



Annual Analysis of Cultural and Environmental
Institution Investment Pool Returns:
Fiscal Year 2015

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Environmental Institution
Investment Pool Returns:
Fiscal Year 2015

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Annual Analysis of Cultural and Environmental Institution Investment Pool Returns

This report summarizes portfolio returns, asset allocation, investment manager structures, and net flow data for 55 cultural and environmental institutions for the fiscal year ended June 30, 2015.

The 55 participants in this study reported long-term investment portfolio (LTIP) assets totaling \$24 billion as of June 30, 2015. The LTIP size of participants ranged from \$32.9 million to \$6.6 billion. The mean LTIP size was \$433.9 million and the median was \$153.2 million. Eighteen institutions reported LTIP assets greater than \$300 million, and they controlled 82% of the aggregate LTIP assets.

This year's report takes a closer look at additional portfolio attributes and investor trends relevant to cultural and environmental institutions. 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.

Investment Portfolio Returns

Returns in Fiscal Year 2015

After two straight years in which most cultural and environmental institutions posted double-digit returns for their LTIPs, performance in fiscal year 2015 settled at a lower level. Global equity returns for US\$-based investors decoupled in 2015, with US equities continuing to post positive returns as global ex US equities ended the

year in the red in US\$ terms. Private equity generated strong returns, while hedge funds contributed modest gains to portfolios in 2015. Commodities and natural resources–related investments, which were dragged down considerably by collapsing oil prices, detracted from overall portfolio performance.

The mean nominal total return earned by participating institutions was 1.5% in fiscal year 2015 (Figure 1). With inflation (as

Figure 1. Summary of Investment Portfolio Returns
Years Ended June 30, 2015 • Percent (%)

Nominal Total Returns				
	Average Annual Compound Nominal Return			
	1 Year	3 Years	5 Years	10 Years
Responding Institutions				
High	6.0	13.8	11.9	8.0
Low	-2.0	7.1	7.0	3.0
Mean	1.5	9.7	9.3	6.3
Median	1.2	9.5	9.2	6.5
<i>n</i>	55	55	54	48
Mean After Spending	-2.8	4.7	4.1	0.8
<i>n</i>	22	17	14	5
Benchmarks				
70% Russell 3000® / 30% Barclays Govt/Credit	5.6	13.0	13.5	7.4
70% MSCI ACWI / 30% Barclays Govt/Credit	1.4	10.1	10.0	6.6
Real Total Returns				
	Average Annual Compound Real Return			
	1 Year	3 Years	5 Years	10 Years
Responding Institutions				
High	5.9	12.4	9.9	5.8
Low	-2.2	5.7	5.1	0.9
Mean	1.3	8.3	7.3	4.1
Median	1.1	8.1	7.2	4.3
<i>n</i>	55	55	54	48
Mean After Spending	-2.9	3.4	2.2	-1.3
<i>n</i>	22	17	14	5
Benchmarks				
70% Russell 3000® / 30% Barclays Govt/Credit	5.5	11.5	11.4	5.2
70% MSCI ACWI / 30% Barclays Govt/Credit	1.2	8.7	8.1	4.4

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

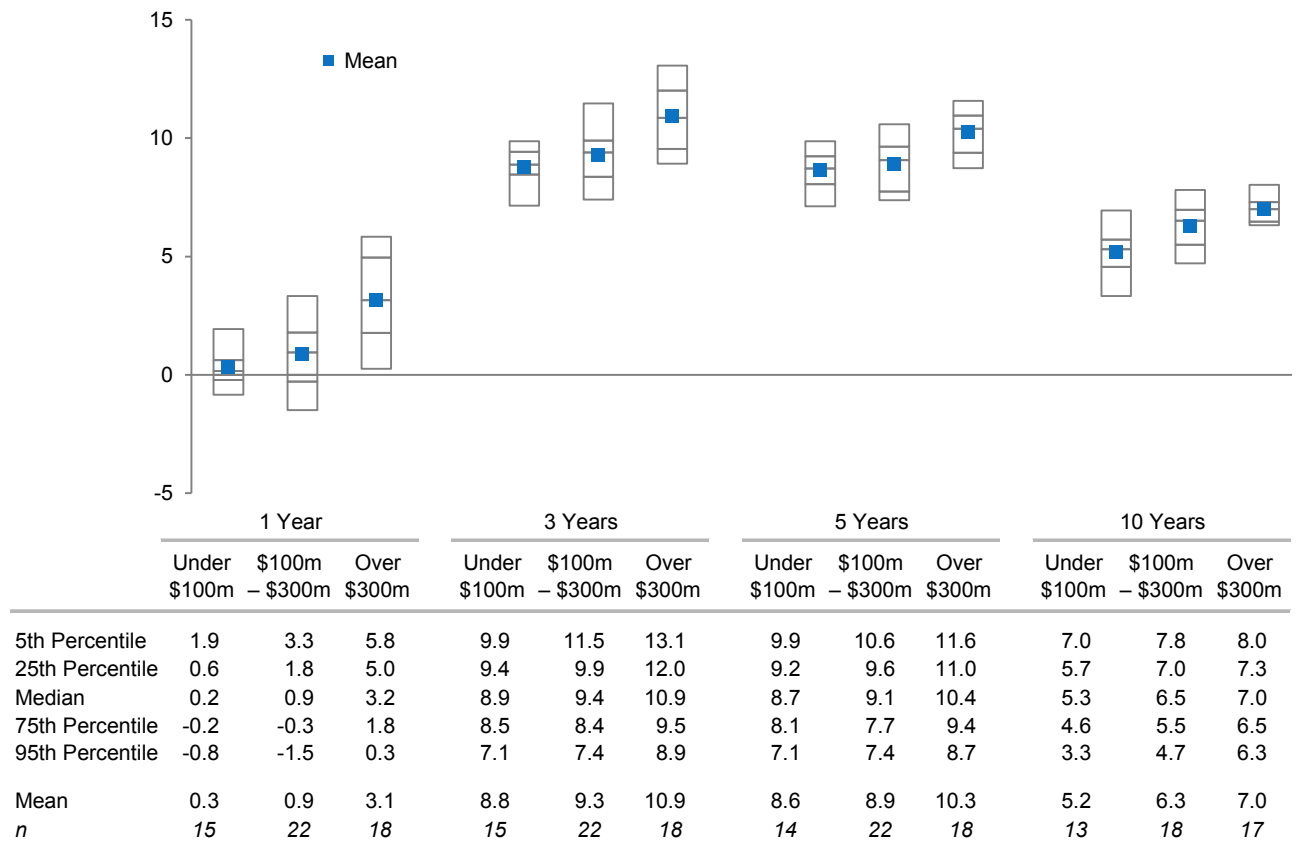
Notes: Three-, five-, and ten-year returns are annualized. Real returns are adjusted for inflation as measured by the Consumer Price Index.

measured by the Consumer Price Index) at just 0.1% for the year, the mean real return for all respondents is adjusted slightly to 1.3%. Trailing one-year returns differed significantly between portfolios with larger and smaller asset sizes. Participants with assets over \$300 million reported the highest mean nominal return (3.1%) (Figure 2). Institutions with assets between \$100 million and \$300 million reported an average return of 0.9%, followed by those with assets under \$100 million (0.3%). Throughout this section, we will explore the

factors that contributed to this variation of returns across institutions.

Survey participants were asked to provide composite returns for the major asset classes in their portfolio. Figures 3 and 4 display the range of participants' returns across these asset classes. The charts that follow in this section provide fiscal year 2015 median performance for the participant group across these asset classes alongside returns for relevant indexes (all index returns are in US\$ terms unless otherwise noted).

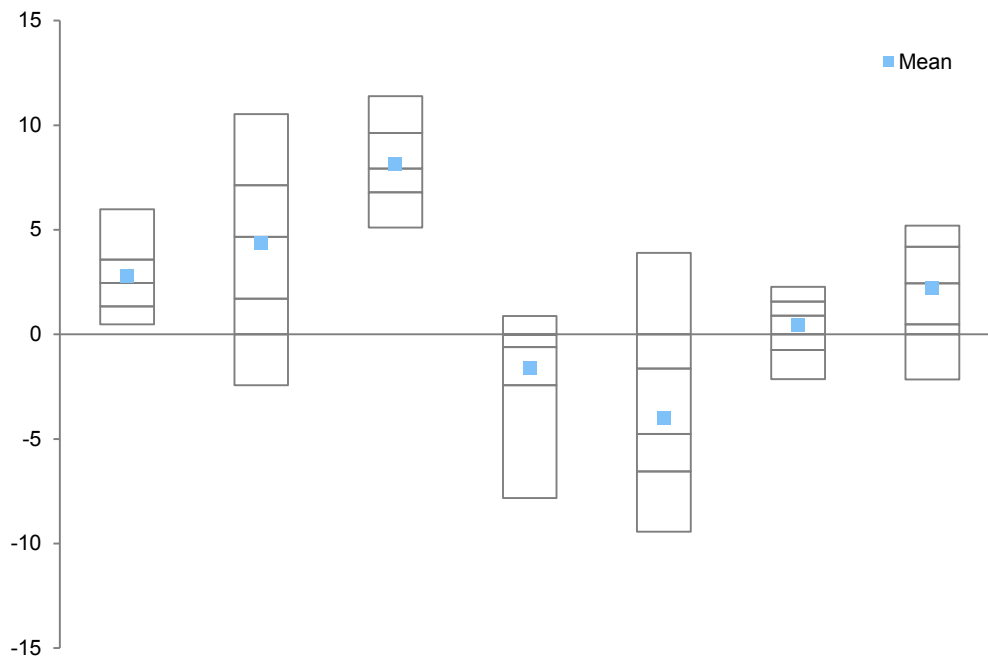
Figure 2. Summary of Long-Term Investment Portfolio Return Percentiles by Asset Size
 Years Ended June 30, 2015 • Percent (%)



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.
 Note: Three-, five-, and ten-year returns are annualized.



Figure 3. Dispersion of Participants' Asset Class Returns: Traditional Assets and Hedge Funds
Trailing One-Year as of June 30, 2015 • Percent (%)



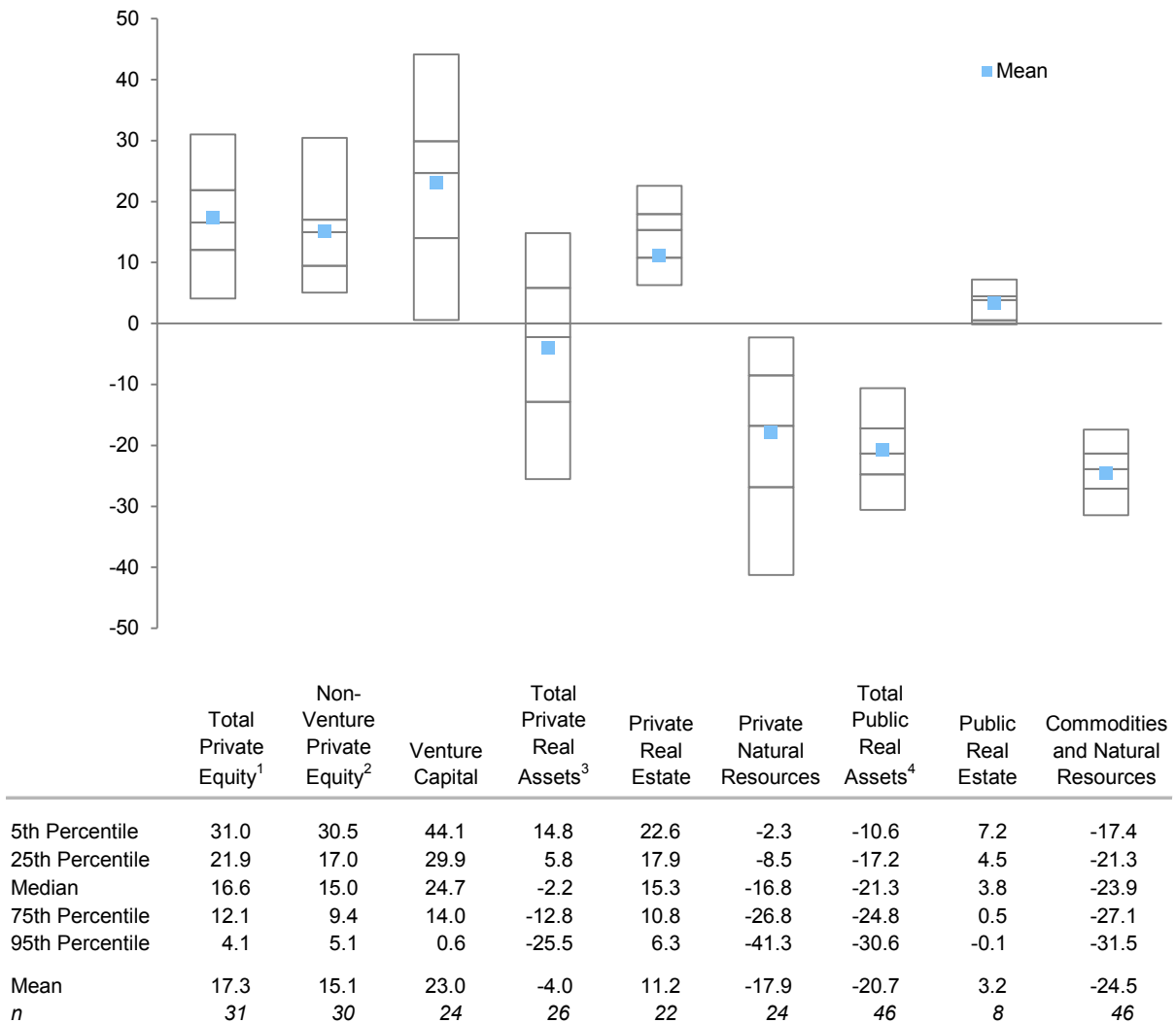
	Public Equity ¹	Global Equity ²	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds
5th Percentile	6.0	10.5	11.4	0.9	3.9	2.3	5.2
25th Percentile	3.6	7.1	9.6	0.0	-1.6	1.6	4.2
Median	2.5	4.7	7.9	-0.6	-4.8	0.9	2.4
75th Percentile	1.3	1.7	6.8	-2.4	-6.6	-0.8	0.5
95th Percentile	0.5	-2.4	5.1	-7.8	-9.4	-2.1	-2.2
Mean	2.8	4.3	8.1	-1.6	-4.0	0.4	2.2
<i>n</i>	52	28	51	49	49	48	50

Source: Cultural and environmental institutions 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.

Figure 4. Dispersion of Participants' Asset Class Returns: Private Equity and Real Assets
Trailing One-Year as of June 30, 2015 • Percent (%)



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

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

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.

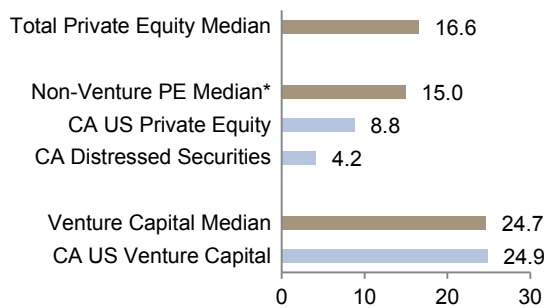
⁴ Total public real assets is a composite of public real estate, commodities, and inflation-linked bonds.

Private Equity. Private equity turned in the best performance of the broad asset class strategies in fiscal year 2015. For participants in this study, the median return for the private equity composite was 16.6% (Figure 5). Leading the way in this composite was venture capital, which produced a median return of 24.7% among participating institutions. While non-venture private equity returns were not as strong, the median participant return for this asset class was still in the double digits (15.0%).

Historically, private equity fund returns have varied considerably more than public equities, underscoring the importance of manager selection within this strategy. Excluding outliers that make up the top and bottom 5% of participants, private equity composite returns in fiscal year 2015 ranged from 4.1% to 31.0% (Figure 4). The range for venture capital was even wider, with the upper end of the distribution over 40%.

Figure 5. Private Equity: Median Participant Return Versus Index Returns

Trailing One-Year as of June 30, 2015 • Percent (%)



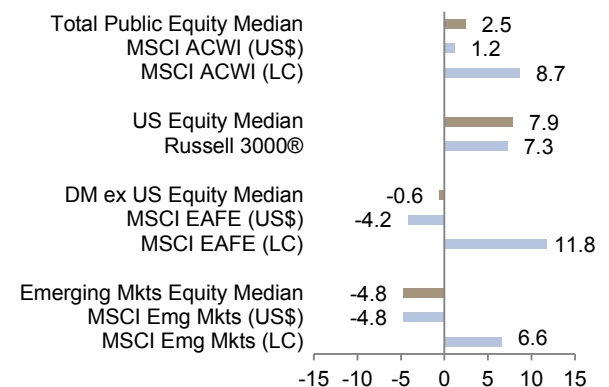
Sources: Cambridge Associates LLC and cultural and environmental institutions data as reported to Cambridge Associates LLC.

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

Public Equity. The US dollar began consistently rising against other major currencies in July 2014 and finished the fiscal year up strongly against all others. Consequently, fiscal year 2015 saw a wide divergence in returns of global equities in local currency and US\$ terms. The trailing one-year return for the MSCI All Country World Index (ACWI) was 8.7% in local currency terms and just 1.2% in US\$ terms (Figure 6). A separate 2014 survey of large universities and foundations revealed that only 21% of these investors hedge a portion of their foreign currency exposure. Due to the operational complexity and resources needed to adequately oversee a currency hedging program, the prevalence of currency hedging among reporting institutions in this study is likely to be considerably lower. Median performance among participants for the total public equity composite (2.5%) was much closer to the MSCI ACWI return in US\$ terms,

Figure 6. Public Equity: Median Participant Return Versus Index Returns

Trailing One-Year as of June 30, 2015 • Percent (%)



Sources: Cultural and environmental institutions 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.

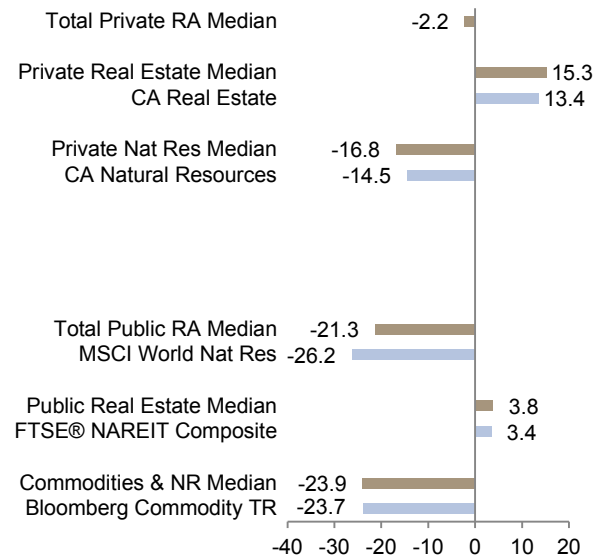
an indication that currency hedging is not widely employed within this study's universe.

The median one-year US equity return among participants was 7.9% (Figure 6). Participant returns varied from 11.4% at the 5th percentile to 5.1% at the 95th percentile (Figure 3), a substantially smaller range compared to that of private equity. Median participant performance for global ex US developed markets equities and emerging markets equities was -0.6% and -4.8%, respectively. The range of emerging market equity returns among participants was wider than that of developed equities, but still smaller than the range of private equity returns.

Real Assets. Real assets consists of a diversified group of investments, including commodities, natural resources, real estate, and inflation-linked bonds. The range of returns for these various strategies was considerable in fiscal year 2015. On an index basis, real estate was the strongest-performing asset class among the strategies, with the Cambridge Associates Private Real Estate Index returning 13.4% and the FTSE® NAREIT Composite returning 3.4% (Figure 7). Meanwhile, commodities and natural resources returns were dragged down considerably by collapsing oil prices.

Participant returns for private real assets strategies were considerably higher than those of public real assets, although the median return for both composites was negative. For participants in this study, the median composite returns for private real assets and public real assets were -2.2% and -21.3% respectively. The varying asset

Figure 7. Real Assets: Median Participant Return Versus Index Returns
Trailing One-Year as of June 30, 2015 • Percent (%)



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

mixes across the diverse substrategies of these composites contributed to a wide range in returns reported across participants. The range of public real assets returns from the 5th percentile to 95th percentile was 2,000 basis points (bps) while the range of private real assets returns was twice as large (4,030 bps). Median participant returns for the various substrategies are displayed in Figure 7.

Hedge Funds. The median hedge fund composite return among participants was 2.4% (Figure 8) in fiscal year 2015. On an index basis, diversified funds-of-funds that invest across a variety of strategies outperformed equity-oriented hedge funds over the one-year period. The variation in participants' hedge fund returns was low relative to most of the other asset class strategies, ranging from -2.2% to 5.2% excluding outliers making up the top and bottom 5%.

Figure 8. Hedge Funds: Median Participant Return Versus Index Returns

Trailing One-Year as of June 30, 2015 • Percent (%)

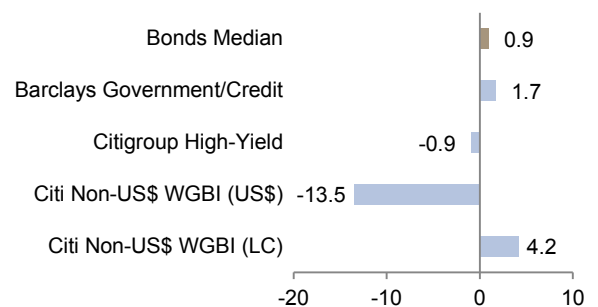


Sources: Cultural and environmental institutions data as reported to Cambridge Associates LLC. Index data are provided by Hedge Fund Research, Inc.

Bonds. Median participant performance for bonds was 0.9% in fiscal year 2015 (Figure 9). US bonds, as represented by the Barclays Government/Credit Bond Index, outperformed international bond indexes in US\$ terms, but underperformed the same international markets in local currency terms. The range of participant returns from the 5th percentile to the 95th percentile was just 440 bps.

Figure 9. Bonds: Median Participant Return Versus Index Returns

Trailing One-Year as of June 30, 2015 • Percent (%)



Sources: Cultural and environmental institutions data as reported to Cambridge Associates LLC. Index data are provided by Barclays and Citigroup Global Markets.

Analysis of Top and Bottom Performers in 2015

Asset Allocation. The importance of an asset allocation mix and its contributions to performance cannot be overstated. Figure 10 breaks the participant group into four quartiles based on fiscal year 2015 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 was 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 the outperforming PE/VC asset classes (8.9%). Those in the bottom quartile of performers reported an average allocation of just 1.9%. 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.

There were also substantial differences in allocations to real assets and bonds. As with equity allocations, institutions in the top quartile of performers had the highest average allocation to private real assets and the lowest average allocation to public real assets. The top quartile of performers had the lowest average allocation to bonds while the bottom quartile's average allocation was among the highest.

Attribution. While asset allocation is a key driver of performance, it does not fully explain the variation of returns that are

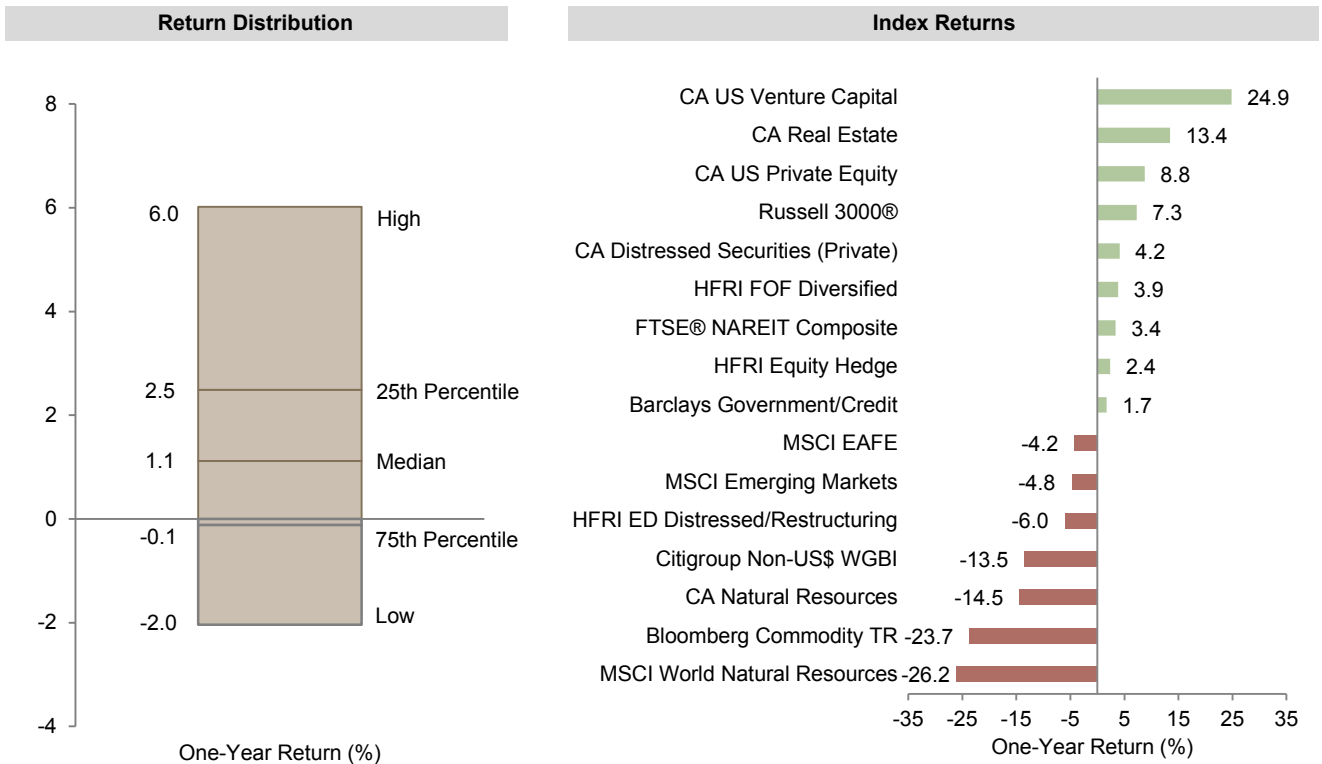
reported across different institutions. The execution or implementation of an asset allocation strategy also contributes to the total returns that portfolios earn. While we do not have the level of detailed data that is necessary to perform a precise attribution analysis, our data do allow us to conduct an estimated analysis that can help illuminate the main drivers of performance for fiscal year 2015.

Figure 11 illustrates the results of an estimated attribution analysis based on the one-year return and beginning fiscal year asset allocation of 53 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.¹

The attribution analysis estimates that less than half of the mean total return for the participant group could be explained by asset allocation in fiscal year 2015. US equity, which returned 7.3% on an index basis and had the highest allocation among the detailed asset classes, was the largest

¹ 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 10. Analysis of Top and Bottom Quartile Performers: One-Year Asset Allocation
As of June 30, 2015



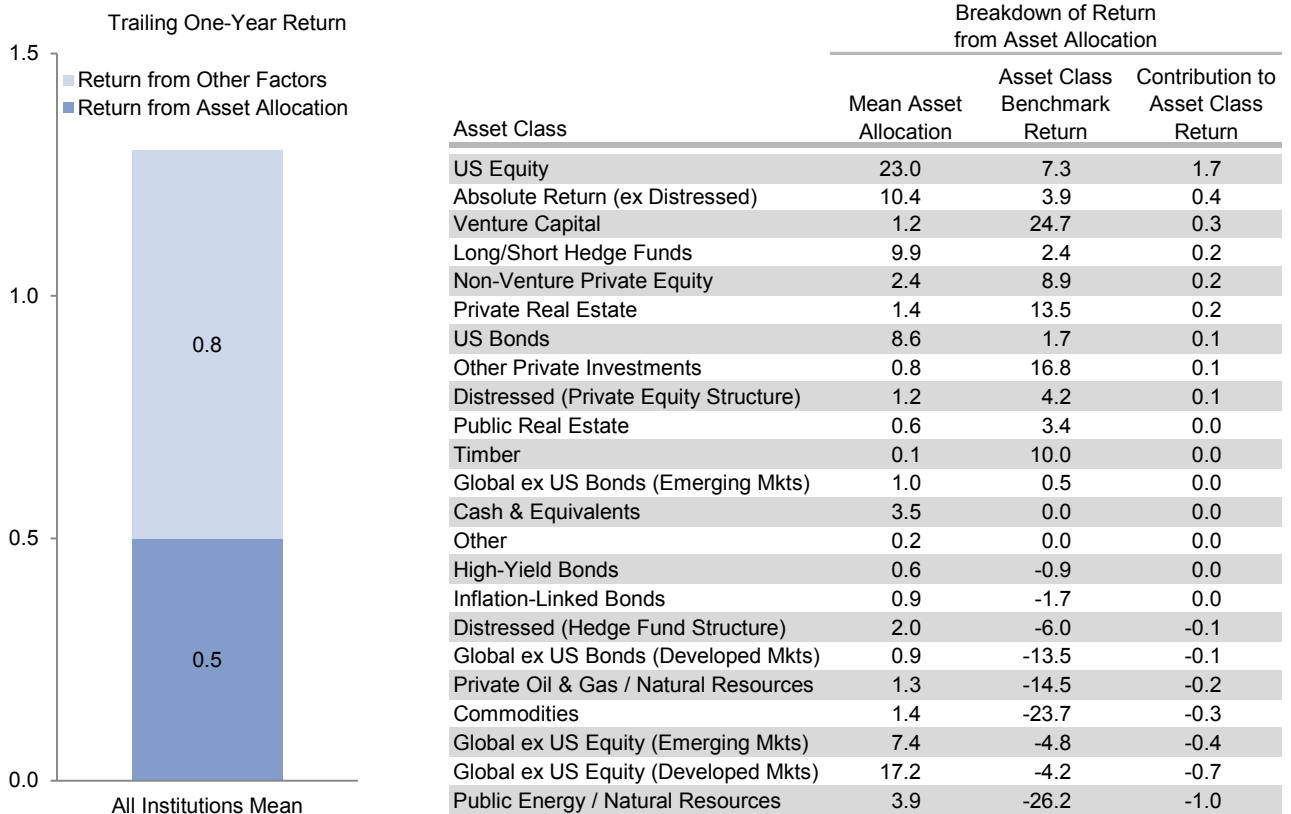
Quartile	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds	Dist Sec	PE & VC	Private RA	Public RA and ILBs	Cash	Other
Top Quartile	22.9	14.7	7.7	8.0	20.7	4.5	8.9	6.5	2.3	3.9	0.0
2nd Quartile	23.3	16.3	7.2	9.7	20.9	3.7	5.7	2.4	5.6	5.2	0.0
3rd Quartile	23.4	18.1	6.7	13.5	21.2	2.2	1.8	1.1	8.7	2.7	0.7
Bottom Quartile	23.3	19.4	8.6	12.9	20.2	1.9	1.9	0.4	8.5	2.9	0.1
All C&E Mean	23.2	17.1	7.5	11.0	20.7	3.1	4.6	2.7	6.2	3.7	0.2

Divergence (%)
-4%
-3%
-2%
-1%
Mean
+1%
+2%
+3%
+4%

Sources: Cultural and environmental institutions data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., Citigroup Global Markets, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., and the National Association of Real Estate Investment Trusts. MSCI data provided "as is" without any express or implied warranties. Notes: Performance quartiles are based on the long-term investment portfolio's trailing one-year return as of June 30, 2015. Mean allocations are for the two June 30 time periods from 2014 to 2015. Analysis includes 53 cultural and environmental institutions.



Figure 11. Attribution Analysis
As of June 30, 2015 • Percent (%)



Sources: Cultural and environmental institutions data as reported to Cambridge Associates LLC. Index data are provided by Barclays, Bloomberg L.P., Citigroup Global Markets, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., and the National Association of Real Estate Investment Trusts. MSCI data provided "as is" without any express or implied warranties.

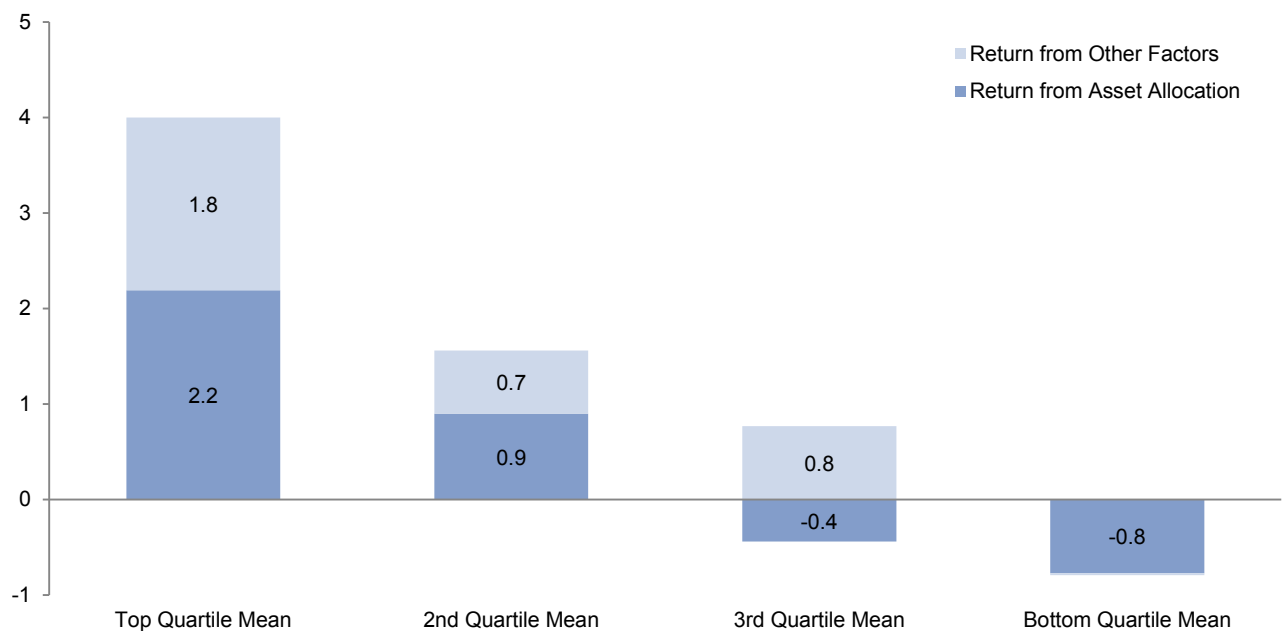
Notes: Includes data for 53 institutions that provided beginning fiscal year asset allocation. Mean asset allocation in the table is as of June 30, 2014. The sum of the contribution to asset class return for all categories in the table equals the amount of the total return that was explained by asset allocation. To be consistent with the methodology in which private investment returns are incorporated into the total portfolio composite calculation, private investment benchmark returns are linked quarterly end-to-end returns.

asset class return contributor for the trailing one-year period. While venture capital only represented 1% of the mean portfolio, the model indicates it was the third largest asset class return contributor due to its strong performance on an index basis. Several other alternative assets categories made positive contributions to returns, while natural resources–related investments and global ex US equities detracted from portfolio performance.

A breakdown of the attribution data into the four performance quartiles of the overall group highlights the different experiences among institutions (Figure 12). The

model estimates that institutions in the top performance quartile had the highest mean asset allocation return for fiscal year 2015, much of which can be attributed to their above average allocations to the outperforming private investment asset classes. In addition to having an outperforming asset allocation structure, the model estimates that the top performance quartile also had the highest mean return from other factors—and by a notable margin. This indicates that implementation decisions were a significant contributor to the top performance quartile’s outperformance of the overall participant group in fiscal year 2015.

Figure 12. Attribution Analysis by Performance Quartile
Trailing One-Year Return as of June 30, 2015 • Percent (%)



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Note: Includes data for 53 institutions that provide beginning fiscal year asset allocation.

Long-Term Returns

The mean average annual compound return (AACR) was 9.3% for the five-year period ending June 30, 2015 (Figure 1). Institutions with assets greater than \$300 million reported the highest average five-year return (10.3%) (Figure 2). For a constant group of institutions that have consistently reported historical performance, the most recent five-year period represents the fourth highest return from the last decade, trailing only the five-year periods ending in fiscal years 2007, 2008, and 2014 (Figure 13). Similar to those years, this most recent five-year period incorporates a recovery following a recession in which stock markets had significantly declined. The mean nominal AACR for the ten-year period was 6.3% (Figure 1), with the largest portfolios again reporting the highest mean return (7.0%) (Figure 2). The ranges of asset class returns across the entire participant

group for the trailing five- and ten-year periods are listed in Figures 14 and 15.

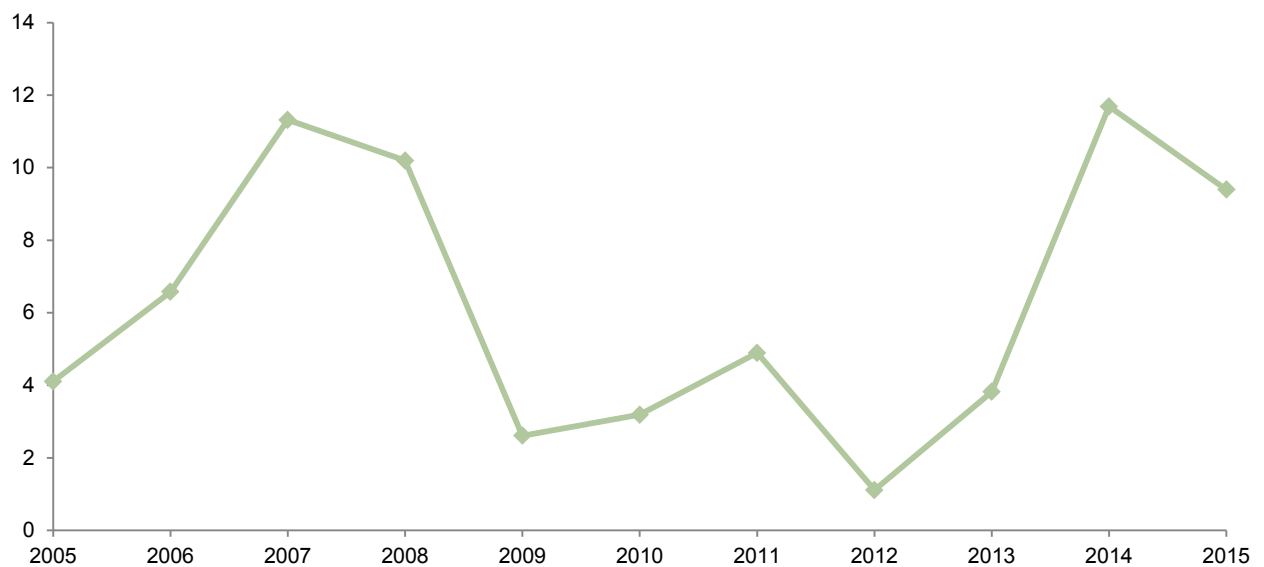
To maintain purchasing power for an endowment,² institutions must achieve a real return that offsets the average effective spending rate over the long-term. For the institutions that provided a long-term real return objective, nearly all reported a return objective of 5% (Figure 16). Through the trailing five- and ten-year periods ending June 30, 2015, the average real return after spending was 2.2% and -1.3%, respectively (Figure 1).

Relative Returns: Simple Portfolio

Benchmark. US equities have been among the top-performing investments over the past five years. Consequently, most institutions have considerably lagged a simple 70/30 benchmark that uses a US index for

² 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 spending rate exceeds the pool's long-term real return.

Figure 13. Rolling Five-Year Average Annual Compound Returns
Years Ended June 30 • Percent (%)



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.
Note: Analysis includes data for 39 institutions that provided returns for the last 15 years.

Figure 14. Dispersion of Participants' Asset Class Returns: Traditional Assets and Hedge Funds
As of June 30, 2015

	Public Equity ¹	Global Equity ²	US Equity	DM ex US Equity	EM Equity	Bonds	Hedge Funds
Trailing Five-Year							
5th Percentile	15.8	17.7	20.7	12.5	7.5	5.0	9.4
25th Percentile	13.8	16.6	18.9	11.6	5.6	4.1	7.5
Median	13.0	16.1	17.6	10.9	4.6	3.3	6.8
75th Percentile	12.5	14.2	16.6	10.0	3.5	2.6	6.1
95th Percentile	11.4	10.9	15.5	9.0	1.3	1.8	4.5
Mean	13.2	15.1	17.8	10.8	4.5	3.4	6.8
<i>n</i>	51	15	50	47	43	46	48
Trailing Ten-Year							
5th Percentile	9.1	12.1	10.1	8.8	10.9	6.0	8.4
25th Percentile	7.7	11.1	9.0	7.7	8.5	5.5	6.6
Median	7.1	10.4	8.1	7.0	8.1	4.7	5.7
75th Percentile	6.5	9.4	7.8	6.1	7.3	4.1	5.2
95th Percentile	4.4	7.9	6.1	5.1	6.0	3.3	4.1
Mean	7.0	10.2	8.3	6.9	8.2	4.7	5.9
<i>n</i>	45	10	41	34	10	37	31

Source: Cultural and environmental institutions 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.

Figure 15. Dispersion of Participants' Asset Class Returns: Private Equity and Real Assets
As of June 30, 2015

	Total Private Equity ¹	Non- Venture Private Equity ²	Venture Capital	Total Private Real Assets ³	Private Real Estate	Private Natural Resources	Total Public Real Assets ⁴	Public Real Estate	Commodities and Natural Resources
Trailing Five-Year									
5th Percentile	25.8	26.8	24.1	17.2	25.5	16.8	6.9	14.3	4.1
25th Percentile	17.6	17.0	21.6	11.6	16.9	8.3	3.5	14.2	1.5
Median	15.9	15.2	18.6	9.4	13.6	3.9	0.9	12.7	0.1
75th Percentile	13.5	13.1	16.8	6.3	12.4	-0.5	-0.6	11.0	-1.2
95th Percentile	9.9	10.3	7.7	-0.3	9.5	-6.6	-3.2	6.0	-3.6
Mean	16.7	15.6	18.3	8.9	17.5	2.6	1.3	11.5	0.2
<i>n</i>	31	30	24	24	20	19	38	6	36
Trailing Ten-Year									
5th Percentile	15.2	15.1	17.8	10.2	6.7	12.4	4.7	—	4.6
25th Percentile	12.4	12.2	14.8	7.8	6.3	9.3	3.7	—	3.5
Median	11.2	10.8	12.2	6.5	4.1	4.0	2.7	—	2.8
75th Percentile	10.8	10.1	8.5	3.7	2.9	2.2	1.6	—	1.8
95th Percentile	6.7	6.6	3.2	1.8	0.3	-0.3	-0.7	—	-1.3
Mean	11.1	11.0	11.4	6.1	4.1	5.4	2.3	—	2.3
<i>n</i>	17	15	11	10	7	6	13	—	10

Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Note: Private equity and private real assets return statistics are reported as internal rates of return.

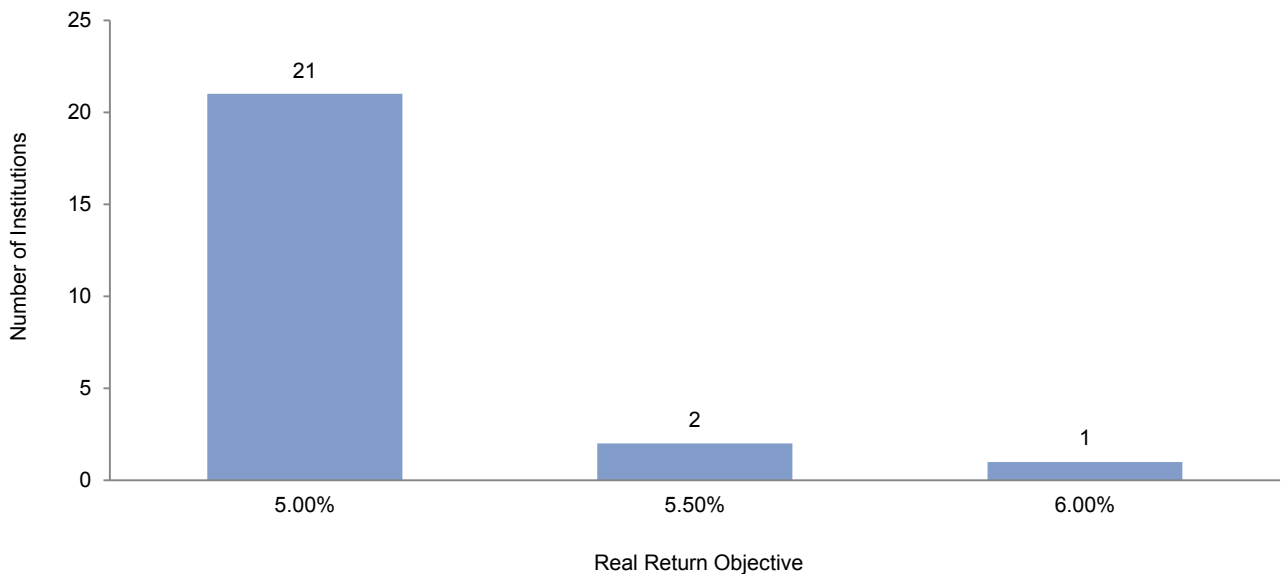
¹ Total private equity is a composite of non-venture private equity and venture capital.

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.

⁴ Total public real assets is a composite of public real estate, commodities, and inflation-linked bonds.

Figure 16. Real Total Portfolio Return Objectives
As of June 30, 2015



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.
Note: Graph includes data for 24 institutions that provided a real total portfolio return objective.

the equity component. The average return for participants underperformed this simple benchmark by over 400 bps (Figure 1) for the trailing five-year period. Even over the ten-year period that incorporates the stock market crash of late 2008 to early 2009, the mean return has underperformed this benchmark by 110 bps. The participant group has fared better against a 70/30 benchmark that uses a global equity index, with the mean return underperforming this benchmark by just 30 bps over the ten-year period.

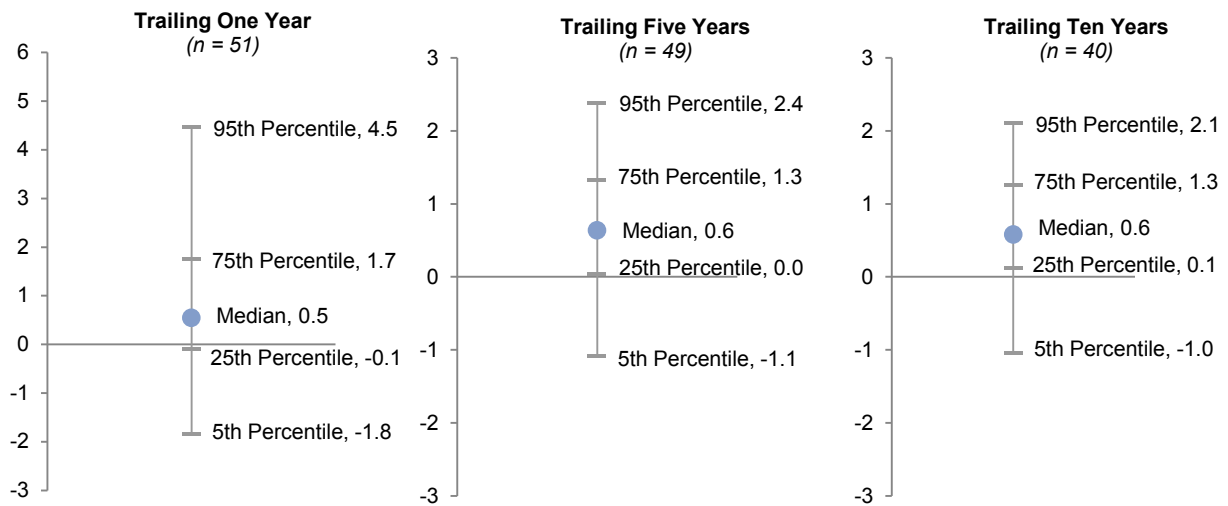
Policy Portfolio Benchmarks

Relative Returns. Each nonprofit institution has its own unique blend of investment objectives, constraints, and risk tolerances. Consequently, investment policies will vary, leading to different asset allocation structures for institutions that may otherwise be considered worthy peers. While perfor-

mance results of peers can be informative, they are not necessarily the most effective benchmark to evaluate an institution's investment performance.

The comparison of an institution's return to its policy portfolio benchmark is the true mark for determining whether a portfolio is being successfully managed against its target investment policy. For the institutions that provided performance for their policy portfolio benchmark, the median difference between the total portfolio return and the benchmark was 0.5 ppts (Figure 17) for fiscal year 2015. Over two-thirds of these institutions (35 of 51) earned a return that surpassed their policy portfolio benchmark for the trailing one-year period. The median difference between the total portfolio AACR and the benchmark was 0.6 ppts for the both the trailing five-year and ten-year periods.

Figure 17. Range of Out/Underperformance of Total Return Versus Policy Portfolio Benchmark
As of June 30, 2015 • Percentage Points



Source: Cultural and environmental institutions 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. Almost all of the respondents (46 of 47) that provided a policy portfolio benchmark use a detailed, asset class–specific benchmark to evaluate the performance of the total portfolio. Figure 18 summarizes the most frequently used benchmarks in policy portfolios by asset class/strategy.

The most commonly cited benchmark used to evaluate the US equity portion of the portfolio was the Russell 3000® Index. Global ex US equity was most often measured by a blend of the MSCI EAFE and MSCI Emerging Markets indexes. Some institutions prefer to measure their long-only equities against a global index instead of benchmarking the domestic and international equities separately. For these institutions, the MSCI All Country World Index is the most common benchmark. The

Cambridge Associates LLC Private Equity and Venture Capital indexes were the most frequently used benchmarks for private investments.

Most respondents used an HFRI index for hedge funds, with the Fund of Funds Composite Index being the most common. The most frequently used bond benchmark was the Barclays Aggregate Bond Index, though many institutions use unique index combinations to better reflect their underlying bond exposure. For real assets, benchmark combinations are unique across most participants due to the wide variety of strategies under this category.

Figure 18. Frequently Used Components of Policy Portfolio Benchmarks
As of June 30, 2015

Simple Policy Benchmarks (n = 1)		
	Benchmark Description	Percent (%) of Institutions
Simple Benchmark Combinations	Combination: MSCI All Country World Index and CPI-U + 5%	100.0
Detailed Policy Benchmarks (n = 46)		
Asset Class/ Strategy	Benchmark Description	Percent (%) of Institutions
Global Equity (n = 13)	MSCI All Country World Index	76.9
	Combination: MSCI World and MSCI Emerging Markets indexes	23.1
US Equity (n = 33)	Russell 3000® Index	66.7
	S&P 500 Index	24.2
	Wilshire 5000 Index	6.1
	Combination: Russell 2000® and S&P 500 indexes	3.0
Global ex US Equity (n = 32)	Combination: MSCI EAFE and MSCI Emerging Markets indexes	65.6
	MSCI All Country World ex US Index	21.9
	4 Other Unique Benchmarks/Combinations	12.5
Bonds (n = 46)	Barclays Aggregate Bond Index	37.0
	Barclays Government/Credit Bond Index	15.2
	19 Other Unique Benchmarks/Combinations	47.8
Hedge Funds (n = 41)	HFRI Fund of Funds Composite Index	41.5
	HFRI Fund of Funds Diversified Index	24.4
	91-Day Treasury Bills + prespecified percentage	12.2
	7 Other Unique Benchmarks/Combinations	21.9
Private Investments (n = 22)	Cambridge Associates LLC Private Equity® and/or Venture Capital® indexes	36.4
	Russell 3000® Index + prespecified percentage	22.7
	S&P 500 Index + prespecified percentage	18.2
	4 Other Unique Benchmarks/Combinations	22.7

Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

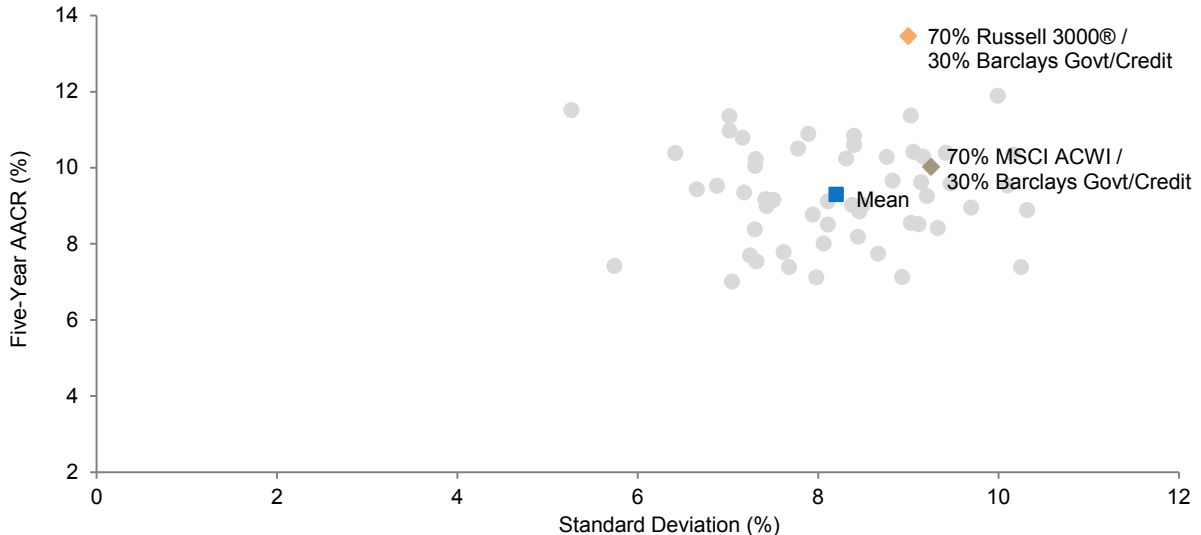
Notes: Not all institutions reported a benchmark for each asset class/strategy. The percent of institutions calculation includes only those with a benchmark to the specific asset class/strategy. Benchmarks for real assets are not shown due to the unique combinations that are employed across nearly all participating institutions.

Risk-Adjusted Performance

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. While the average standard deviation among institutions was lower compared

to a simple 70/30 benchmark containing a US equity component, the group's average return underperformed the simple benchmark by over 400 bps (Figure 19). As a result, the average Sharpe ratio of respondents over the trailing five-year period (1.15) was lower than that of the domestic 70/30 benchmark (1.46). The Sharpe ratio for a 70/30 benchmark with a global equity component was 1.08.

Figure 19. Risk/Return and Sharpe Ratio
Five Years Ended June 30, 2015



	Five-Year AACR (%)	Standard Deviation (%)	Sharpe Ratio
5th Percentile	11.4	10.1	1.54
25th Percentile	10.3	9.1	1.26
75th Percentile	8.4	7.3	1.00
95th Percentile	7.3	6.6	0.89
Mean	9.3	8.2	1.15
Median	9.2	8.2	1.10
<i>n</i> = 54			
70% Russell 3000® / 30% Barclays Govt/Credit	13.5	9.0	1.46
70% MSCI ACWI / 30% Barclays Govt/Credit	10.0	9.3	1.08

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

Note: Analysis includes only institutions that provided underlying quarterly returns, and excludes those that only provided annual returns.

Portfolio Asset Allocation

2015 Asset Allocation

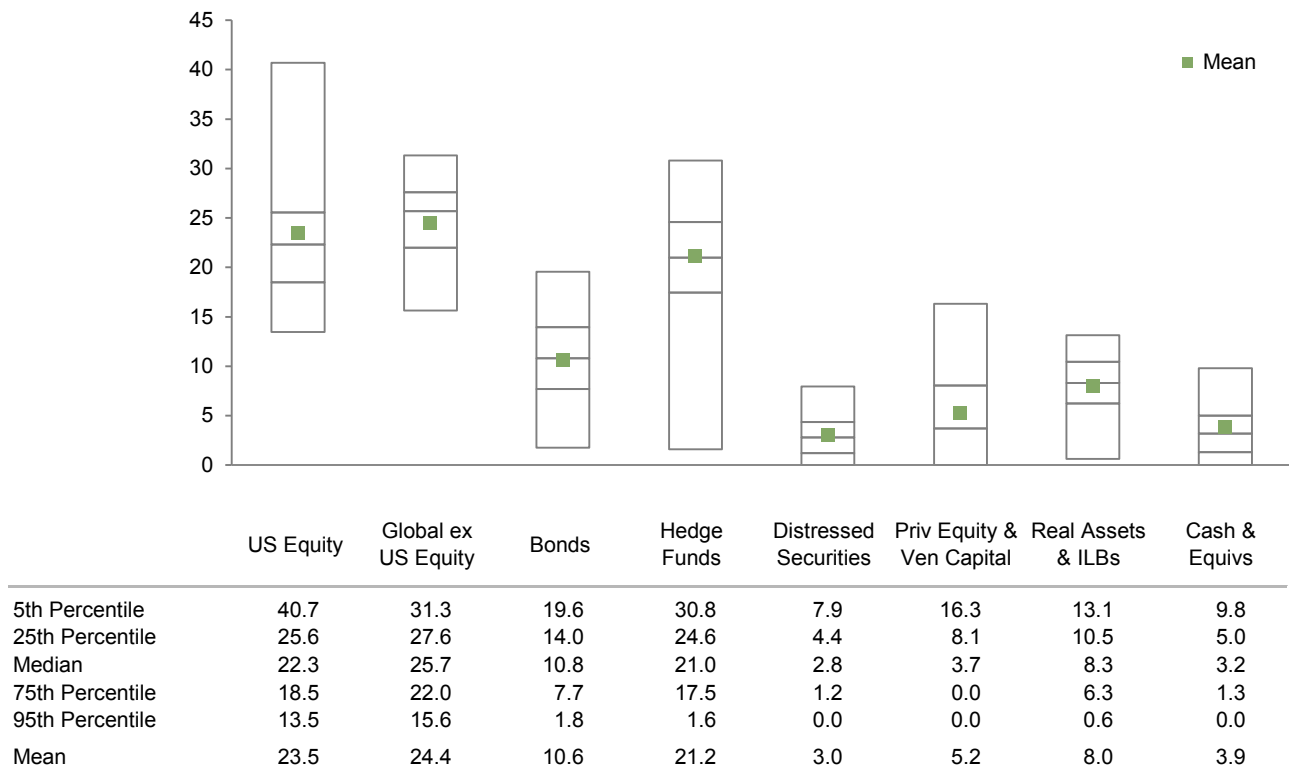
Almost half (47.9%) of the average LTIP consisted of public equities at June 30, 2015. On average, allocations to global ex US equities (24.4%) were slightly higher than those to US equities (23.5%). Portfolios had significant exposure to alternative assets, with 21.2% allocated to hedge funds and 5.2% allocated to private equity/venture capital, on average. Another 3.0% was allocated on average to distressed securities, which are invested through either a hedge fund or private equity-type investment vehicle. Real assets, which consist of a diversified group of public and private assets,

made up 8.0% of portfolios, on average. Average allocations to bonds and cash were 10.6% and 3.9%, respectively (Figure 20).

As Figure 21 shows, allocations to these broad asset classes can vary. A key factor in the variation of asset allocations continues to be the total value of assets under management. Smaller portfolios continue to maintain higher allocations to public equities and bonds, while institutions with assets over \$300 million had the highest average allocation to private equity and venture capital and real assets. Hedge fund allocations varied only slightly across the disparate asset size groups, with the midsized portfolios reporting the highest average allocation.

Figure 20. Asset Allocation Distribution by Asset Class

As of June 30, 2015 • Percent (%) • $n = 55$



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Figure 21. Summary Asset Allocation by Asset Size
As of June 30, 2015 • Percent (%)

	Under \$100mm (n = 15)		From \$100mm to \$300mm (n = 22)		Over \$300mm (n = 18)	
	Mean	Median	Mean	Median	Mean	Median
US Equity	24.3	23.5	22.8	22.2	23.6	18.9
Global ex US Equity	26.2	27.0	25.9	27.0	21.2	22.2
Developed Markets	18.6	18.8	17.9	18.1	14.1	14.6
Emerging Markets	7.6	8.0	8.0	7.7	7.0	7.2
Bonds	13.8	12.1	11.4	11.3	7.0	6.2
US Bonds	11.3	11.4	9.2	8.8	6.1	5.9
Global ex US Bonds (Developed)	0.7	0.1	0.5	0.1	0.2	0.0
Global ex US Bonds (Emerging)	1.1	0.6	1.2	0.8	0.3	0.0
High-Yield Bonds	0.7	0.0	0.5	0.0	0.4	0.0
Hedge Funds	21.1	20.7	21.9	23.1	20.3	20.8
Long/Short Hedge Funds	12.6	11.7	10.4	10.4	6.6	6.8
Absolute Return (ex Distressed)	8.5	7.7	11.5	9.6	13.7	13.8
Distressed Securities	1.8	1.9	2.8	2.7	4.3	4.5
Hedge Fund Structure	1.6	1.9	1.9	1.3	2.7	2.1
Private Equity Structure	0.2	0.0	0.9	0.0	1.6	1.2
Private Equity & Venture Capital	1.3	0.0	3.8	2.1	10.2	8.9
Venture Capital	0.3	0.0	1.5	0.0	3.0	2.1
Non-Venture Private Equity	0.8	0.0	1.6	1.0	5.8	5.4
Other Private Investments	0.2	0.0	0.7	0.0	1.4	1.0
Real Assets & Inflation-Linked Bonds	8.3	8.5	7.1	7.7	9.0	9.4
Private Real Estate	0.2	0.0	0.5	0.0	3.1	2.1
Public Real Estate	1.0	0.0	0.2	0.0	0.4	0.0
Commodities	1.3	1.2	1.0	0.2	0.3	0.0
Inflation-Linked Bonds	0.8	0.4	0.9	0.2	0.2	0.0
Private Oil & Gas/Natural Resources	0.0	0.0	0.8	0.0	2.7	2.0
Timber	0.0	0.0	0.0	0.0	0.3	0.0
Public Energy/Natural Resources	5.0	4.8	3.6	3.3	2.1	1.7
Cash & Equivalents	3.2	3.0	4.1	2.7	4.1	3.6
Other	0.0	0.0	0.2	0.0	0.4	0.0

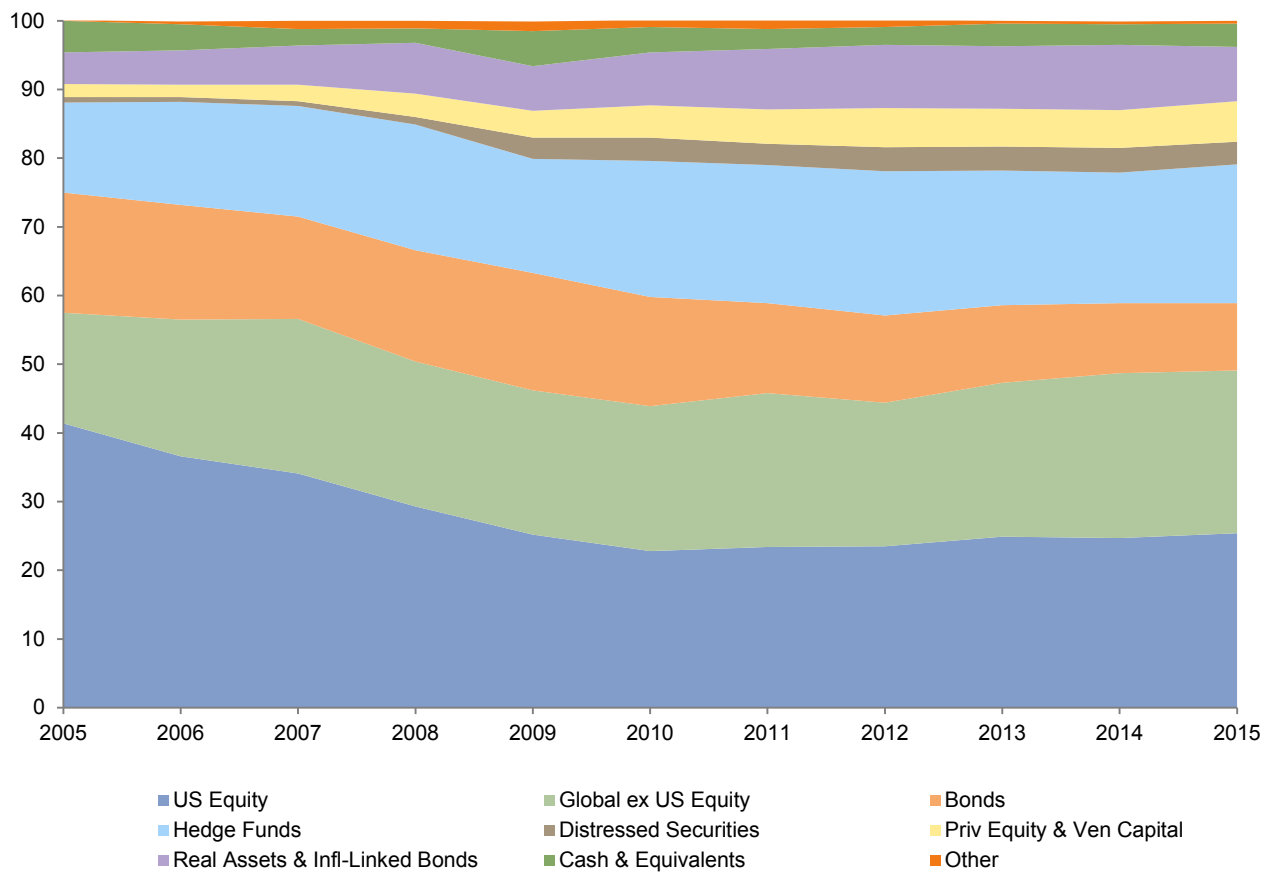
Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Historical Asset Allocation

Notable shifts in average asset allocations have occurred over the last decade. In general, allocations to US equities and bonds are lower than they were ten years ago, while allocations to global ex US equities, private equity and venture capital, hedge funds, and real assets are higher. In the case of US equity, changes in recent years have been a reverse of the longer-term trends. The average allocation to US equity

rose by about 3 pts from 2010 to 2015 after declining by about 19 pts in the first part of the decade. The largest decline in fiscal year 2015 was in real assets, where the average allocation for the constant group dropped by almost 2 pts (Figure 22).

Figure 22. Historical Mean Asset Allocation Trends
 Years Ended June 30 • Percent (%)



	Constant Universe											All Inst
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015
US Equity	41.4	36.6	34.1	29.3	25.2	22.8	23.4	23.5	24.9	24.7	25.4	23.5
Global ex US Equity	16.1	19.9	22.5	21.1	21.0	21.1	22.4	20.9	22.4	24.0	23.7	24.4
<i>Developed Markets</i>	13.5	16.4	17.7	16.2	16.3	15.7	16.2	14.6	15.9	17.1	16.7	16.9
<i>Emerging Markets</i>	2.6	3.4	4.8	4.9	4.7	5.4	6.2	6.3	6.6	6.9	7.0	7.6
Bonds	17.5	16.7	14.9	16.2	17.1	15.9	13.1	12.7	11.3	10.2	9.8	10.6
Hedge Funds	13.1	15.0	16.1	18.3	16.6	19.8	20.1	21.0	19.6	19.0	20.2	21.2
Distressed Securities	0.8	0.7	0.7	1.1	3.1	3.4	3.1	3.5	3.5	3.6	3.3	3.0
Priv Equity & Ven Capital	1.9	1.8	2.4	3.4	3.9	4.7	5.0	5.7	5.5	5.5	5.9	5.2
Real Assets & Inflation-Linked Bonds	4.6	5.0	5.7	7.4	6.5	7.7	8.8	9.2	9.1	9.5	7.9	8.0
Cash & Equivalents	4.6	3.8	2.4	2.1	5.1	3.7	2.9	2.6	3.3	3.0	3.4	3.9
Other	0.1	0.4	1.2	1.1	1.4	1.0	1.3	1.0	0.4	0.4	0.4	0.2

Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Notes: Constant universe represents 23 institutions that provided asset allocation data for each year from 2005 to 2015. All institutions represents 55 institutions that provided 2015 data.

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.

Of the survey respondents that provided data for the last two years, a slight majority (23 of 40) made no changes to their target asset allocation policy in fiscal year 2015. Figure 23 displays the proportion of institutions that made changes to the broad asset class categories. The proportion of institutions that reported increases to total public equity and hedge funds was greater than the proportion that lowered targets. Meanwhile, institutions were more likely to lower targets to private equity and venture capital, bonds, and real assets.

Private Investments and Uncalled Capital Commitments

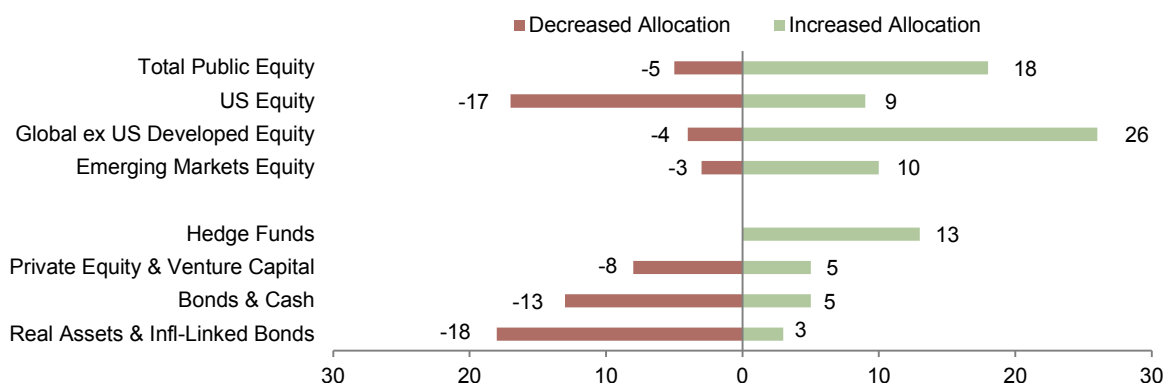
One of the core principles of the endowment model is the use of private investments that, in part due to their illiquid nature, offer the potential for higher long-term returns than those of public equities. Participating institutions, particularly those with larger asset sizes, continue to allocate a significant portion of their portfolios to private investments.³ The average allocation to private investments for all participants was 8.7%, while those with portfolios greater than \$300 million had an average allocation of 17.9%.

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

³ Private investments include private equity, venture capital, private distressed securities, private real estate, private oil & gas/natural resources, and timber.

Figure 23. Changes in Target Asset Allocation

June 30, 2014 – June 30, 2015 • Percentage of Institutions Increasing or Decreasing Targets

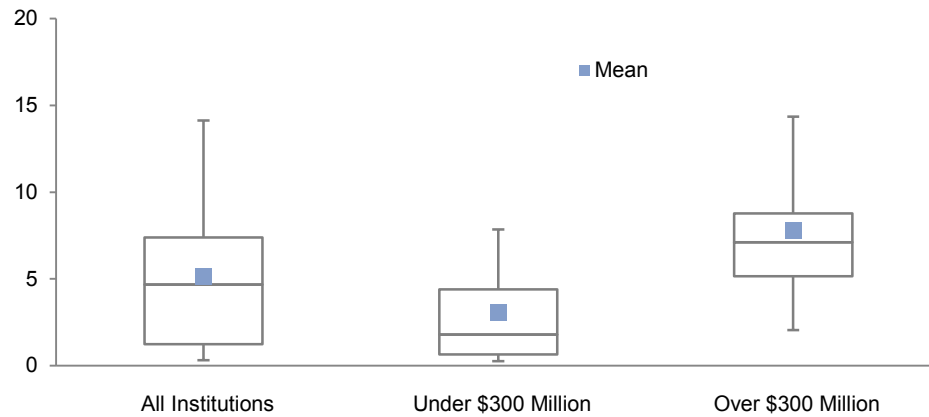


Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

Notes: Exhibit represents data for 40 cultural and environmental institutions that provided target asset allocation data for 2014 and 2015. Real assets includes targets to both public and private assets.

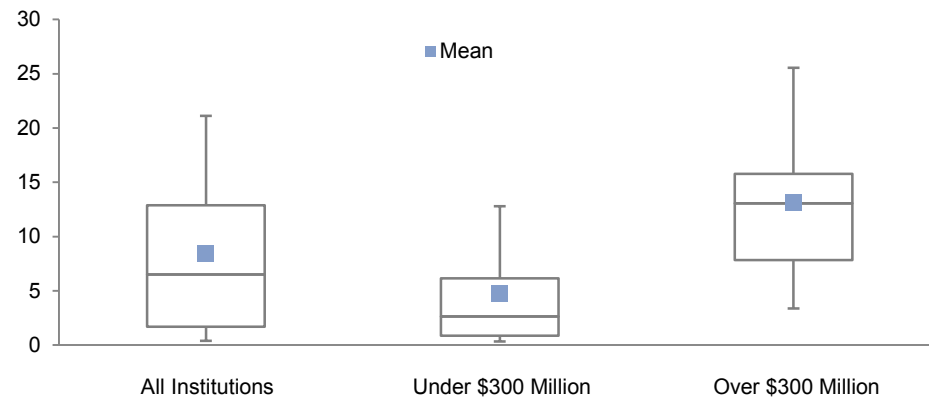
Figure 24. Uncalled Capital Committed to Private Investment Funds
As of June 30, 2015 • Percent (%)

Uncalled Capital Commitments as a Percentage of the Total LTIP



	All Institutions	Under \$300 Million	Over \$300 Million
5th Percentile	14.1	7.8	14.3
25th Percentile	7.4	4.4	8.8
Median	4.7	1.8	7.1
75th Percentile	1.2	0.6	5.1
95th Percentile	0.3	0.2	2.0
Mean	5.1	3.1	7.8
<i>n</i>	32	18	14

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



	All Institutions	Under \$300 Million	Over \$300 Million
5th Percentile	21.1	12.8	25.5
25th Percentile	12.9	6.2	15.8
Median	6.5	2.6	13.1
75th Percentile	1.7	0.9	7.8
95th Percentile	0.4	0.3	3.4
Mean	8.4	4.7	13.2
<i>n</i>	32	18	14

Source: Cultural and environmental institutions 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.

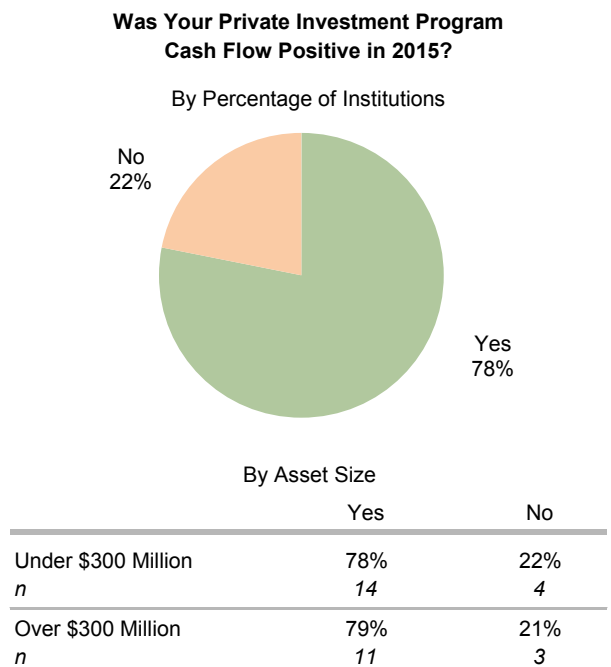
must also consider the potential impact of uncalled capital commitments.

For participants with private investment programs, uncalled capital commitments as a percentage of the total LTIP value averaged 5.1% at the end of fiscal year 2015 (Figure 24). 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 \$300 million, uncalled capital commitments represented an average of 7.8% of their total LTIP value. The ratio was 3.1% for institutions with assets less than \$300 million.

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 \$300 million, uncalled capital commitments represented an average of 13.2% of their total liquid assets. For institutions with asset sizes under \$300 million, the average was 4.7% (Figure 24).

Institutions can use a variety of sources to fund capital calls, including private investment fund distributions, cash reserves, and proceeds from sales of other investment assets. In fiscal year 2015, private investment programs for most participants were cash flow positive, meaning the amount of fund distributions was higher than paid-in capital calls (Figure 25).

Figure 25. Private Investment Program Cash Flow
As of June 30, 2015 • $n = 32$



Source: Cultural and environmental institutions 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 2015.

Investment Management Structures

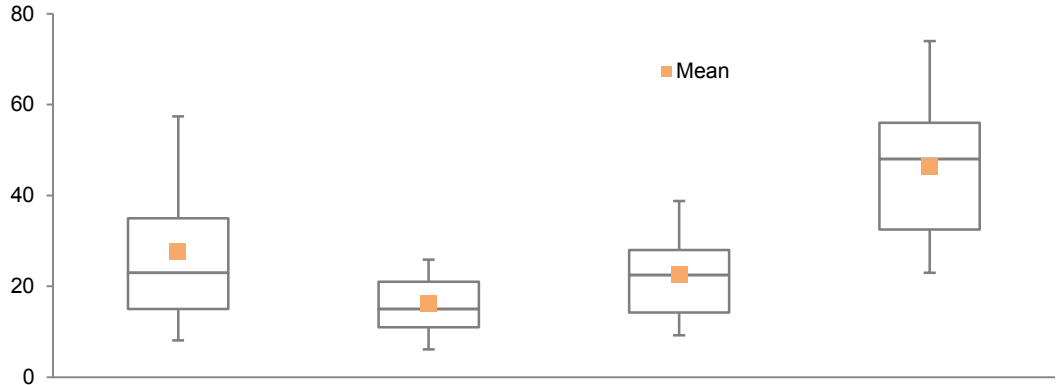
Number of External Managers

Many factors contribute to the number of managers employed within an investment portfolio. As shown in Figure 26, 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, institutions with assets over \$300 million employed 46 external investment managers at the end of fiscal year 2015. In contrast, the smallest portfolios reported an average of just 16 managers. The number of investment vehicles is higher for most institutions, mainly because of the allocation of capital across multiple funds of the same investment manager in private investment asset classes.

Even within the disparate asset size groups, the range of managers employed can be wide. Within the smallest portfolios, the number of managers employed at the 5th percentile (26) is more than four times the amount used at the 95th percentile (6). For portfolios over \$300 million, there are 74 managers employed at the 5th percentile compared to 23 at the 95th percentile. Much of the variation can be attributed to the management of alternative asset classes. As Figure 27 shows, the dispersion in the number of alternative asset managers employed is 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 asset size groups in Figure 28.

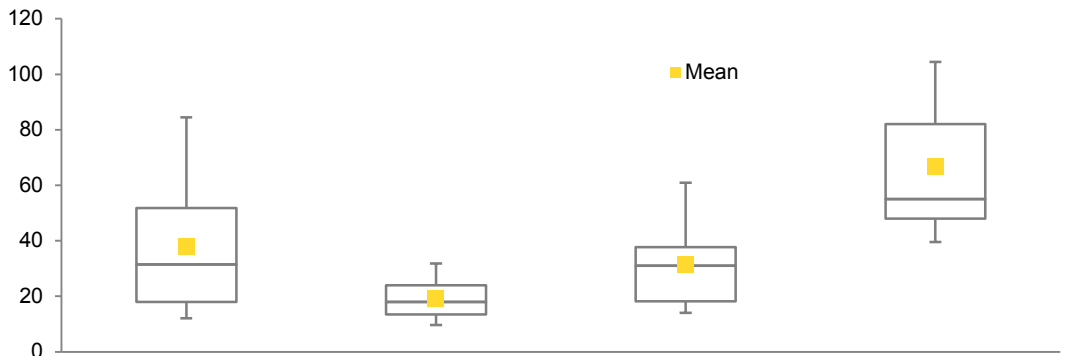
Figure 26. Number of External Managers and Investment Vehicles
As of June 30, 2015

External Managers



	All Institutions	Under \$100 Million	\$100 Million to \$300 Million	Over \$300 Million
5th Percentile	57	26	39	74
25th Percentile	35	21	28	56
Median	23	15	23	48
75th Percentile	15	11	14	33
95th Percentile	8	6	9	23
Mean	28	16	23	46
<i>n</i>	52	15	22	15

Investment Vehicles



	All Institutions	Under \$100 Million	\$100 Million to \$300 Million	Over \$300 Million
5th Percentile	84	32	61	105
25th Percentile	52	24	38	82
Median	32	18	31	55
75th Percentile	18	14	18	48
95th Percentile	12	10	14	40
Mean	38	19	31	67
<i>n</i>	52	15	22	15

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

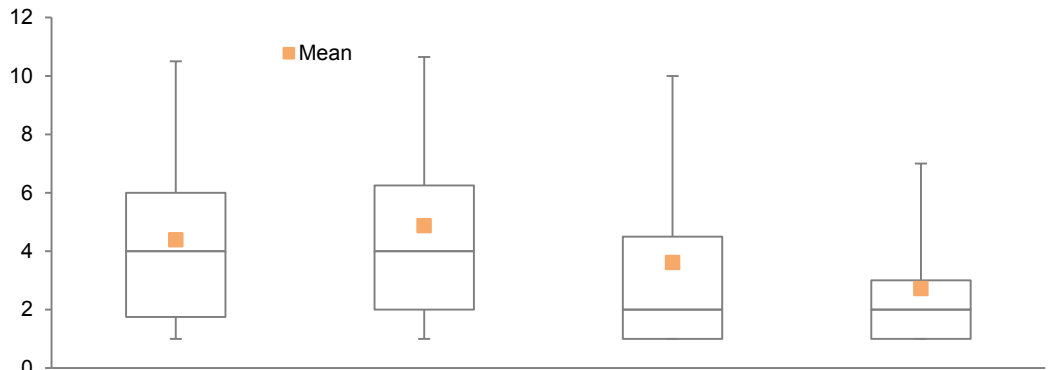
Figure 27. Dispersion in Number of Managers for Selected Asset Classes
As of June 30, 2015

Traditional Asset Classes



	US Equity	Global ex US Dev Equity	Emerging Markets Equity	US Bonds
5th Percentile	5	4	4	3
25th Percentile	4	3	3	2
Median	3	2	2	1
75th Percentile	2	1	2	1
95th Percentile	1	1	1	1
Mean	3	2	2	1
<i>n</i>	51	49	49	45

Alternative Asset Classes



	Long/Short Hedge Funds	Abs Return Hedge Funds	Private Equity	Venture Capital
5th Percentile	11	11	10	7
25th Percentile	6	6	5	3
Median	4	4	2	2
75th Percentile	2	2	1	1
95th Percentile	1	1	1	1
Mean	4	5	4	3
<i>n</i>	36	48	31	25

Source: Cultural and environmental institutions 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 28. Externally Managed Investment Pool Holdings by Strategy
As of June 30, 2015

Strategy	Under \$100 Million			\$100 Million to \$300 Million			Over \$300 Million		
	Average Number of			Average Number of			Average Number of		
	Managers	Vehicles	<i>n</i>	Managers	Vehicles	<i>n</i>	Managers	Vehicles	<i>n</i>
Traditional Equity									
Global Equity	2	2	8	2	2	11	2	2	13
US Equity	3	3	15	3	3	22	4	4	14
Global ex US Equity (Developed)	2	2	13	2	2	22	3	3	14
Global ex US Equity (Emerging)	2	2	13	2	3	21	3	3	15
Traditional Bonds									
Global Bonds	1	1	8	1	1	11	1	1	5
US Bonds	2	2	13	1	2	20	1	2	12
Global ex US Bonds (Emerging)	1	1	2	1	2	4	—	—	—
High-Yield Bonds	1	1	3	1	1	4	1	1	1
Hedge Funds									
Long/Short Hedge Funds	4	4	7	4	4	15	5	6	14
Absolute Return (ex Dist Securities)	3	3	13	4	5	20	7	8	15
Distressed Securities									
Distressed (Hedge Fund Structure)	1	1	3	2	2	8	2	2	11
Distressed (Private Equity Structure)	1	2	2	2	4	10	3	5	12
Private Investments									
Non-Venture Private Equity	1	2	4	2	4	12	6	9	15
Venture Capital	1	1	3	2	4	8	4	7	14
Other Private Investments	2	3	2	2	2	9	3	3	14
Real Assets & ILBs									
Private Real Estate	1	2	2	2	2	6	4	6	15
Public Real Estate	1	1	4	1	1	2	1	1	4
Commodities	1	1	5	1	1	3	1	1	4
Inflation-Linked Bonds (TIPS)	1	1	2	1	2	4	1	1	1
Private Oil & Gas / Natural Resources	1	1	1	2	4	7	4	7	15
Timber	—	—	—	1	1	2	1	1	3
Public Energy/Natural Resources	2	2	9	2	2	15	2	2	12
Diversified (Multi-Strategy) RA	1	1	7	1	1	8	1	1	2
Cash (Dedicated Cash Managers Only)	1	1	9	1	1	19	1	1	10
Tactical Asset Allocation	—	—	—	1	1	6	1	1	1

Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

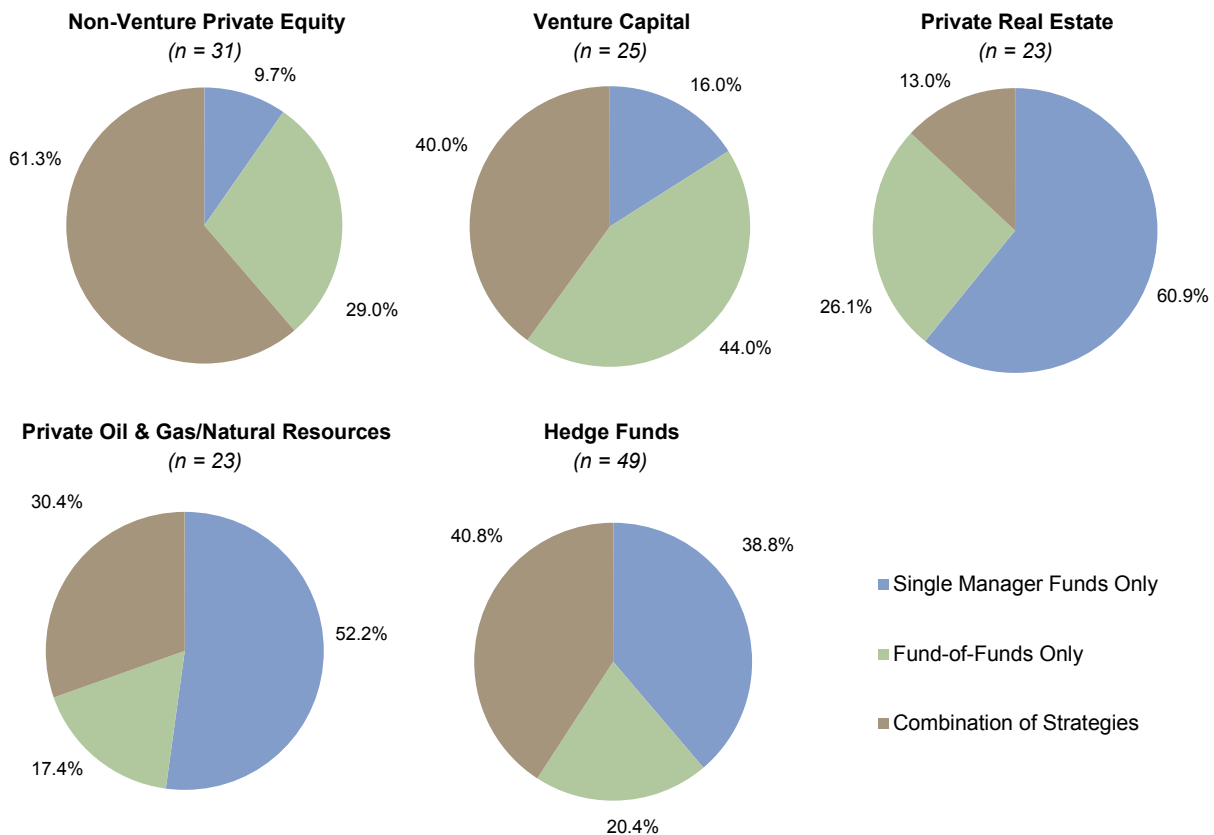
Notes: *n* indicates the number of institutions that are included in the average number of managers and average number of vehicles. Only those institutions with an allocation to the specific asset class are included in each category. As a result, the sum of the individual asset classes will not equal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

Asset Class Implementation

Alternative Assets. Just over one-third of participants (39%) have constructed a hedge fund program that solely uses single manager funds, while 20% rely only on funds-of-funds. The remaining institutions employ a combination of single manager funds and funds-of-funds (Figure 29). Implementation practices also vary across private investment asset classes. The use of a combination of strategies was most common for the implementation of non-

venture private equity, while the use of solely funds-of-funds is most prevalent with venture capital. A sole reliance upon single manager funds was the most common practice in real estate and private energy/natural resources. 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 29. Portfolio Implementation: Private Investments and Hedge Funds
As of June 30, 2015

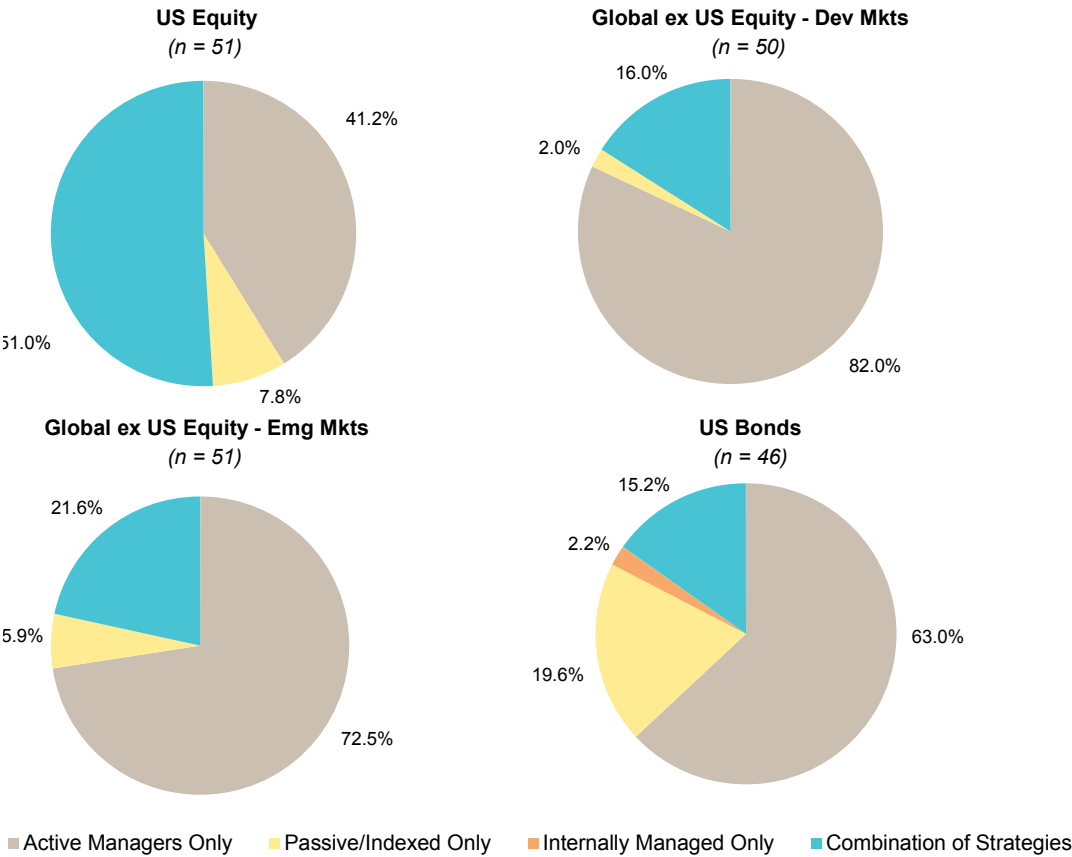


Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.
Note: n represents the number of institutions that provided the portfolio implementation for each asset class.

Public Equities and Bonds. Of the institutions that provided data on their portfolio implementation, 41% used active managers for all of their US equity allocation (Figure 30). The proportion was higher for global ex US equity allocations, where developed

markets and emerging markets allocations were achieved solely through active managers for 82% and 73% of respondents, respectively. For bonds, a majority of respondents used only active managers for their total allocation to US markets (63%).

Figure 30. Portfolio Implementation: Traditional Equities and Bonds
As of June 30, 2015



Source: Cultural and environmental institutions 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

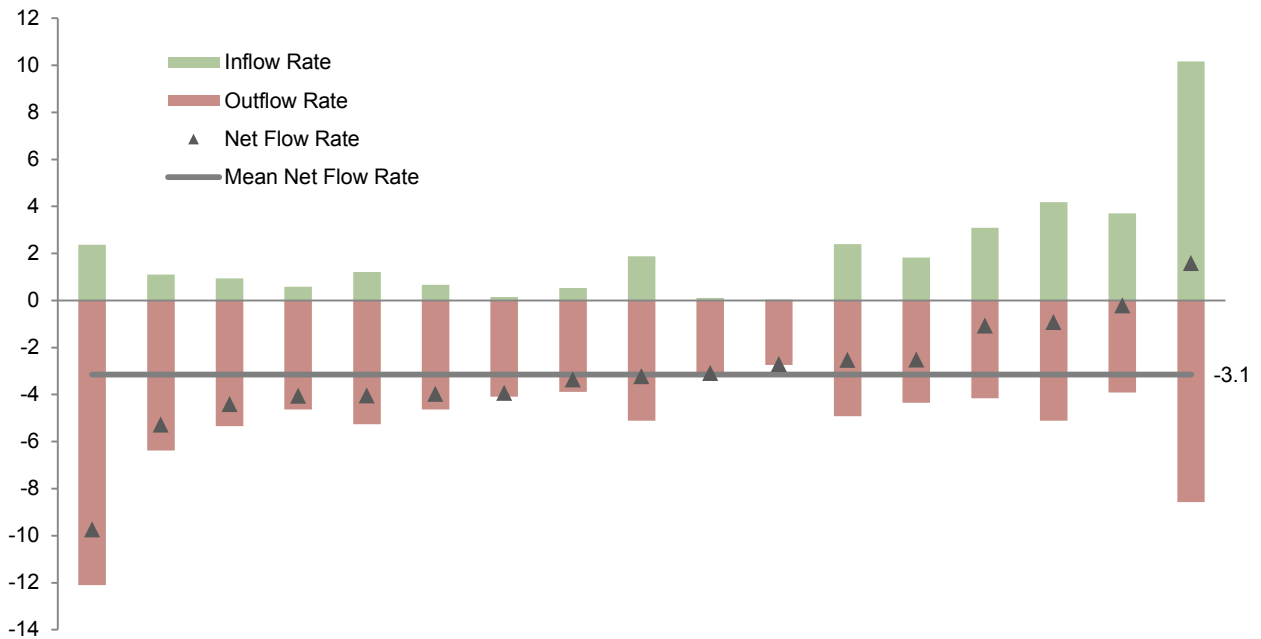
Traditionally, endowment health has been evaluated in terms of investment performance and endowment spending or payout rate. A key objective has been to achieve real investment returns that exceed the average annual payout rate over the long term. This approach omits an important part of the picture: 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.

Most institutions experience annual inflows from gifts and other additions. As a result,

the actual growth rate for a portfolio is higher than growth based on returns after spending only. Since maintaining the purchasing power of existing endowment gifts is a key objective in endowment management, the traditional return after spending statistic should not be dismissed. However, this statistic can understate the actual extent of asset growth. By incorporating real investment performance with the overall net flow rate, an institution can better evaluate the trajectory of the LTIP's role in the institution's business model.

For the 17 participants that provided both additions to and withdrawals from their portfolio in fiscal year 2015, the mean net flow rate was negative (-3.1%), meaning the amount of withdrawals from the portfolio surpassed the amount of additions for the majority of respondents (Figure 31). Of this

Figure 31. Net Flow Rate Comparison
Fiscal Year 2015 • Percent (%) • n = 17



Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.



group of institutions, only five earned a real return that was high enough to offset the net flow rate in fiscal year 2015 and create real net asset growth for the LTIP.

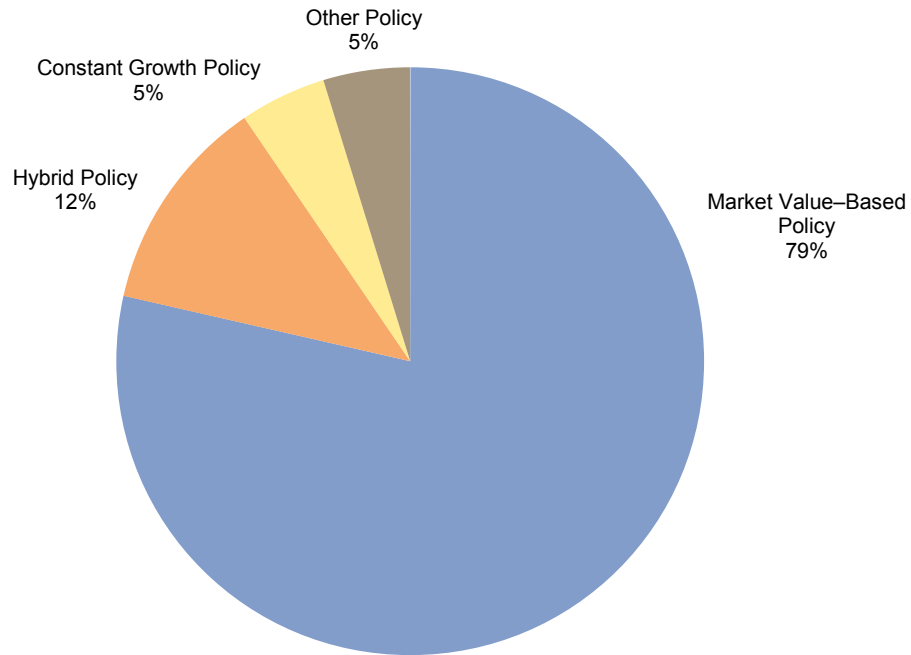
Spending Policies

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.⁴

The majority (79%) 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 32). This rule type emphasizes purchasing power preservation by linking the spending distribution amount directly to the endowment’s market value. Another 12% of institutions use a hybrid rule type, which blends the asset preservation principle of a market value–based rule with the more predictable spending element of a constant growth rule. Just 5% of participants use a constant growth rule type.

⁴ For a more in-depth discussion on this topic please see William Prout et al., “Spending Policy Practices,” Cambridge Associates Research Report, 2015.

Figure 32. Spending Policy Types
Fiscal Year 2015 • n = 42



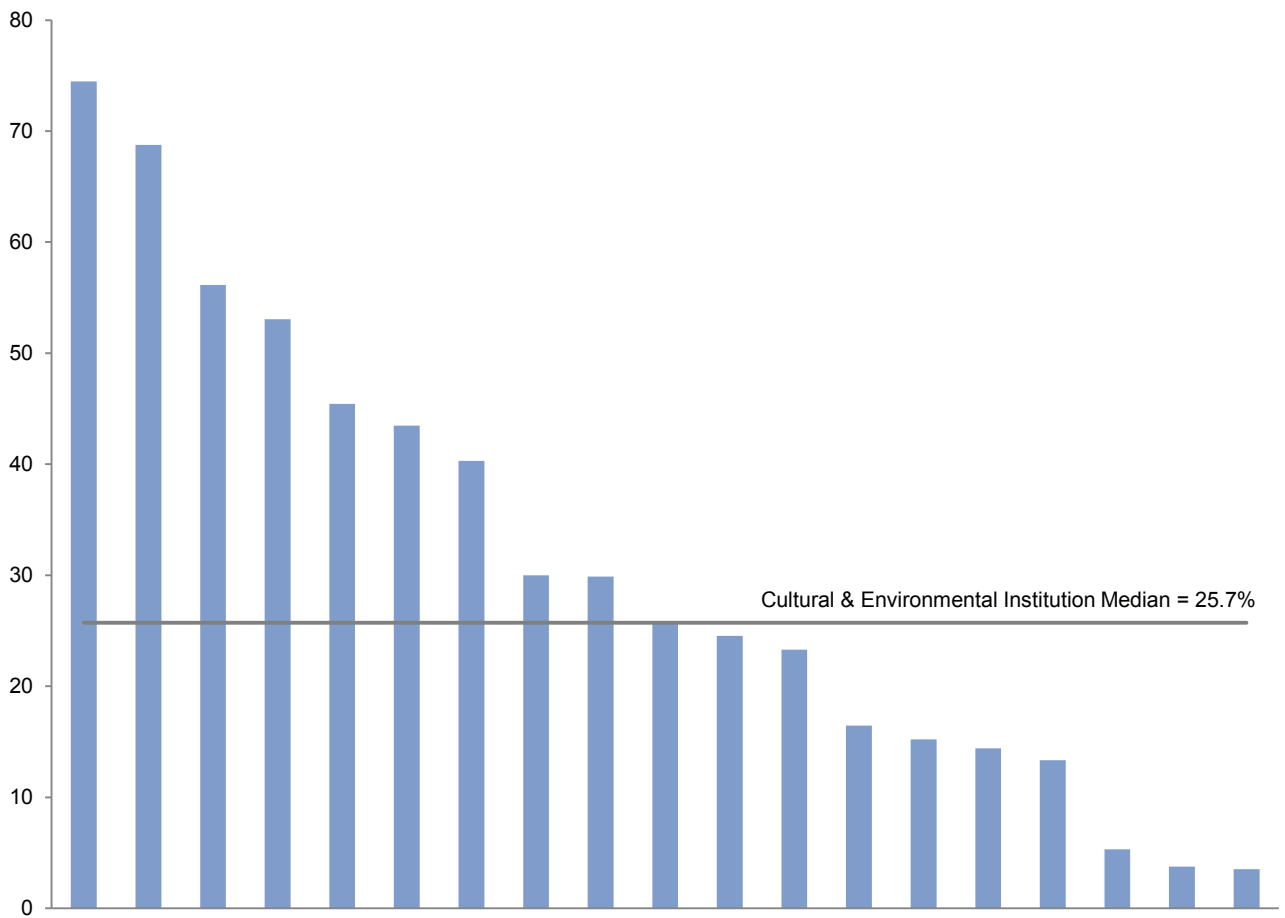
Source: Cultural and environmental institutions data as reported to Cambridge Associates LLC.

LTIP Support of Operations

For the 19 institutions that provided data, the median support from the LTIP as a percentage of the organization’s total operating expenses was 25.7% in fiscal year 2015 (Figure 33). The extent of support varied widely, from a couple of institutions relying

on the investment portfolio to cover less than 5% of expenses to a handful of institutions at the other end of the spectrum that rely on the portfolio payout to cover over half of the operating budget. ■

Figure 33. Long-Term Investment Portfolio Support of Operations
Fiscal Year 2015 • n = 19



Source: Cultural and environmental institutions 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.

Data Collection and Results

This report includes data for 55 cultural and environmental institutions. All participants provided investment pool data as of June 30, 2015. The notation of n denotes the number of institutions included in each analysis.

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 measure used for this purpose is the Consumer Price Index (CPI-U). Note that simply subtracting the CPI-U 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 spending rate for the time period. The spending rate is the dollar amount of spending for a fiscal year as a percentage of the beginning market value of assets. Note that simply subtracting the 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 US\$-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.
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 stockholders 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.
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.
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).
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.
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.

Atlanta Historical Society
The Vivian Beaumont Theater, Inc.
Boston Athenaeum
Boston Symphony Orchestra Inc.
The Brookings Institution
California Academy of Sciences
Chemical Heritage Foundation
The Children's Museum of Indianapolis
Conner Prairie Foundation
Cypress Lawn Endowment Care Trust
The Edison Institute
The Evergreens Cemetery
Fallon Paiute-Shoshone Tribe
The Frick Collection
Isabella Stewart Gardner Museum
The J. Paul Getty Trust
Jeremy and Hannelore Grantham Environmental Trust
Hagley Museum and Library
Linda Hall Library Trusts
Honolulu Museum of Art
Houston Museum of Natural Science
Huntington Library and Art Gallery
Indianapolis Museum of Art Inc.
Institute of International Education
JFK Library Foundation
Kennedy Center for the Performing Arts
Longwood Gardens, Inc.
Mashantucket Pequot Tribal Nation Endowment Trust
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Museum of Fine Arts, Houston
Museum of Modern Art
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The New York Public Library
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White House Historical Association - Endowment Trust
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The Henry Francis duPont Winterthur Museum, Inc.
WNET
World Wildlife Fund Inc.

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