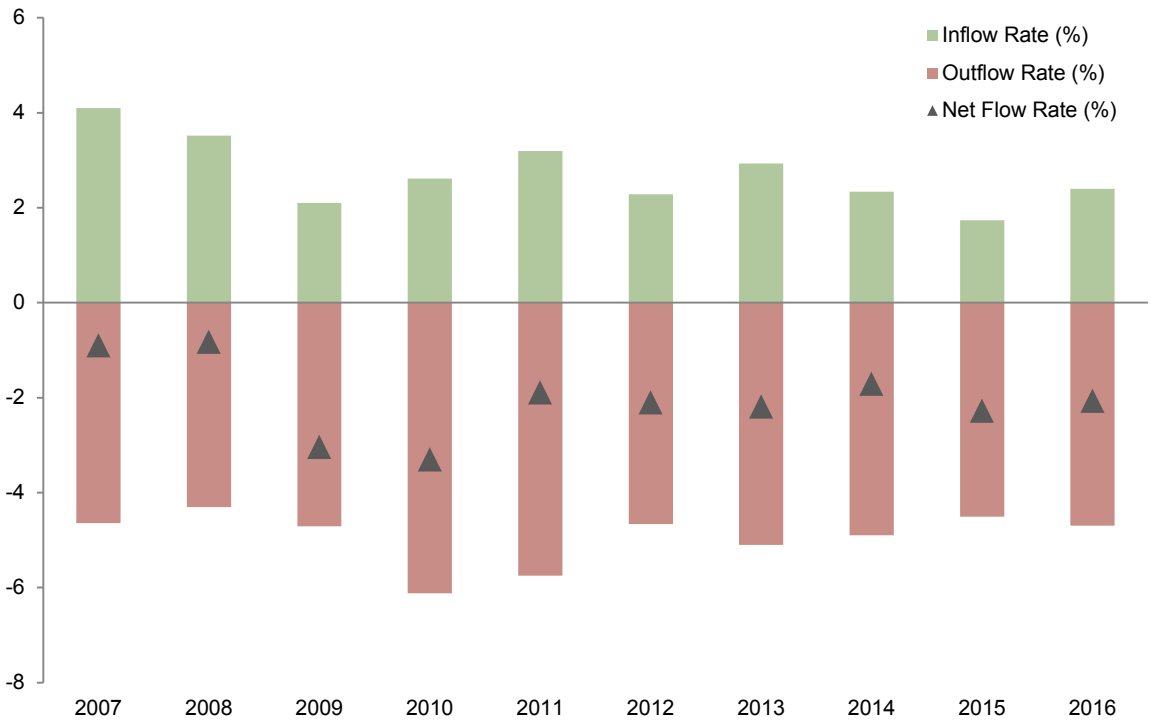
Inflows. The current low return environment puts pressure on institutions to keep fundraising efforts a top priority. Endowment gifts typically represent the bulk of new funds that an LTIP receives. On average, endowment gifts represented 79% of total inflows in fiscal year 2016 among participants. The inflow rate captures these gifts and other types of additions to the portfolio for the fiscal year as a percentage of the LTIP's beginning year market value.[13] For the constant group of institutions in Figure 46, the median inflow rate in fiscal year 2016 (2.4%) was the sixth highest of the last decade.

Outflows. The vast majority of outflows for institutions consist of distributions determined by the endowment spending rule. On average, these distributions represented 91% of total outflows from the LTIP in fiscal year 2016.[14] For the constant group of institutions in Figure 46, the median total outflow rate in fiscal year 2015 (-4.7%) was the fifth lowest of the last decade.

[13] Other types of additions can include reinvested operating surpluses, capital campaign funds, proceeds from non-portfolio asset sales, and other various types of inflows.

[14] Of the remaining outflows, 5% consisted of recurring annual appropriations to cover administrative costs, investment oversight costs, and other types of expenses, while 4% consisted of special one-time appropriations.

Figure 46. Historical Median Net Flow Rate
Fiscal Years 2007–2016 • n = 29



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Outflow Rate	-4.6	-4.3	-4.7	-6.1	-5.7	-4.7	-5.1	-4.9	-4.5	-4.7
Inflow Rate	4.1	3.5	2.1	2.6	3.2	2.3	2.9	2.3	1.7	2.4
Net Flow Rate	-0.9	-0.8	-3.0	-3.3	-1.9	-2.1	-2.2	-1.7	-2.3	-2.1

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.

Spending Policies

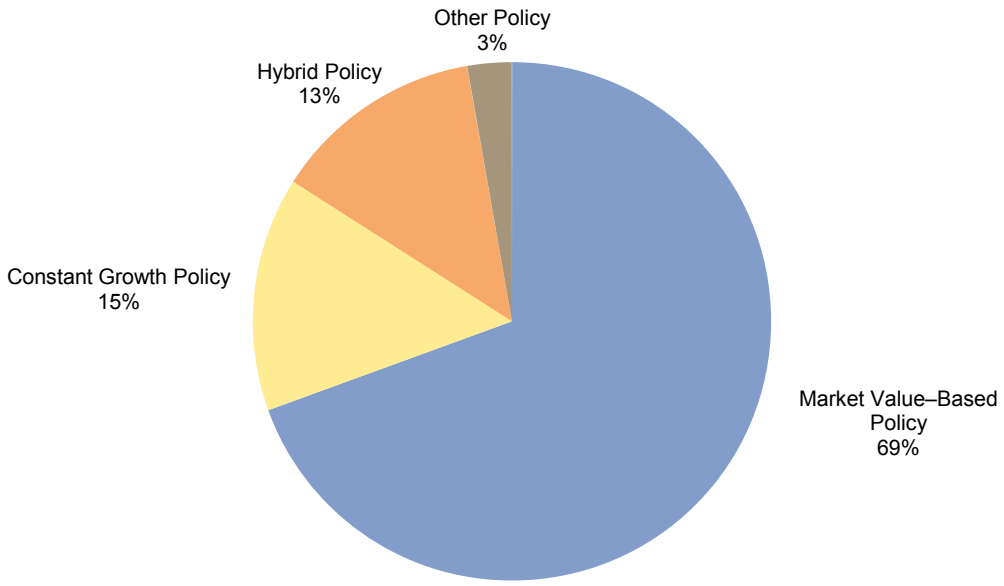
An institution's spending policy serves as a bridge that links the LTIP and the enterprise. The spending policy should be designed to balance the needs of current and future generations of stakeholders, with the goals of providing appropriate levels of support to operations and preserving, or even growing, endowment purchasing power.[15]

The majority (69%) 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 47). This rule type emphasizes purchasing power preservation by linking the spending distribution amount directly to the endowment's market value.

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. While the current low return environment is spurring many institutions to reevaluate their spending policies, most respondents that use this rule type have maintained the same target spending rate over the last several years. Approximately 85% of institutions left their target rate unchanged in fiscal year 2016 compared to 2015 (Figure 48). Looking back further, over the last five years, 68% of institutions have made no changes to their target spending rate.

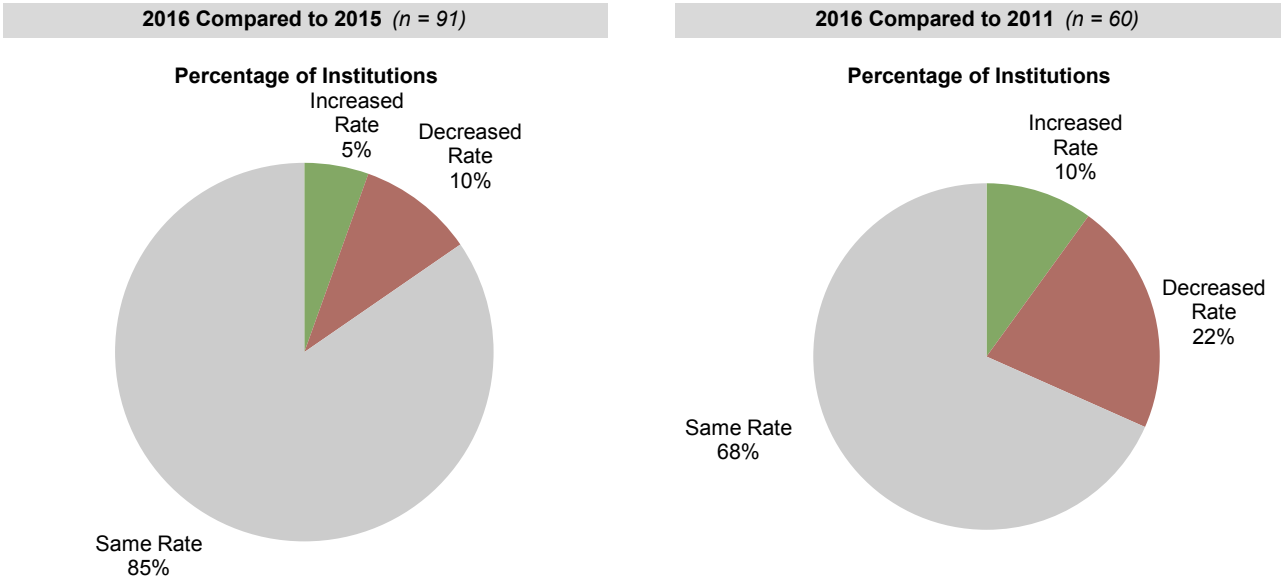
[15] For a more in-depth discussion on this topic please see William Prout et al., "Spending Policy Practices," Cambridge Associates Research Report, 2016.

Figure 47. Spending Policy Types
Fiscal Year 2016 • n = 144



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

Figure 48. Changes in Target Spending Rates for Market Value–Based Spending Policies
2016 vs 2015 and 2011



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. Graphs reflect 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 2015 or 2011. If a range was provided, the target spending rate was calculated using the midpoint of the range.

The next most common spending rule type is the constant growth rule, which was used by 15% of institutions. 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. While 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 13% of institutions. 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.

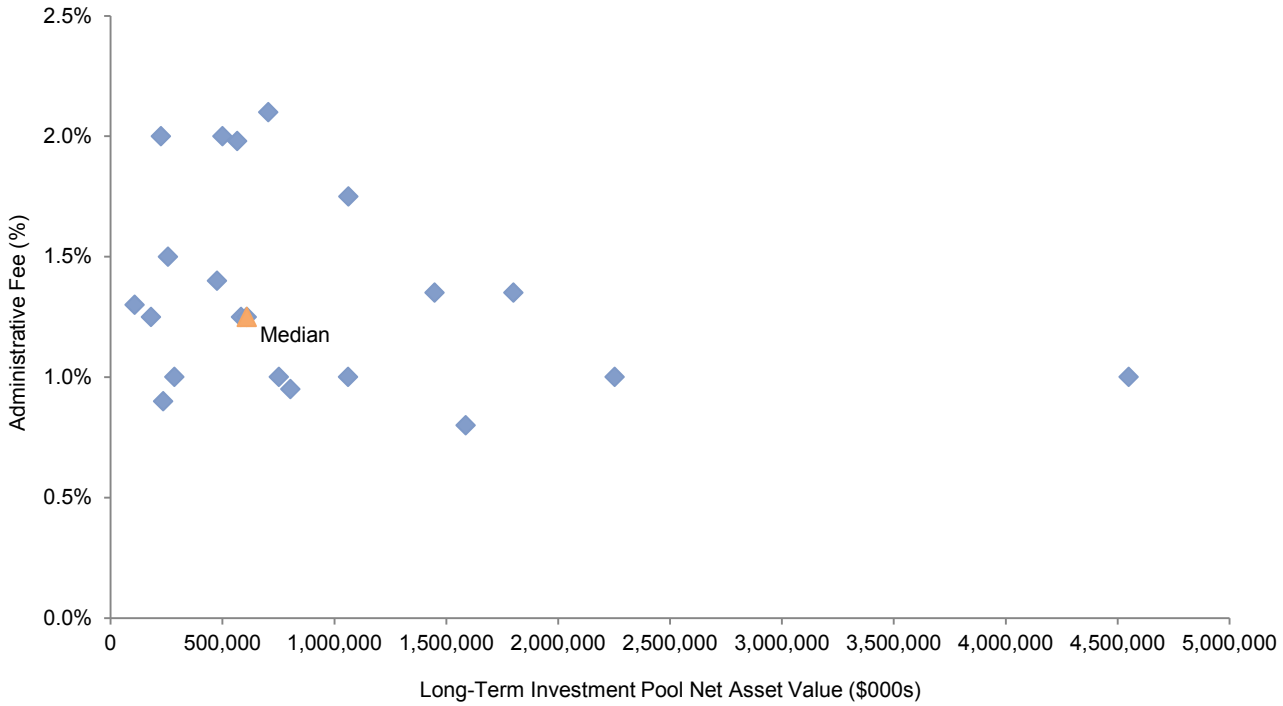
Administrative Fees for University-Affiliated Foundations

Of the 47 public university respondents, 27 were an affiliated foundation of a university or provided data on behalf of an affiliated foundation. 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 shows that as asset size increases the total administrative fee charged against assets decreases (Figure 49).

The median administrative fee rate for the 21 institutions that provided data was 1.25% of assets under management.

Figure 49. Administrative Fees of University-Affiliated Foundations
Fiscal Year 2016 • n = 21

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.



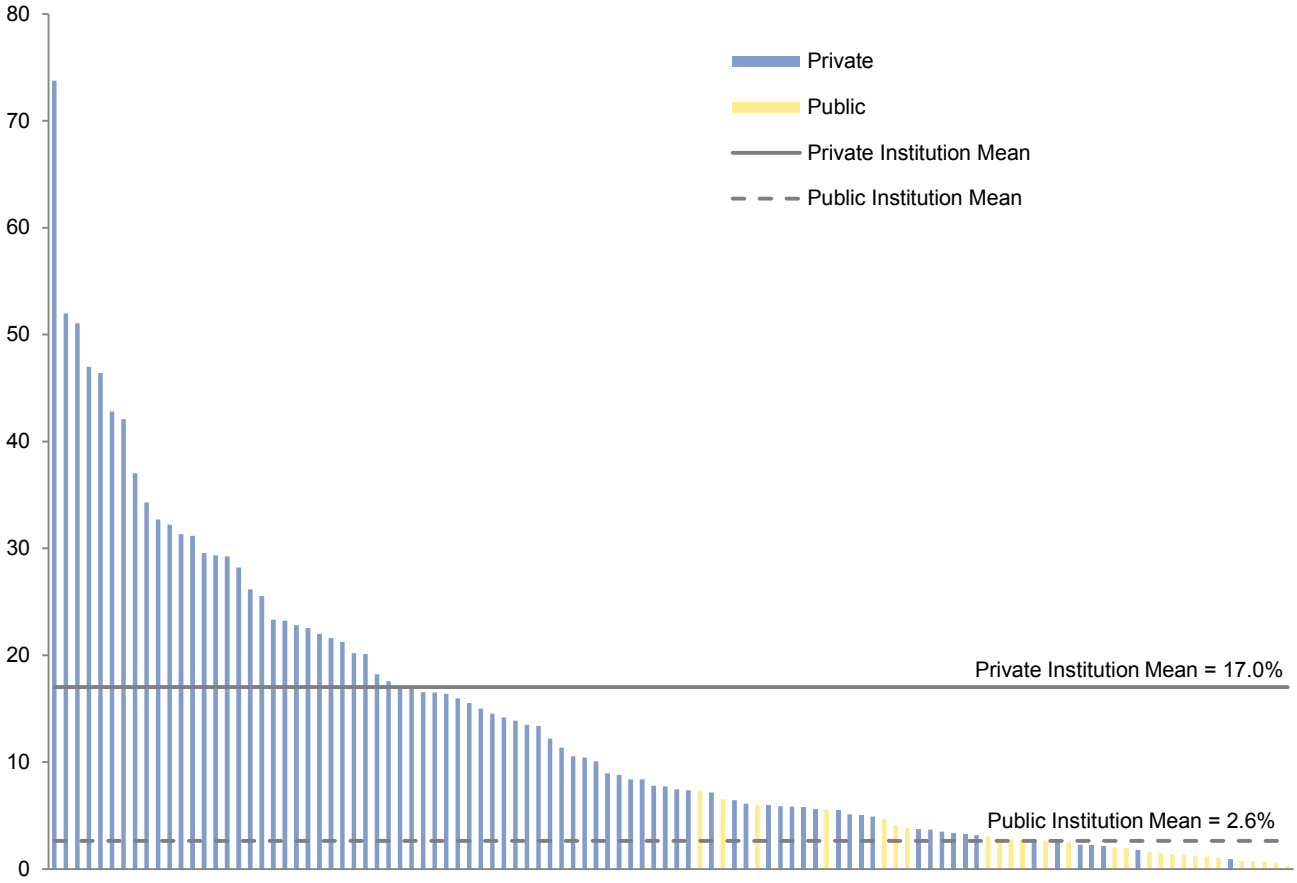
Source: College and university data as reported to Cambridge Associates LLC.
Note: The median marker is displayed where the median administrative fee for fiscal year 2016 intersects with the median LTIP market value as of June 30, 2016.

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 27 public institutions that provided data, support from the LTIP as a percentage of the total operating expenses averaged just 2.6% in fiscal year 2016 (Figure 50). Average support from the LTIP for private institutions was 17.0%.

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 51). 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 20.6%

Figure 50. Long-Term Investment Portfolio (LTIP) Support of Operations: All Colleges and Universities
Fiscal Year 2016 • n = 108

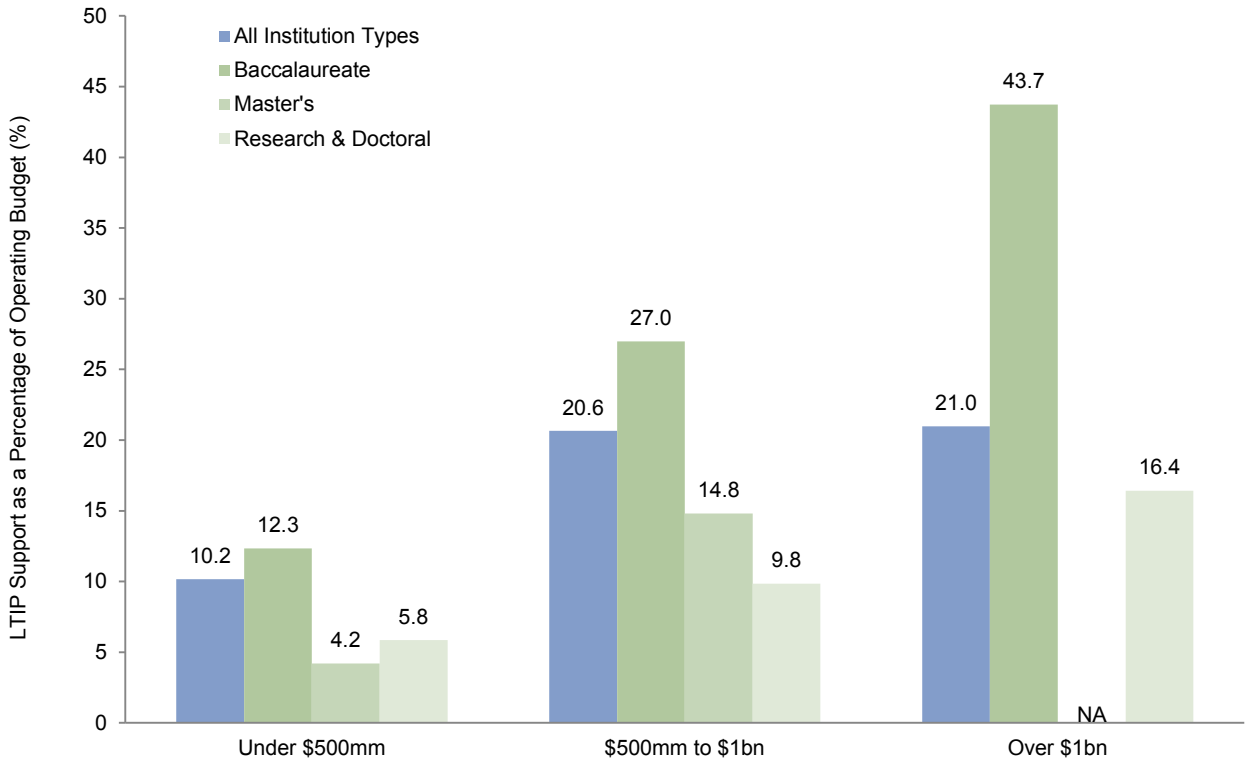


Source: College and university data as reported to Cambridge Associates LLC.
Note: LTIP support of operations is the proportion of the operating budget that is funded from LTIP payout.

for institutions with assets between $500 million and $1 billion and 21.0% for those with assets over $1 billion.

LTIP reliance also varies within the private institution peer group depending on the type of institution. The business model of baccalaureate colleges is focused almost exclusively on providing instruction and other services to students. Private baccalaureate colleges in this study tend to have the greatest reliance on support from the LTIP. In fiscal year 2016, the average level of LTIP support was 22.9% for these institutions. Research and doctoral universities have more complex and diversified enterprises. 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 (14.6%). While average reliance on the LTIP was just 6.8% for master's colleges and universities, the vast majority of these institutions (12 of 15) have asset sizes less than $500 million. ■

Figure 51. Long-Term Investment Portfolio (LTIP) Support of Operations: Private College and Universities
Fiscal Year 2016 • n = 78



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.

Data Collection and Results

This report includes data for 161 colleges and universities. Twenty 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, 2016. The notation of *n* denotes the number of institutions included in each analysis.

In Exhibits 12, 13, and 19, asset classes are represented by the following benchmark indexes: US equity, Russell 3000®; developed markets ex US equity, MSCI EAFE; emerging markets equity, MSCI Emerging Markets; US bonds, Bloomberg Barclays Government/Credit Bond Index; developed markets ex US bonds, Citigroup Non-US Dollar World Government Bond Index; emerging markets bonds, JP Morgan Emerging Markets Bond Index; high-yield bonds, Citigroup High-Yield Market Index; long/short hedge funds, HFRI Equity Hedge; absolute return hedge funds, HFRI Fund of Funds Diversified Index; distressed securities (hedge fund structure), HFRI Event-Driven Distressed/Restructuring Index; distressed securities (private equity structure), Cambridge Associates LLC US Distressed Securities Index®; venture capital, Cambridge Associates LLC US Venture Capital Index®; non-venture private equity, Cambridge Associates LLC US Private Equity Index®; other private investments, blend of 50% Cambridge Associates LLC US Venture Capital Index® and 50% Cambridge Associates LLC US Private Equity Index®; private real estate, Cambridge Associates LLC Real Estate Index; public real estate, FTSE® NAREIT Index; commodities, Bloomberg Commodity Total Return Index; inflation-linked bonds, Bloomberg Barclays Capital US TIPS Index; private oil & gas/natural resources, Cambridge Associates LLC Private Natural Resources Index; timber, NCREIF Timberland Index; public energy/natural resources, MSCI World Natural Resources Index; and cash & equivalents, BofA Merrill Lynch 91-Day Treasury Bill Index.

Calculation of the Real Rate of Return

The real, or inflation-adjusted, rate of return for a given investment is calculated by dividing the nominal total return by the appropriate deflator for the same time period. Throughout the report, the deflation measure used for this purpose is the Consumer Price Index. Note that simply subtracting the deflator from the nominal total return does not result in an accurate computation of real total return. The formula is:

$$\frac{1 + \text{Nominal Total Return}}{1 + \text{CPI-U}} - 1 = \text{Real Total Return}$$

Calculation of the Return After Spending

The rate of return after spending for a given investment is calculated by dividing the total return by the effective spending rate for the time period. The effective spending rate is the dollar amount of spending (endowment spending policy distribution and other annual appropriations) for a fiscal year as a percentage of the beginning market value of assets. The effective spending rate does not include investment management fees that

are netted out of returns. Note that simply subtracting the effective spending rate from the total return does not result in an accurate computation of total return after spending. The formula is:

$$\frac{1 + \text{Total Return}}{1 + \text{Spending Rate}} - 1 = \text{Total Return After Spending}$$

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. ■

Absolute Return	The use of different strategies (e.g., global macro, market neutral, open mandate) to produce a positive return regardless of the direction and fluctuation of capital markets. Common techniques include using arbitrage, derivatives, futures, leverage, options, short selling, and unconventional assets.
Bonds (Fixed Income)	Includes long-term promissory notes that cannot be exchanged for other assets, government bonds, preferred stocks, structured debt, and derivatives where bonds are the underlying assets. Generally earn interest paid semiannually and are repaid at the principal (par) value. Does not include mortgage real estate.
Cash & Equivalents	Highly liquid, virtually risk-free assets with maturities of less than one year (e.g., certificates of deposit, commercial paper, nonconvertible bonds, and Treasury bills).
Co-Investments	A direct investment made into a company alongside a general partner that originates the transaction.
Commodities	Diversified baskets of fully collateralized, long-only, commodity futures contracts.
Developed Markets	Markets within countries that have an established economic infrastructure.
Distressed Securities	Securities of companies that are currently in default, bankruptcy, financial distress, or a turnaround situation.
Effective Spending Rate	The dollar amount of spending as a percentage of the beginning market value of assets. Spending amount includes the endowment spending policy distribution and other annual appropriations. It does not include investment management fees that are netted out of returns.
Emerging Markets	Typically includes countries that have an underdeveloped or developing economic infrastructure with significant potential for economic growth and increased capital markets participation by foreign investors.

Emerging Markets Debt	Debt instruments of emerging market countries and issuers, including USD-denominated and local currency bonds.
Emerging Markets Equity	Equity securities of emerging markets countries; considered emerging even if the equity market is fully functional and well regulated.
Endowment (as defined in FASB SFAS No. 117)	A fund of cash, securities, or other assets established to provide income for the maintenance of a not-for-profit organization. The use of the assets of the fund may be permanently restricted, temporarily restricted, or unrestricted. Donor-restricted gifts and bequests can provide a permanent endowment, which is to provide a permanent source of income, or a term endowment, which is to provide income for a specified period, generally establish endowment funds. The principal of a permanent endowment must be maintained permanently—not used up, expended, or otherwise exhausted—and is classified as permanently restricted net assets. The principal of a term endowment must be maintained for a specified term and is classified as temporarily restricted net assets. An organization's governing board may earmark a portion of its unrestricted net assets as a board-designated endowment (sometimes referred to as funds functioning as endowment or quasi-endowment funds) to be invested to provide income for a long but unspecified period. The principal of a board-designated endowment, which results from internal designation, is not donor restricted and is classified as unrestricted net assets.
Equities	Ownership positions in companies that can be traded in public markets. Often produce current income, which is paid in the form of quarterly dividends. The holders' claims are subordinate to the claims of preferred stock-holders and bondholders. Includes convertible bonds if they are held as an opportunistic means of eventually acquiring a company's stock. Also includes futures, options, rights, and warrants where the underlying assets are equities.
Externally Managed Assets	Assets, including pooled assets, managed by individuals or firms outside an institution.
Faculty Mortgages	Homeownership loans issued by an institution to faculty or staff. Classified as other assets.

Fund-of-Funds	A fund that invests in a collection of underlying funds.
High-Yield Bonds	Bonds regarded, on balance, as predominantly speculative with respect to capacity to pay interest and repay principal in accordance with the terms of the obligation. Typically, these bonds have a credit rating of BB or lower and pay higher yields because they are more risky than investment-grade bonds. Also includes collateralized bond obligations (CBOs).
Inflation-Linked Bonds	Fixed coupon bonds that earn interest paid semi-annually on inflation-adjusted principal.
Long/Short Hedge Funds	Portfolios with long positions in undervalued companies and short positions in overvalued companies, to capture the disparity in prospective returns, while maintaining a low level of overall market risk.
Long-Term Investment Portfolio	The group of assets that an institution deems best represents its investment policies and endowment asset allocation and returns. These assets should be subject to frequent market valuation and may include operating funds. Pooled income funds and charitable remainder trusts should be excluded if the investment strategy varies from the institution's asset allocation policy. Assets that cannot be fairly valued such as artwork, copyrights, and patents should also be excluded.
Non-Venture Private Equity	Through negotiation or tender offer, a takeover of a majority percentage of a company's equity with the purpose of acquiring its assets and operations. Includes leveraged buyouts (LBOs).
Other Assets	Should only include assets that cannot be classified as one or more of the other asset classes.
Other Private Investments	Includes funds that are invested across multiple private investments and cannot be allocated to a single asset class. Includes multi-strategy funds-of-funds and secondary market private investments.
Permanently Restricted Endowment	Endowments established with donor-imposed restrictions that must be followed in perpetuity. Relevant to private institutions reporting under FASB standards.

Private Oil & Gas/ Natural Resources	Funds created to invest in the exploration or development of energy-related reserves and natural resources.
Private Real Estate	Includes ownership positions in land and buildings as well as private operating companies. May also include equity-like investments in mortgages or land leases that include substantial participation in revenues and capital appreciation. Does not include equity mortgages such as collateralized mortgage obligations (CMOs), mortgage-backed securities, publicly traded REITs, or other public real estate.
Public Energy/ Natural Resources	Includes marketable energy funds and natural resources.
Public Real Estate	Includes REITs and other public real estate equity such as umbrella partnership REITs (UPREITs), and other public operating companies (REOCs).
Single Manager Fund	A fund in which the fund manager makes the investment decisions for the assets/securities/companies held within the fund.
Solo Investments	A direct investment made into a company in which the institutional investor originates and invests in a transaction, which is not associated with a manager in the investor's portfolio.
Spending Rule	The guideline an institution uses to determine annual distributions from its endowment (e.g., spend all income, spend 5% of three-year moving average market value, increase spending by 5% each year).
Temporarily Restricted Endowment	Endowments established with donor-imposed restrictions that expire after a specific period of time or when some other condition is met. Relevant to private institutions reporting under FASB standards.
Timber	Funds created to invest in timber-related business. Usually limited partnerships.
Total Return	The sum of income earned and appreciation, both realized and unrealized, for a specified period of time. Preferred method of calculation uses time-weighted rates of return.

Traditional Assets	Include US equities, non-US equities (including emerging markets), US investment-grade bonds, non-dollar bonds, high-yield bonds, emerging markets debt, and all cash and cash equivalents.
Unrestricted Endowment	Funds that do not have restrictions by donors or other parties.
Venture Capital	Investments in private securities of new companies or companies considered to be in the early stages of growth; these investments may have high risk and the potential for high return.

The University of Akron Foundation
University of Alaska Foundation Cons. Endowment
Allegheny College
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
Brandeis University
Brown University
Bryant 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
The City University of New York
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
Dartmouth College
Davidson College
University of Delaware
Duke University
Emerson College
Emory & Henry College
Emory University
Florida International University Foundation, Inc.
University of Florida Investment Corporation
Florida State University Foundation Inc.
Georgetown University
Georgia Tech Foundation Inc.
Gettysburg College
Goucher College
Grand Valley State University
Hampton University
Harvard Management Company, Inc.
Harvey Mudd College
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
Kansas State University Foundation
KU Endowment
Lafayette College
Lebanese American University
Lehigh University
Lewis and Clark College
University of Louisville
Lycoming College
Macalester College
University of Maine Foundation
Maryland Institute College of Art
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
University of Oregon 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
Rensselaer Polytechnic Institute
University of Rhode Island Foundation
Rice University
University of Rochester

The Rockefeller University
College of Saint Benedict
University of San Diego
Santa Clara University
Scripps College
Seattle University
Siena College
Simmons College
Soka University of America
University of Southern California
Spelman College
Stanford University
St. Lawrence University
University of St. Thomas
Swarthmore College
Temple University
The University of Texas Investment Management Co.
Texas Lutheran University
University of Toronto Asset Management Corporation
Trinity University
Tulane University
The UCLA Foundation
UNCG Endowment Partners, LP
UNC Management Company, Inc.
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 College
Washington and Jefferson College
Washington University in St. Louis
Webb Institute
Wellesley College
Wesleyan University
Western New England University
Wheelock College
College of William & Mary Foundation
Williams College
Yale University
Yeshiva University
York College of Pennsylvania

C | A