COLLEGE AND UNIVERSITY INVESTMENT POOL RETURNS

FISCAL YEAR 2021

CAMBRIDGE ASSOCIATES

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This study is based on a survey that Cambridge Associates (CA) administers annually to our college and university clients. The report that follows summarizes returns, asset allocation, and other investment-related data for 152 institutions for the fiscal year ended June 30, 2021. This year's report includes commentary and exhibits that are spread across six separate sections.

Fiscal year 2021 will go down in the record books as a year that delivered some of the best investment performance that endowments have ever seen. Although endowments across the board earned exceptional returns, the range of outcomes was the widest it has been in more than 20 years. Our **INVESTMENT PORTFOLIO RETURNS** section highlights performance results for this past fiscal year. This section investigates some of the factors that contributed to the historically large variation of peer returns and what made top performers in particular stand out. It also includes analysis on investment performance over multiyear trailing periods and how this most recent fiscal year helped boost longer-term results.

Endowments not only generated very high returns on an absolute basis in fiscal year 2021. The vast majority of respondents to our survey also outperformed their policy portfolio benchmarks for the year, including some by extremely large margins. But what components are most commonly used in policy benchmarks? Our **INVESTMENT POLICY** section touches on this topic and how peer practices for benchmarking private equity have changed over the past decade. Also included in this section are data on real return objectives and how asset allocation strategies among endowments can differ from a policy perspective.

CA has been conducting this survey for several decades and this gives us unique insights into trends in asset allocations over the long term. The **PORTFOLIO ASSET ALLOCATION** section highlights how endowments have evolved in investing their portfolios from the early 2000s to today, with a particular focus on the increased equity exposure that endowments have taken on in recent years. This section also incorporates data on target asset allocations to lend insights into how institutions are altering their portfolios heading into the future.

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

Meanwhile, the **INSTITUTIONAL SUPPORT** section contains analyses that highlight how much colleges and universities rely on their endowments to support their annual operating budgets. Also included in this section are exhibits on spending policies, portfolio inflows and outflows, operating funds, and endowment market values relative to outstanding debt.

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

Section 1: Investment Portfolio Returns

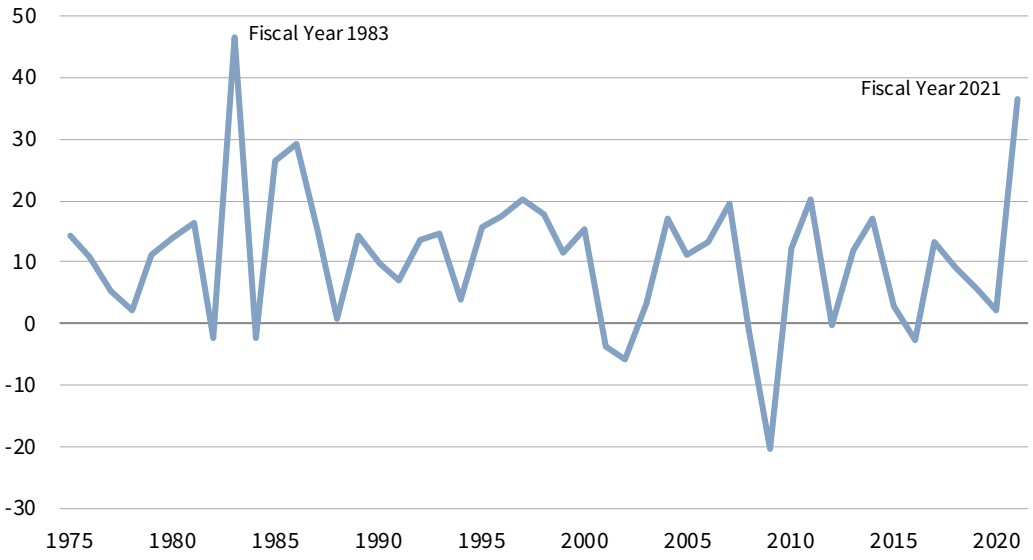
RETURNS IN FISCAL YEAR 2021

The fiscal year 2021 capital market environment picked up where the previous year left off with the continuation of a rebound in risk assets. Global public equity markets fully recovered their pre-COVID-19 peaks early in the fiscal year and pushed forward to new highs throughout the rest of the year. Private equity and venture capital—which had not seen the same steep declines that the public equity markets had experienced—had even more of a banner year in 2021. The result was a fiscal year that will long be remembered in the endowment world for exceptional investment performance and asset growth.

For many endowments, the fiscal year brought about the best investment performance that they had earned in a generation (Figure 1). Of the institutions that have provided us year-by-year performance data over the last 30 fiscal years, 90% (85 of 94) reported that the highest single-year return from that period was in 2021. In fact, across the four-plus decades in which CA has been collecting and analyzing endowment performance, only in 1983 was the median return higher than what was calculated for this past fiscal year.

FIGURE 1 TRAILING 1-YR MEDIAN RETURNS

Fiscal Years 1975–2021 • Periods Ended June 30



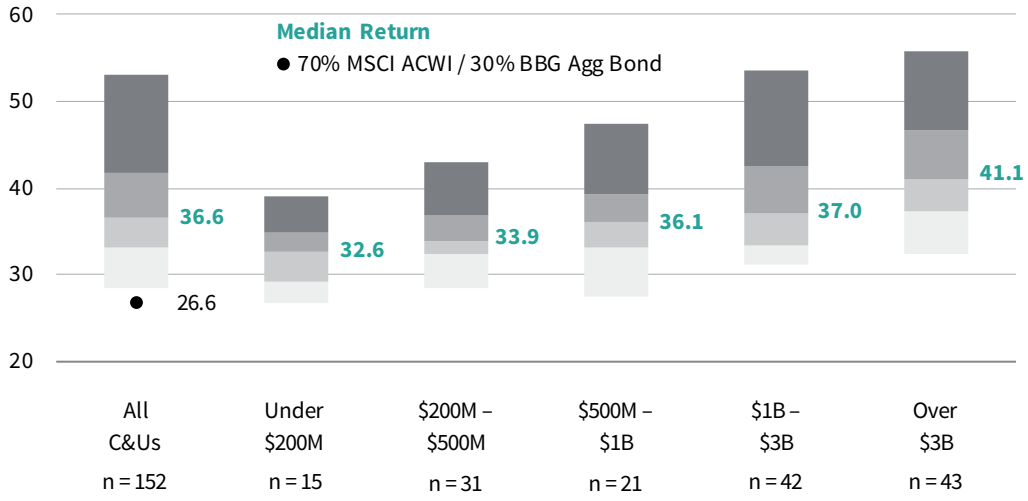
Source: College and university data as reported to Cambridge Associates LLC.

Note: The number of institutions included in the median calculation varies from one period to the next, ranging from 31 in 1975 to 152 in 2021.

The median return for the CA college and university universe was 36.6% for fiscal year 2021. Endowments of all asset sizes in this study reported exceptional returns, with each of the five asset size cohorts in Figure 2 reporting a median return above 30%. When measured against a simple benchmark consisting of 70% MSCI ACWI and 30% Bloomberg Aggregate Bond Index, 99% of all participating endowments reported a

return that exceeded that benchmark. Still, there was a significant degree of dispersion in the returns reported across the participant universe. The largest endowments tended to report the best returns, with those greater than $3 billion reporting the highest median return (41.1%) across the various subgroups. Meanwhile, those with assets less than $200 million reported a median return that was more than 800 basis points (bps) lower at 32.6%.

FIGURE 2 FISCAL YEAR 2021 TOTAL RETURN PERCENTILES
Trailing 1-Yr as of June 30, 2021 • Percent (%) • By Percentile Ranking



Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.
Note: For more information, see page 65 in the Appendix.

PERCENTILE RANKINGS

The percentile rankings in our analysis are in ascending order so that the highest figure in the data set is 0 and the lowest figure is 100. The graphs throughout this report that show a range of data are organized to highlight various percentile breaks as displayed here.

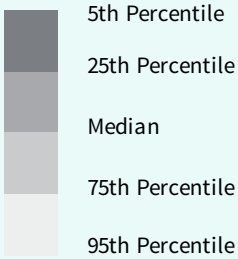
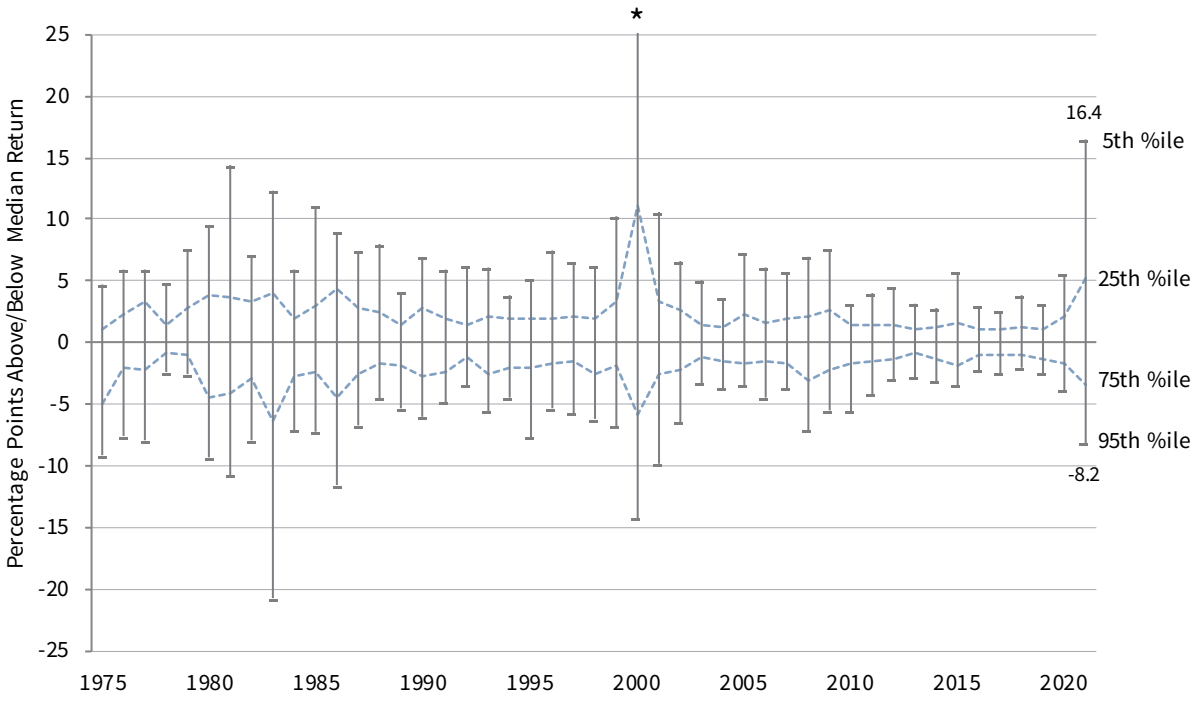


Figure 3 considers the dispersion in fiscal years returns across the participant universe along with the historical context. After a decade of less variation in returns compared to past eras, the levels of dispersion jumped dramatically in 2021. This is most evident at the top end of the universe, where the 5th percentile return (53.0%) was 16.4 percentage points (ppts) higher than the median return. The top quartile mark, at 41.8%, was 5.2 ppts higher than the median return. Both figures were the second highest at their respective percentile marks that we have observed going back to the mid-1970s. The only fiscal year that the margins were greater was in 2000, which represented the peak of the "dot-com" bubble and venture capital boom of that era.

FIGURE 3 DISPERSION IN TRAILING 1-YR RETURNS RELATIVE TO THE MEDIAN RETURN

Fiscal Years 1975–2021 • Periods Ended June 30



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

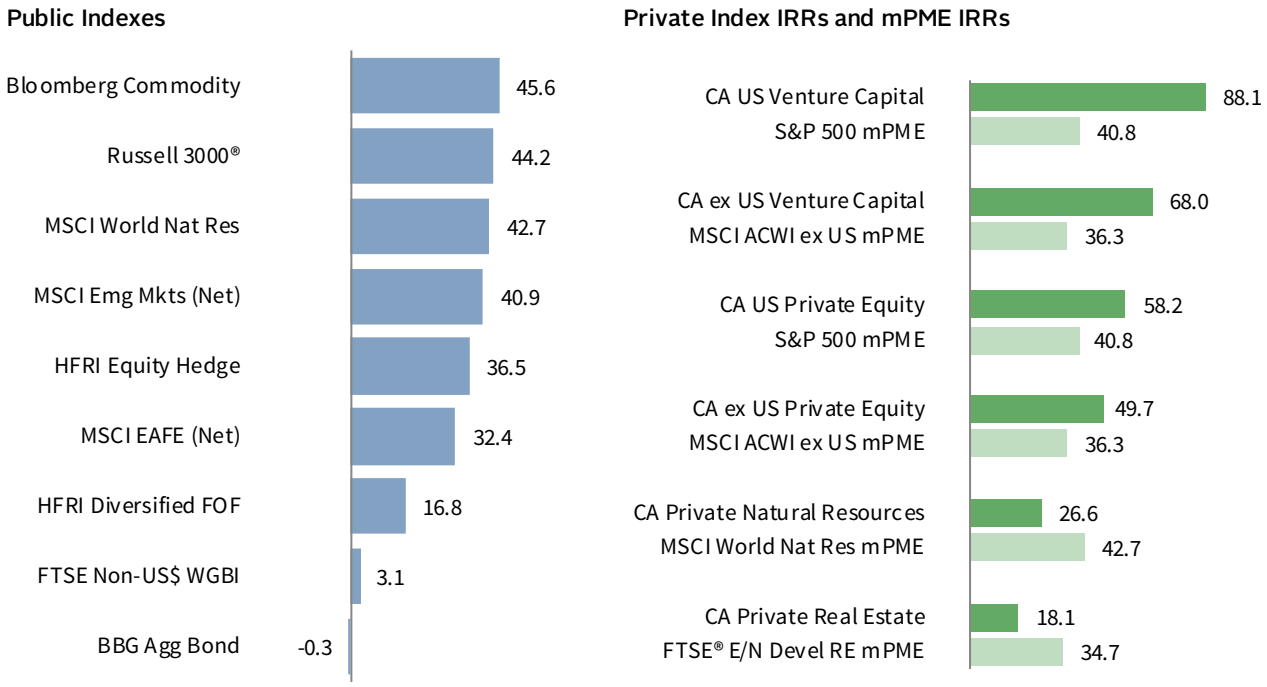
* The graph scaling is capped at +/- 25 for display purposes. The 5th percentile return in 2000 was 34.3 percentage points higher than the median return.

The biggest similarity between this past year and 2000 was the extraordinary performance of venture capital. The CA US Venture Capital Index produced a horizon internal rate of return (IRR), net of fees, expenses, and carried interest, of 88.1% in fiscal year 2021 (Figure 4). This more than doubled the S&P 500 Index's return of 40.8% as computed under the modified public market equivalent (mPME) methodology. The mPME analysis computes public market performance—which traditionally is reported as a time-weighted return—on an IRR basis and allows for a direct comparison of returns between public and private markets. The result of the mPME calculation is the return that would have been earned had the capital invested in the private strategy been invested in the public market index instead. Returns were also stellar for the global ex US version of the venture capital index and both private equity indexes, with all performing significantly better than the mPME benchmarks.

On the public index side, strong returns were reported for long-only equities and real assets–related strategies. Even the HFRI Equity Hedge Index, which represents long/short equity hedge funds strategies, posted a return in the mid-30s for the fiscal year. In contrast, investment-grade fixed income strategies performed poorly, with the Bloomberg Aggregate Bond index reporting a slightly negative return (-0.3%).

FIGURE 4 1-YR INDEX RETURNS

As of June 30, 2021 • Percent (%)



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

The market backdrop for fiscal year 2021 helps bring to light some of the key factors that contributed to the historically large variation in endowment performance. Asset allocation is always the first place we start when analyzing peer performance, and the differences in asset allocations across participating endowments typically correlate with the market environment. This was especially the case this past year where the top-performing endowments had the highest allocations to the best-performing asset classes and vice versa.

The heat map analysis in Figure 5 breaks the participant group into four quartiles based on fiscal year 2021 performance and displays the average allocation across the one-year period for the endowments within each quartile. The top performance quartile stood out in the breakdown of the average total equity allocation, with nearly the same proportion allocated to public equity (32.7%) and PE/VC (30.7%). Digging into the total PE/VC figure, we see that most of the allocation for top-performing endowments came from venture capital, which made up 18.2% of the portfolio on average. This allocation was substantially higher than for any of the other performance quartiles and—along with the extraordinary performance produced by venture capital investments—helps explain why the top quartile of endowments performed so well in fiscal year 2021.

Another category where allocations varied quite a bit among participants was in fixed income. Given the enormous spread in returns between equities and fixed income over the past year, it is not surprising to learn that endowments with the highest bond allocations tended to have the lowest performance. The bottom quartile of performers reported the highest average allocation to fixed income (11.6%), while those in the top performance quartile reported an average allocation that was considerably lower (4.3%).

FIGURE 5 1-YR MEAN ASSET ALLOCATION BY PERFORMANCE QUARTILE
Percent (%) • n = 150

		Private Equity & Venture Capital								
Quartile	Public Equity	Total PE/VC	VC	PE	Other PI	Hedge Funds	Real Assets	Fixed Income	Private Credit	Cash & Other
Top Quartile	32.7	30.7	18.2	11.3	1.2	18.2	8.2	4.3	1.6	4.3
2nd Quartile	38.7	24.0	10.9	12.1	1.0	17.2	8.3	6.1	2.0	3.6
3rd Quartile	44.2	16.0	5.6	7.8	2.5	16.3	8.1	8.3	1.6	5.5
Bottom Quartile	49.9	10.8	2.8	5.6	2.3	15.4	6.2	11.6	1.6	4.5
All C&U Mean	41.4	20.4	9.4	9.2	1.8	16.8	7.7	7.6	1.7	4.5

Divergence of Asset Allocation from All C&U Mean

-4% or lower | -2% | Mean | 2% | 4% or higher

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

Notes: Asset allocation is averaged across the two June 30 periods from 2020 to 2021 for each institution in this analysis. Other PI consists primarily of multi-strategy FOFs, secondaries, and other private funds that can't be allocated solely to venture capital or non-venture private equity.

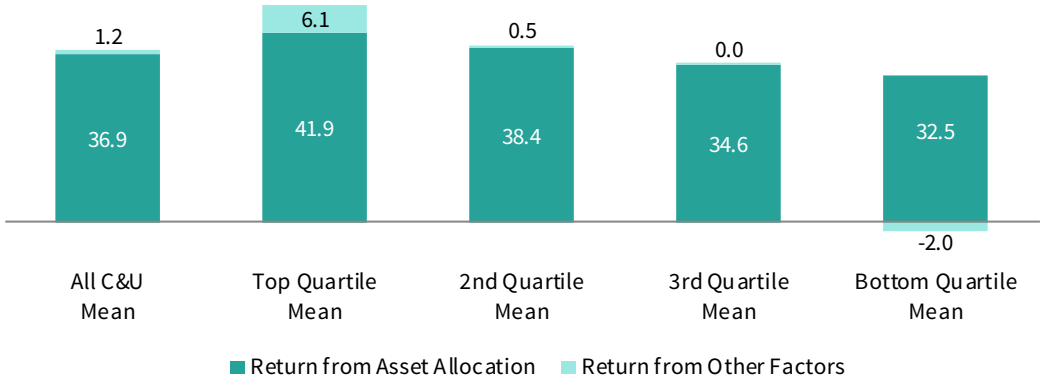
While the heat map analysis highlights asset classes that are important in understanding the fiscal year 2021 performance story, our attribution analysis goes a step further and quantifies the performance impact of those different asset allocation structures. The attribution analysis we use for Figure 6 assigns a specific index return to represent each asset class in our framework. For each endowment in our universe, we have calculated a blended index return that is based on the portfolio's beginning fiscal year asset allocation.[1] The result of this calculation is the "return from asset allocation" and represents what the endowment would have earned if it was managed passively throughout the year. The average asset allocation return for the top quartile of performers was 41.9%, which was a whopping 940 bps higher than the average of the bottom performance quartile (32.5%). These results, when paired with the heat map analysis, clearly demonstrate that differences in private investment asset allocations played a key role in the historically wide dispersion in endowment returns this past year.

1 See the Appendix of this report for a list of asset class indexes used and an example of how the analysis is conducted using the participant group's mean asset allocation.

However, asset allocation alone is not the only driver of endowment performance, as implementation of the allocations is an important piece to consider. Implementation is primarily driven by the effects of active management, or alpha. In addition, there is a performance impact if an asset allocation structure is altered or rebalanced in the middle of the fiscal year. Our attribution analysis aggregates these effects into the "return from other factors" category. The analysis estimates that the top quartile of performers added an average of 6.1% to their returns from these other factors in fiscal year 2021. In contrast, the average for the bottom quartile of performers was -2.0%. While that gap was not quite as wide as the spread in asset allocation returns, these other factors are also key to understanding why top performers separated themselves so much from the rest of the pack in 2021.

FIGURE 6 1-YR ATTRIBUTION ANALYSIS

Trailing 1-Yr as of June 30, 2021 • Percent (%) • n = 150



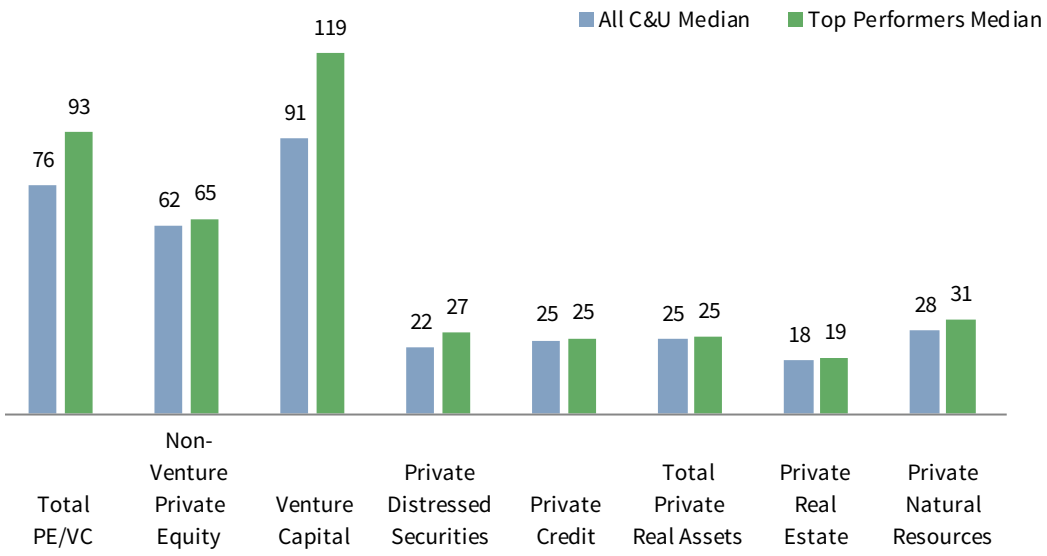
Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 65 in the Appendix.

The attribution analysis establishes that there are differentials among endowments in the performance impact from implementation. A key driver of these differentials is the returns that participants earn for the asset class strategies in their portfolios. This was most evident this past year in venture capital, where many endowments reported exceptional performance. The median one-year IRR among participants was 91%, but the full range of returns was staggering. Even after removing the top and bottom 5% of outliers, the 5th percentile return (155%) was more than 100 ppts higher than the 95th percentile (53%).

Figure 7 also isolates the top performance quartile as defined by the fiscal year 2021 total return and displays the median private investment IRRs for that subgroup. The median venture capital return for top performers was 119%, which was well above the median return of the full universe. The effect of this on total return comparisons is magnified considering that top performers now allocate nearly one-fifth of their portfolio to this strategy, on average. Not only did top performers have the highest allocation to the asset class that produced the best returns in fiscal year 2021, but they generally outperformed other participating institutions in this strategy by significant margins.

FIGURE 7 MEDIAN C&U 1-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 1-Yr as of June 30, 2021 • Percent (%)



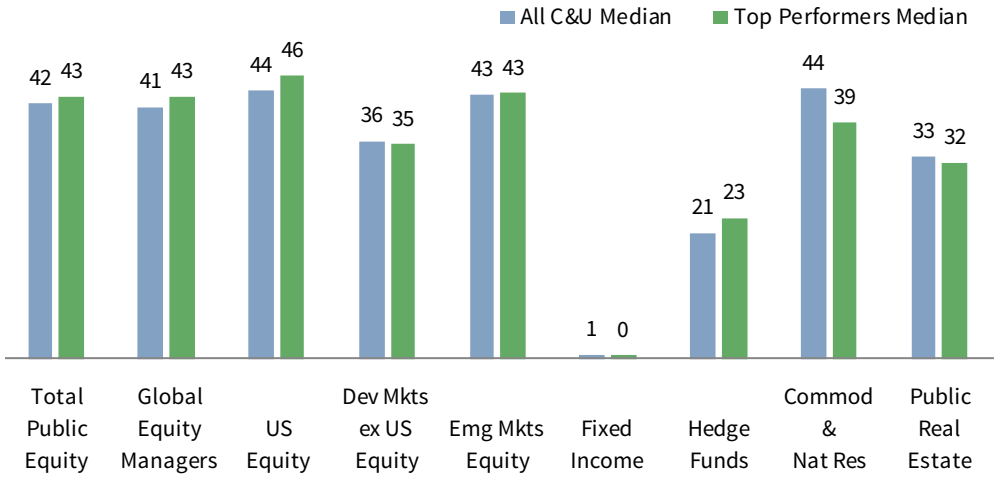
Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, including the number of participants, see page 66 in the Appendix.

On the public side, the two strategies where top performers posted the best median returns relative to the overall peer group were in US equity and hedge funds (Figure 8). The median return of top performers was approximately 200 bps higher than the median return of the overall universe in both categories. This is notable because the combined allocation to these strategies represents nearly one-third of the average portfolio of top performers. Conversely, the top quartile of endowments tended to not perform as well as the overall universe in commodities/natural resources. However, these strategies make up just 1% of the average portfolio and, as a result, have a negligible impact when assessing the key drivers of peer performance comparisons.

FIGURE 8 MEDIAN C&U 1-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 1-Yr as of June 30, 2021 • Percent (%)



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

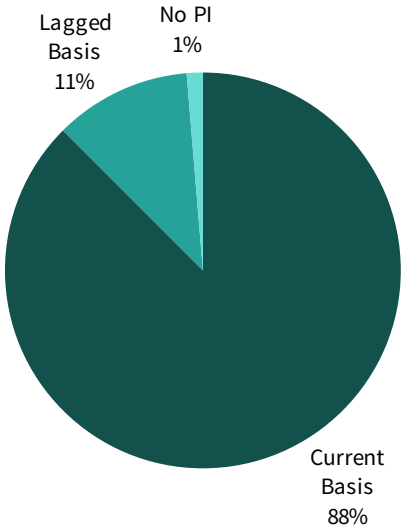
Note: For more information, including the number of participants, see page 67 in the Appendix.

RETURN CALCULATION METHODOLOGIES

The vast majority of participants (88%) in this study incorporate private investment marks into the fiscal year total return calculation on a current basis (Figure 9). For these endowments, private investment performance is time-matched with the actual trailing one-year period and reflects investment activity from July 1, 2020, to June 30, 2021. In contrast, under the lagged basis, private investment marks perpetually lag other assets in the portfolio by one quarter; the total return captures private investment performance from April 1, 2020, to March 31, 2021. The percentage of respondents that use the lagged basis has gradually declined over time, with just 11% of respondents using this methodology in 2021 compared to 19% from our 2011 study.

FIGURE 9 PERFORMANCE REPORTING METHODOLOGIES: PRIVATE INVESTMENTS
As of June 30, 2021

All Colleges and Universities



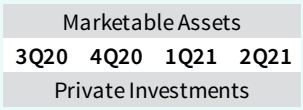
C&Us By Asset Size

	Current Basis	Lagged Basis	No PI Allocation
Under $200M	87%	—	13%
n	*13*		*2*
$200M–$500M	100%	—	—
n	*31*		
$500M–$1B	86%	14%	—
n	*18*	*3*	
$1B–$3B	86%	14%	—
n	*36*	*6*	
Over $3B	81%	19%	—
n	*35*	*8*	

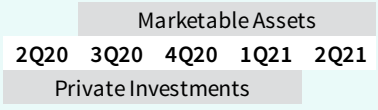
Source: College and university data as reported to Cambridge Associates LLC.
Note: Institutions with no significant private investment allocations (<1% of their total investment portfolios) are reflected in the No PI Allocation category in the pie graph and table by asset size.

PERFORMANCE METHODOLOGY DESCRIPTIONS

Current Basis
Total investment pool return for the trailing one-year period includes marketable asset performance and private investment performance for July 1, 2020, to June 30, 2021.



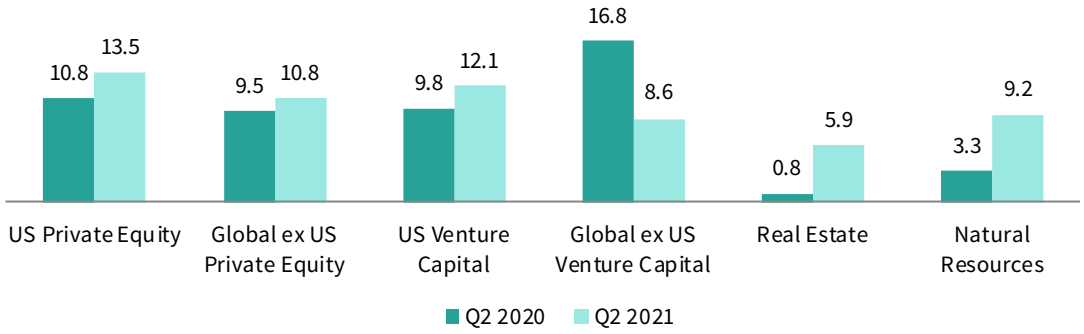
Lagged Basis
Total investment pool return for the trailing one-year period includes marketable asset performance for July 1, 2020, to June 30, 2021, and private investment performance for April 1, 2020, to March 31, 2021.



There is a performance impact to using one methodology over the other. The issue is less significant for longer measurement periods, as the performance impact is diminished through the annualized return calculation. However, the choice of private reporting methodology can be an important factor to consider when conducting peer performance comparisons over short-term periods. When assessing the impact of the two methods for fiscal year 2021, the focus should be on both second quarter 2020 and second quarter 2021. With the lagged basis methodology, performance for the former period will be included in the one-year total return calculation, and performance for the latter period will be excluded.

Figure 10 shows the returns of several CA private investment indexes for second quarter 2021 and the same quarter one year earlier. Except for global ex US venture capital, the returns for the 2021 period were higher than those reported for 2020 across the various strategies. This would point to the current method producing a higher return for an endowment in fiscal year 2021 compared to the lagged basis. However, each endowment's results will be dependent upon its actual fund returns and specific allocation mix.

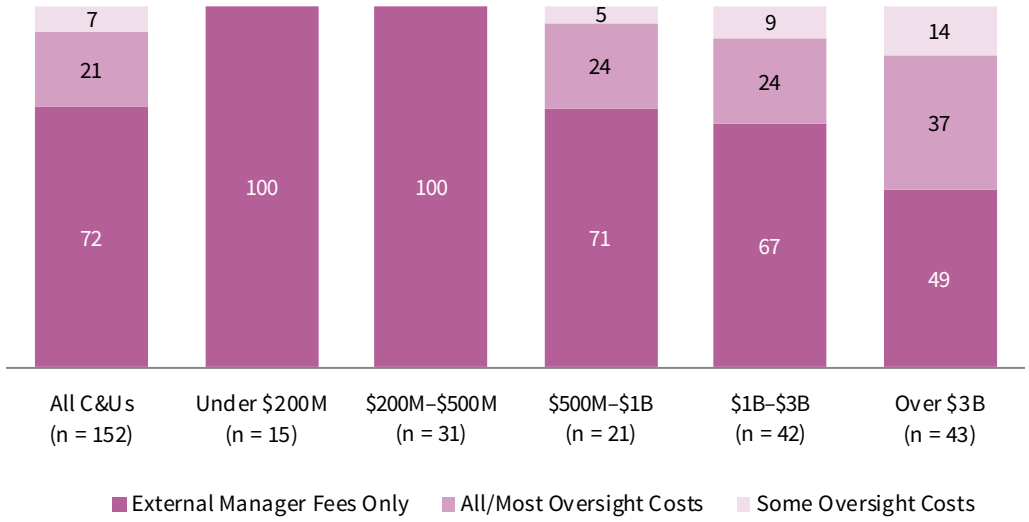
FIGURE 10 CAMBRIDGE ASSOCIATES' PRIVATE INVESTMENT INDEX IRRs
Percent (%)



Source: Cambridge Associates LLC.
Note: Private investment return statistics are reported as horizon IRRs.

Another reporting issue that can impact peer return comparisons is the method in which net returns are calculated. While each endowment in this study provided performance on a net-of-fees basis, the types of fees deducted in the net return calculation differ among participants. Just under three-quarters of respondents (72%) reported returns net of external manager fees only for fiscal year 2021 (Figure 11). Another 21% of respondents deduct external manager fees plus all or most of investment oversight expenses. The main drivers of these costs tend to be staff compensation for those institutions that have internal investment offices or consultant/advisor fees for those that rely heavily on external investment advisors. The remaining 7% of respondents deduct external manager fees plus some additional costs but are gross of the major oversight cost expenses.

FIGURE 11 TYPES OF FEES DEDUCTED IN FY 2021 NET RETURN CALCULATION
As of June 30, 2021 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Notes: Institutions in the All/Most Oversight Costs category net out all or the majority of oversight costs, including the major cost drives (e.g., investment staff compensation and consultant/advisor fees). Institutions in the Some Oversight Costs category deduct external manager fees and some investment oversight costs, but are gross of the major cost drivers.

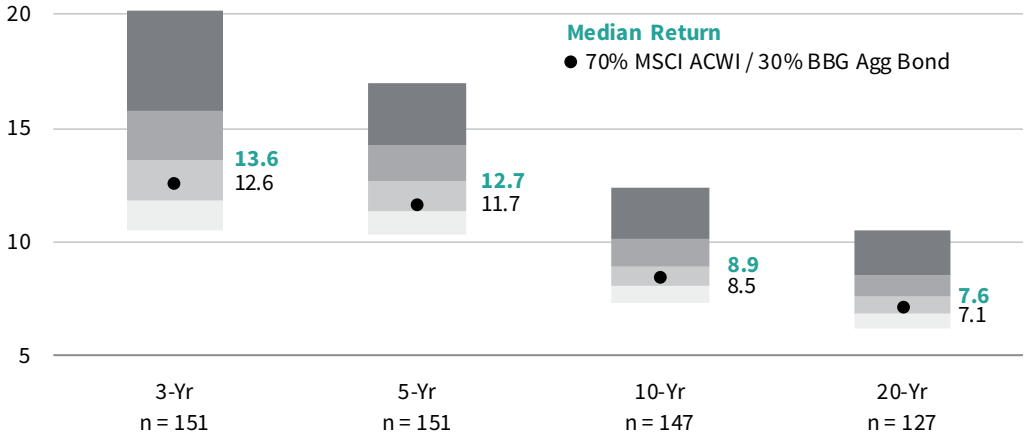
Smaller endowments are much less likely to deduct oversight costs compared to larger endowments. There was not a single endowment less than $500 million in this study that deducted investment oversight costs in their net return calculation. In contrast, more than half of endowments with asset sizes greater than $3 billion reported returns net of some or all/most oversight expenses, with a significant percentage (37%) netting out the major cost drivers. A cost survey that CA conducted in 2020 found that average total oversight expenses came out to approximately 18 bps among the survey's sample group. However, the scale of assets is an important factor as costs in basis points tend to be lower for larger endowments compared to smaller endowments.

LONGER-TERM RETURNS

Strong returns for fiscal year 2021 contributed to most endowments outperforming a simple 70/30 benchmark over longer-term trailing periods. The spread between the median participant return and the simple benchmark was 100 bps for both the trailing three- and five-year periods (Figure 12). The margin for both trailing periods was the largest we have calculated for our college and university universe since June 30, 2008. Fiscal year 2021 will remain in these trailing periods for the next few years, meaning strong relative performance for the endowment median will likely continue for the foreseeable future. The differentials between the median return and the benchmark were smaller, but still positive, for the trailing ten- and 20-year periods at 40 and 50 bps, respectively.

FIGURE 12 TOTAL RETURNS SUMMARY: TRAILING 3-, 5-, 10-, AND 20-YR

Years Ended June 30, 2021 • Percent (%) • By Percentile Ranking



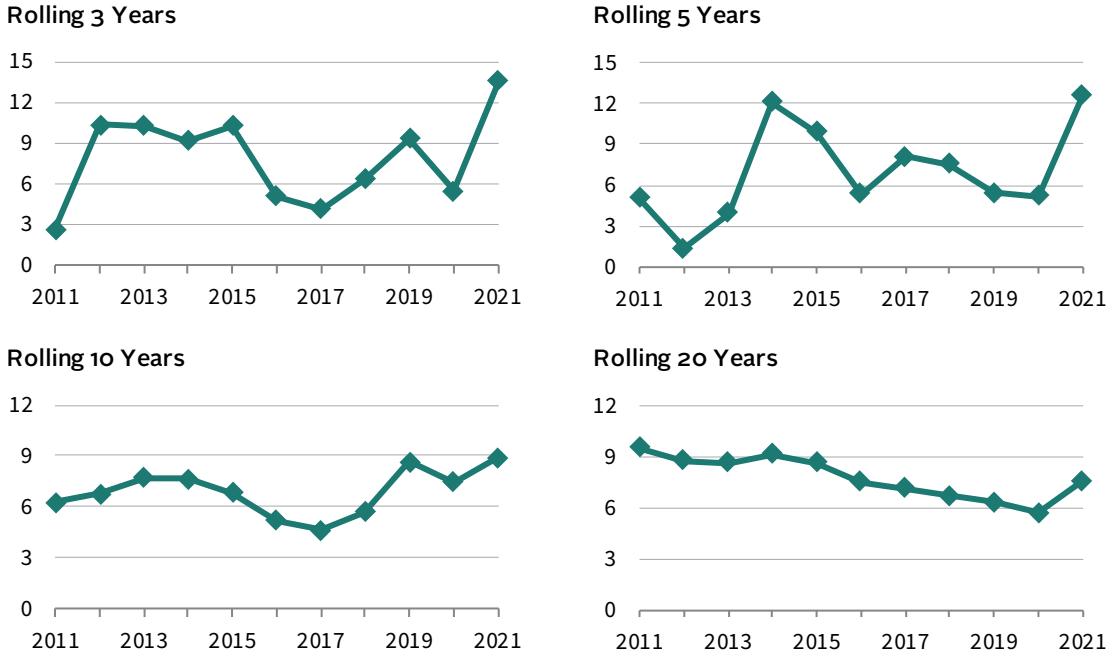
Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Note: For more information, please see page 68 in the Appendix.

The fiscal year 2021 period also led to strong endowment performance on an absolute basis over these trailing periods. The median endowment return for the trailing three- and five-year periods were both well into the double digits and were the highest we have calculated for those rolling periods from the past decade. The trailing ten-year median return was just shy of 9%, but similarly was the highest reported for the group from the periods listed in Figure 13. The rolling 20-year analysis shows more of a prolonged downward trend in the median return until fiscal year 2021, when the median return spiked back up substantially.

FIGURE 13 ROLLING MEDIAN RETURNS: TRAILING 3-, 5-, 10-, AND 20-YR

Years Ended June 30 • Percent (%)

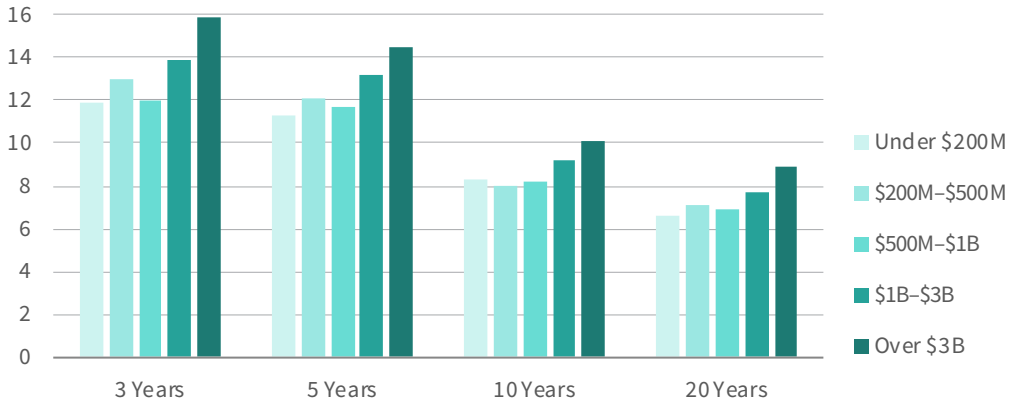


Source: College and university data as reported to Cambridge Associates LLC.

Note: The number of institutions included in the median calculation varies from one period to the next, and is smaller in earlier years compared to the present day.

As we already reviewed in the fiscal year 2021 return analyses, the largest endowments tended to outperform smaller endowments by significant margins. The same was true over the long term as well, with the median return of the over $3 billion cohort outperforming the median of the other asset size groups (Figure 14). This group's median return for the trailing three-year period (15.9%) was 400 bps higher than the median for endowments less than $200 million (11.9%). While the spreads were narrower for longer-trailing periods, it was still a considerable 230 bps for the trailing 20-year period.

FIGURE 14 MEDIAN TRAILING 3-, 5-, 10-, AND 20-YR RETURNS BY ASSET SIZE
Years Ended June 30, 2021 • Percent (%)

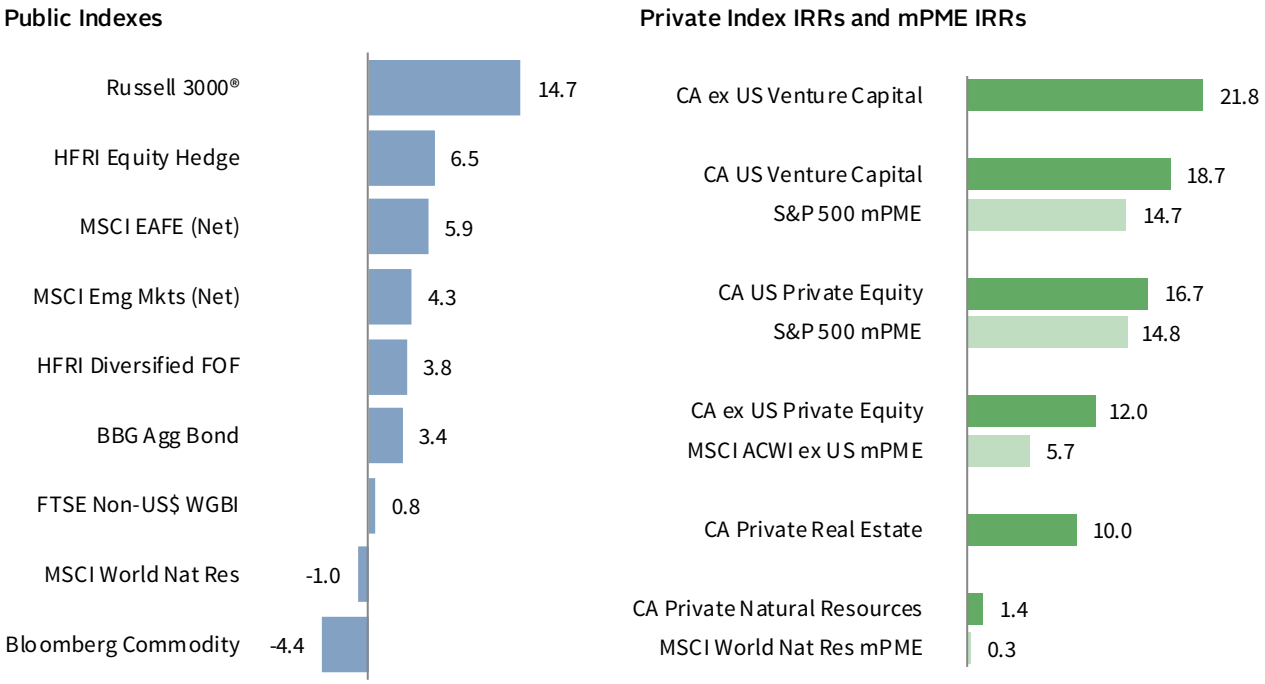


Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, please see page 68 in the Appendix.

Many of the same dynamics that drove returns for fiscal year 2021 also played out over the long term. Venture capital was the highest-performing asset class over the trailing ten-year period as measured by the index returns in Figure 15. Non-venture private equity strategies also produced returns that outperformed their mPME benchmarks over the last decade. Among the public benchmarks, the US stock market as represented by the Russell 3000® Index was by far the top-performing strategy. Meanwhile, the low interest rate environment of the last decade resulted in historically low returns for investment-grade fixed income strategies.

FIGURE 15 10-YR INDEX RETURNS

As of June 30, 2021 • Percent (%)



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

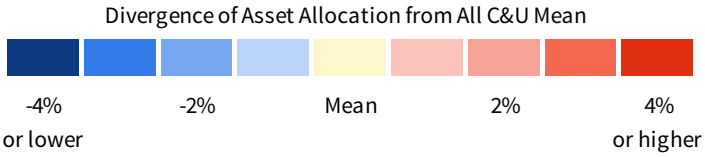
This market backdrop leads us to explore the differences in asset allocations among endowments over the last decade. The heat map analysis in Figure 16 averages asset allocation data of participating endowments across the 11 periods ending June 30 from 2011 to 2021 and places each endowment into the performance quartile that aligns with their ten-year peer return ranking. The four quartiles in the table represent the average of the endowments that fell within each quartile.

The average combined allocation to public equity and PE/VC does not vary much at all among the four subgroups of participants. However, there is a clear distinction in the mix between public and private equities when looking across the performance quartiles. The top quartile of performers had the highest average allocation to PE/VC (24.0%) with just over half of that coming from venture capital alone (12.1%). In contrast, the bottom quartile has the lowest average allocation to total PE/VC (9.4%). The results were the inverse for public equity, with top performers having the lowest average allocation (29.5%) and the bottom quartile having an average that was substantially higher (43.3%).

FIGURE 16 10-YR MEAN ASSET ALLOCATION BY PERFORMANCE QUARTILE

Percent (%) • n = 116

Quartile	Public Equity	Private Equity & Venture Capital: Total PE/VC	VC	PE	Other PI	Hedge Funds	Real Assets	Fixed Income	Private Credit	Cash & Other
Top Quartile	29.5	24.0	12.1	11.2	0.6	23.8	13.1	5.0	0.9	3.8
2nd Quartile	36.2	17.4	7.0	9.7	0.7	21.3	12.4	7.0	1.7	3.9
3rd Quartile	44.0	10.8	4.4	5.2	1.2	20.0	10.3	10.3	1.3	3.3
Bottom Quartile	43.3	9.4	3.2	5.2	1.0	18.8	9.8	11.8	1.4	5.5
All C&U Mean	38.3	15.4	6.7	7.8	0.9	21.0	11.4	8.5	1.3	4.1



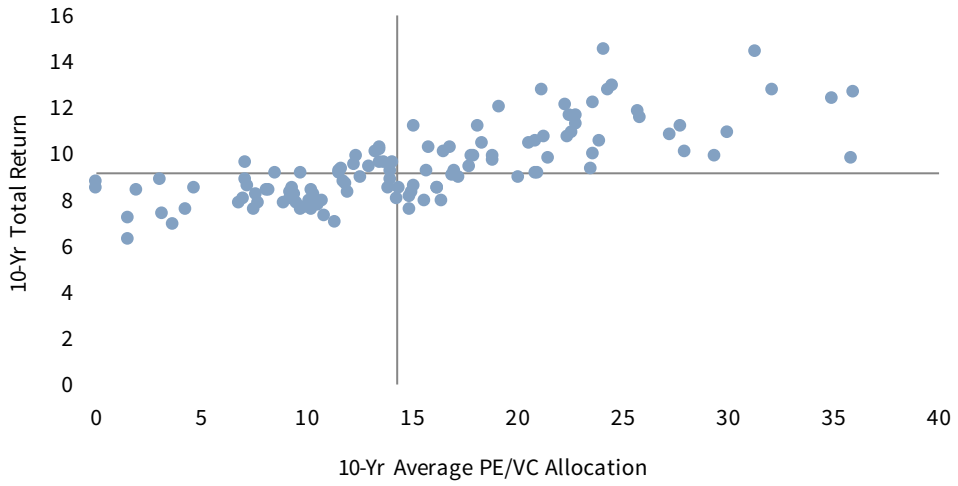
Source: College and university data as reported to Cambridge Associates LLC.

Notes: Asset allocation is averaged across the 11 periods ending June 30 from 2011 to 2021 for each institution in this analysis. Other PI consists primarily of multi-strategy FOFs, secondaries, and other private funds that can't be allocated solely to venture capital or non-venture private equity.

Another way to visualize the relationship between PE/VC allocations and relative peer performance is by plotting endowment data on a scatterplot. In Figure 17, each C&U that reported data over the last decade is represented by a dot based on where its ten-year average allocation to PE/VC intersects with its trailing ten-year return. The data do not show a perfect relationship—some endowments that have above-median allocations to PE/VC had below-median total returns over the trailing ten-year period, and vice versa. However, there is a clear trend from left to right on the scatterplot as endowment performance tends to be higher as the allocation to PE/VC increases.

FIGURE 17 10-YR PE/VC ALLOCATION VS TOTAL RETURN

As of June 30, 2021 • n = 116



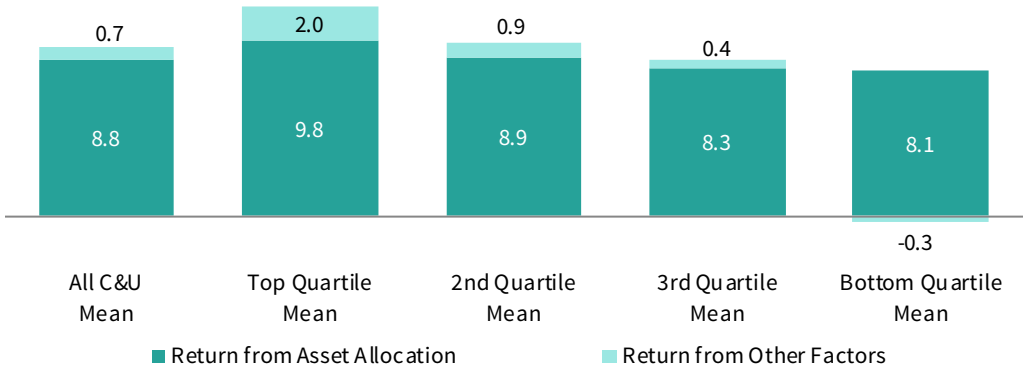
Source: College and university data as reported to Cambridge Associates LLC.

Note: The lines that traverse the graph are drawn where the median PE/VC allocation among participants intersects with the median 10-year participant return.

There were also notable differences among endowments elsewhere in the asset allocation framework (Figure 16). The next largest differential was in fixed income, where top performers had the lowest average allocation (5.0%) over the past decade, while the bottom quartile of performers had the highest allocation (11.8%). In hedge funds, the top performance quartile had the highest average allocation (23.8%) among the four subgroups of endowments. Although the detail on hedge funds is not shown in the heat map table, top performers had the highest average allocations to equity-oriented long/short strategies, while endowments in the other performance quartiles were more heavily weighted toward absolute return–type strategies. The top quartile of performers also had the highest average allocations to real assets (13.1%), with the vast majority of those underlying allocations coming from private strategies.

The attribution model further illustrates the impact of different asset allocation structures on the trailing ten-year return. The average asset allocation return over this period for the top quartile of performers was 9.8% (Figure 18). For the bottom quartile of performers, the average asset allocation return was 170 bps lower at 8.1%. The attribution model estimates that the gap was even wider for the portion of return that is explained by other factors, such as implementation. The average return from other factors for top performers was 2.0%, which was 230 bps higher than the average of the bottom quartile (-0.3%).

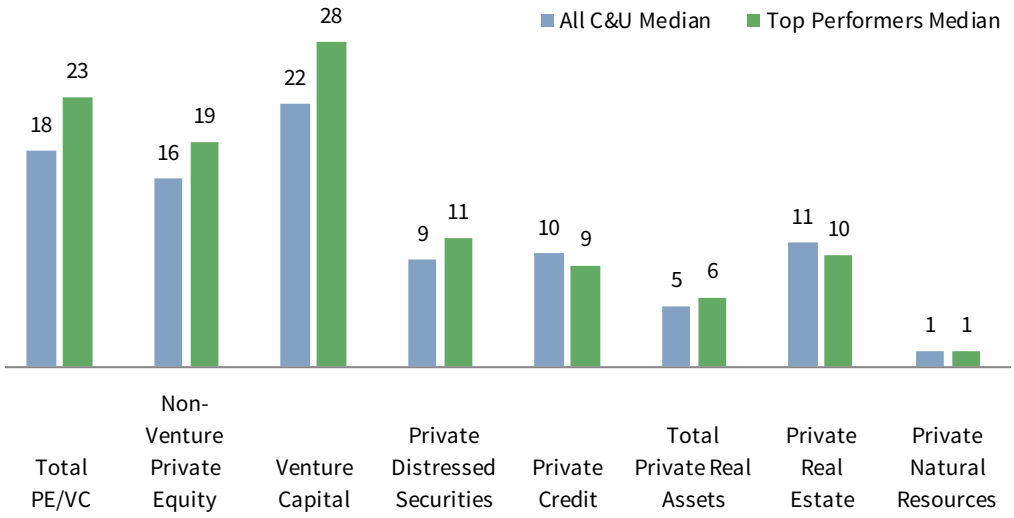
FIGURE 18 10-YR ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE
As of June 30, 2021 • Percent (%) • n = 116



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

The endowments that reported the highest total returns over the past decade not only had the largest allocations to PE/VC, but also tended to earn the best performance among peers in these strategies as well. The median venture capital IRR for the top-performing endowments was 28% over the trailing ten-year period, approximately 600 bps higher than the median for the overall C&U universe (Figure 19). The differential was smaller for non-venture private equity, but still substantial at 300 bps. With PE/VC representing nearly one-quarter of the average portfolio for top performers, the superior performance that the top-performing endowments earned in these strategies was a key reason they had the best implementation returns in the attribution model.

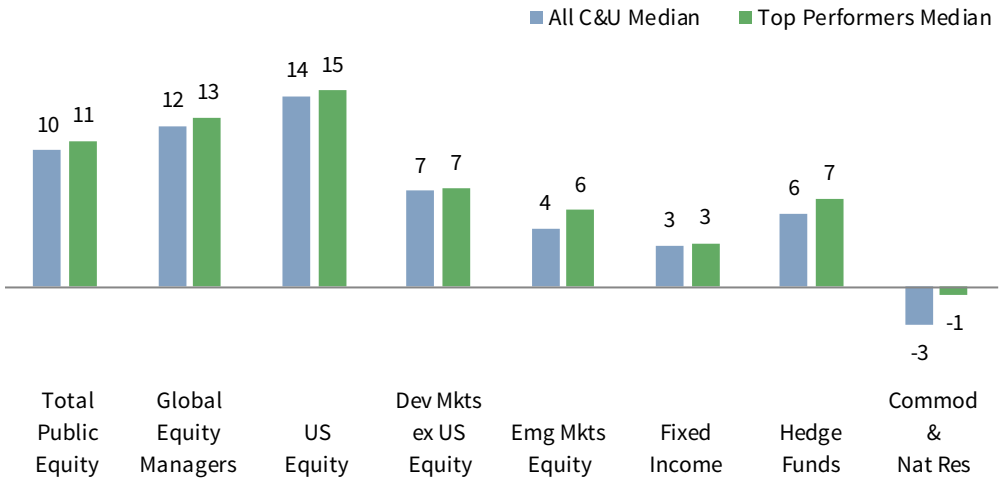
FIGURE 19 MEDIAN C&U 10-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS
Trailing 1-Yr as of June 30, 2021 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information including the number of participants, see pages 69 and 70 in the Appendix.

As is typically the case, there was less variation in the returns reported by participants in marketable asset classes (Figure 20). The median return of top performers was higher than the median of the overall universe in most categories, but by smaller margins compared to those reported in PE/VC. The full percentile breakdown of asset class returns across the trailing three-, five-, and ten-year periods is included in the Appendix of this report.

FIGURE 20 MEDIAN C&U 10-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS
Trailing 10-Yr as of June 30, 2021 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information including the number of participants, see pages 71 and 72 in the Appendix.

INFLATION-ADJUSTED RETURNS

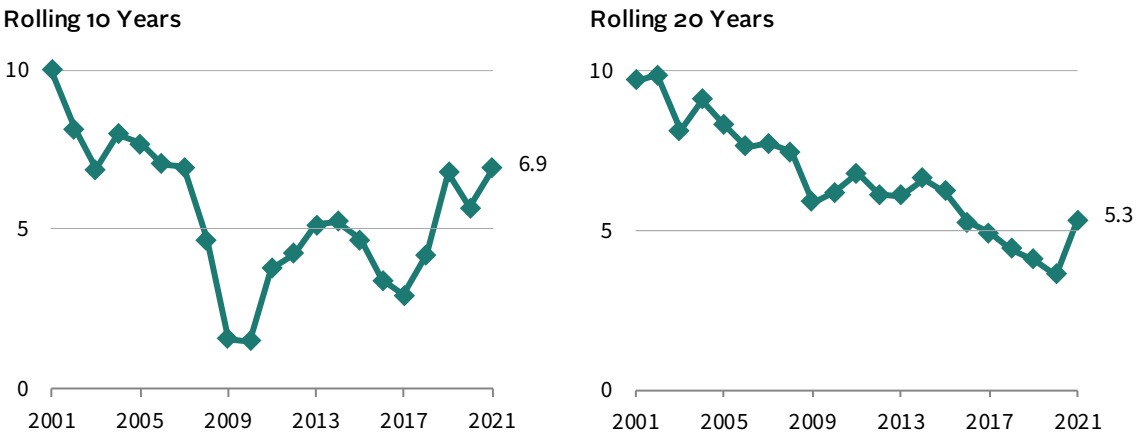
A primary objective when managing an endowment is to preserve, and perhaps even grow, the purchasing power of its assets over the long term. Most endowments and foundations over the long term have aimed to earn at least a 5% real return in pursuit of this goal. Meeting the real return target allows an endowment to offset the erosion of purchasing power caused by inflation and replenish the annual spending that is drawn from the portfolio.[2]

The task of earning 5% on a real basis over the long term has become significantly more challenging than it once was. Figure 21 displays the trailing ten- and 20-year median real return for the participant group going back to 2001. At the beginning of this historical period, the trailing ten-year median was nearly double the 5% threshold. By 2008, as the impact of the Global Financial Crisis (GFC) was beginning to be felt worldwide, the median ten-year return had fallen below 5% and it stayed below this level for much of the ensuing decade. Only in 2019, after the GFC track record was removed from the rolling calculation, did the median surge well above 5%. As of June 30, 2021, the ten-year median real return was 6.9% and was at its highest level since 2007.

The median 20-year real return was also near 10% where Figure 21 begins in 2001. This statistic steadily trended downward over the past two decades and fell below the 5% mark in 2017. The performance from fiscal year 2021 was a boon to the 20-year track record and pushed the median endowment return back above 5%. The Asset Allocation section of this report will detail how endowments have responded to this more challenging return environment by raising allocations to equity-oriented assets and reducing allocations to fixed income and other lower-volatility assets.

2 See the Investment Policy section of this report and Figure 24, specifically, for more information on this topic. While 5% has traditionally been the most common real return target, the exact % can be higher or lower depending an institution's specific objectives.

FIGURE 21 ROLLING MEDIAN REAL RETURNS: TRAILING 10- AND 20-YR
Years Ended June 30 • Percent (%)

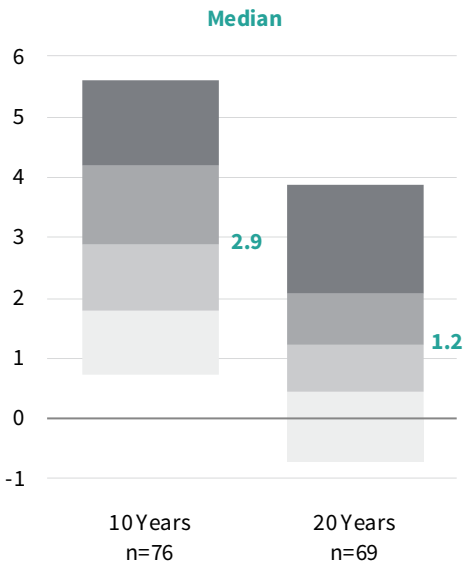


Source: College and university data as reported to Cambridge Associates LLC.
Note: The number of institutions included in the median calculation varies from one period to the next and is smaller in earlier years compared to the present day.

Of the endowments that provided spending rate data for the last ten years, each reported a real return after spending that was above 0% for this historical period. The significance of this is that each of these endowments experienced asset growth even after the effects of inflation and spending were removed from the equation. The median real return after spending for the trailing ten-year period was 2.9% (Figure 22). For the trailing 20-year period, more than 80% of responding endowments reported a real return after spending that was above 0%, with the median at 1.2%.

FIGURE 22 10-YR REAL RETURNS AFTER SPENDING

As of June 30, 2021 • Percent (%) • By Percentile Rankin



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

Note: For more information, see page 72 in the Appendix.

RISK-ADJUSTED RETURNS

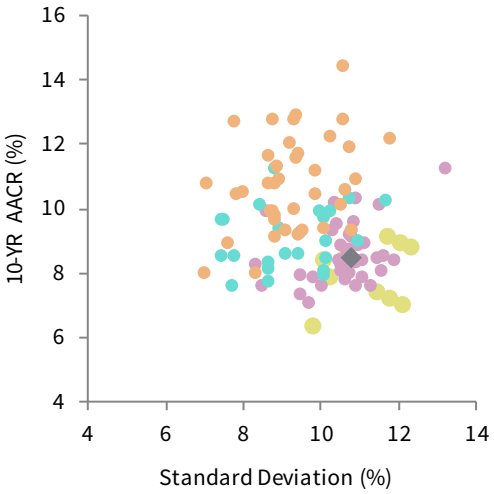
Risk-adjusted performance is important to evaluate, as it measures the total return relative to the total amount of risk taken by the portfolio. The most common approach to measuring risk-adjusted performance is by the Sharpe ratio, which shows how much return above the risk-free rate (T-bills) the investor 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 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 relative to portfolios that have higher public equity allocations. For this reason, we have split endowments out into subcategories in Figure 23 based on their average allocations to private investments over the trailing ten-year period.

The median Sharpe ratio was 1.07 for endowments that had an allocation of 30% or more to private investments. In comparison, the median Sharpe ratio was 0.89 for the overall participant group. Although the better Sharpe ratio for the group with the highest private allocations is partly a function of this group's higher median return, it is also attributable to their lower median standard deviation.

FIGURE 23 10-YR STANDARD DEVIATION AND SHARPE RATIO

Periods Ended June 30, 2021



	AACR	Standard Deviation	Sharpe Ratio	*n*
All C&U Median	9.2	10.1	0.89	*112*
Median by PI Allocation				
Less than 10%	8.2	11.5	0.72	*10*
10%–20%	8.4	10.7	0.77	*39*
20%–30%	9.0	9.3	0.92	*24*
More than 30%	10.8	9.2	1.07	*39*
70/30 Benchmark	8.5	10.8	0.76	

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

Section 2: Investment Policy

An investment policy provides guidelines for trustees, investment committee members, investment staff, advisors, and other relevant parties that are involved in the endowment's investment management and governance processes. The investment policy statement (IPS) is the formal document that outlines the important components of this policy. Some institutions may have additional informal guidelines that are considered in the investment management process but are not documented in the IPS. Our survey touched on several issues that are related to endowment investment policies/guidelines, and the following section summarizes these responses.

ROLE OF THE ENDOWMENT

A key issue for any investor to consider is the purpose and role of its investment assets. Most colleges and universities don't generate enough revenue to cover the expenses incurred to operate their institutions and rely upon donations and endowed funds to provide additional financial support to their annual budgets. Colleges and universities must balance their annual reliance on endowment spending and the commitment to provide support for their missions in perpetuity.[3]

One term that is often associated with endowment management is intergenerational equity, the concept that future generations should receive financial support from the endowment that is equitable to what is received by today's students and programs. To meet this objective, an endowment must earn a return over the long term that replenishes both the spending withdrawals from the portfolio and the purchasing power lost because of inflation.

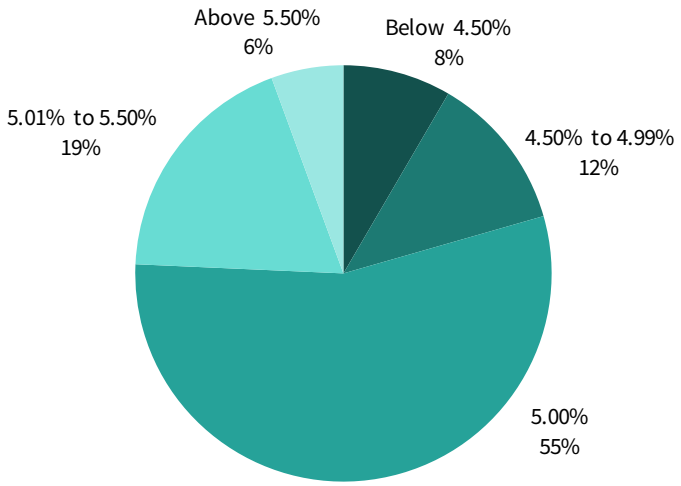
Of the survey participants that specified the primary role for their endowment, 87% indicated it was to maintain intergenerational equity. The remaining 13% of respondents indicated that the primary role of the endowment was to expand its permanent capital so that the endowment could fulfill a bigger role in the institution's business model in the future. While the overall endowment pool can be expanded by raising new gifts, existing endowment funds would need to earn a long-term return that exceeds the combined rate of spending and inflation if the objective is to grow the purchasing power of those funds.

Our survey asked participants to provide their real return objective for the endowment if one was used. Since endowment returns are volatile from year to year, return objectives should be evaluated from the long-term perspective instead of a goal that must be met each and every year. As has been the case historically, the most common real return objective is 5%, which was cited by just over half of the endowments (Figure 24). Approximately one-quarter of respondents have an objective above 5%, while 20% reported an objective of less than 5%.

3 See the Institutional Support section of this report for commentary and analysis on endowment spending.

FIGURE 24 REAL TOTAL PORTFOLIO RETURN OBJECTIVES

n = 107



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

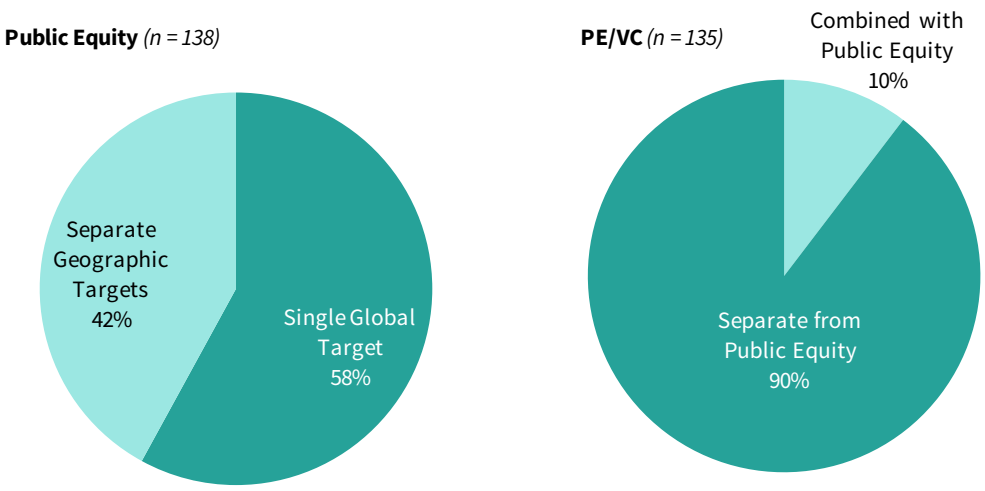
ASSET ALLOCATION POLICY

The asset allocation component of the investment policy specifies the asset classes allowed in the portfolio and assigns target allocations and/or ranges for those asset class categories. The categories and targets that are chosen are based on the portfolio's risk tolerance, liquidity needs, and performance objectives. Our survey requests that respondents provide the asset class categories used in their endowment's asset allocation policy.

There are differences in the policy frameworks reported among respondents, with some endowments using more detailed categories than others. This is most evident with public equity categories, where there are contrasting approaches to the inclusion of geographic regions into the policy framework. A broad approach is most common, with 58% of respondents reporting a single category that captures their entire public equity allocation (Figure 25). The remaining 42% of respondents assign multiple targets that are based on geographic regions, although there are various combinations of regions used across endowments. The single-category approach provides the investment management team more flexibility, while the multi-category approach puts more constraints on how the public allocations are implemented.

A small percentage (10%) of respondents roll PE/VC together with public equity into a single category in their policy framework. In these instances a name such as "Growth" or simply "Equity" is used to capture the combined exposure. However, the vast majority (90%) of endowments separate public and private equity when constructing their asset allocation policy. Most of this latter group have a dedicated target for PE/VC or break out non-venture private equity and venture capital separately. However, some endowments include PE/VC together with other private strategies into a single private investments category in their framework.

FIGURE 25 CAPTURING EQUITIES IN THE ASSET ALLOCATION POLICY



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

COMPONENTS OF POLICY PORTFOLIO BENCHMARKS

When done well, 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. The comparison of an endowment's return to its policy portfolio benchmark is used to evaluate whether the portfolio is being successfully implemented according to its asset allocation policy. Such an evaluation not only captures the impact of manager selection decisions, but also the effect of differences between the portfolio's actual asset allocation and the policy targets. The policy portfolio benchmark is typically a blend of indexes that represents the desired portfolio risk exposures without any expression of more active alternatives. In certain alternative asset classes, there are no investable proxies and other types of benchmarks may be used.

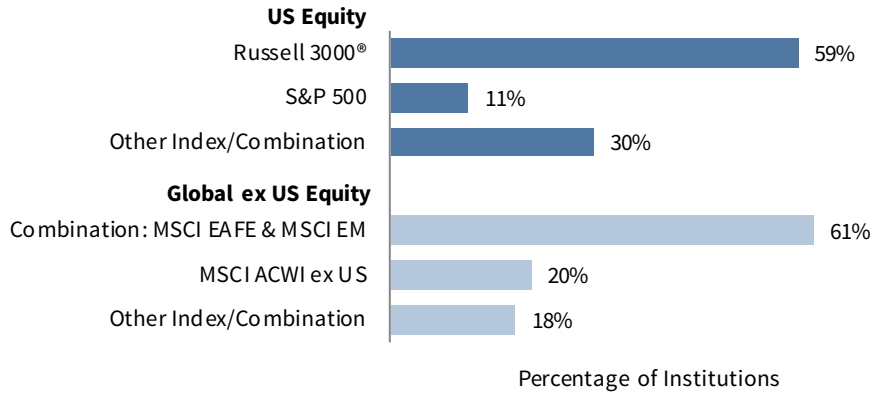
The structure of the policy portfolio benchmark for most endowments typically matches or closely resembles the framework of the asset allocation policy.[4] Of the endowments that use a single category for their entire public equity allocation in the policy framework, nearly 90% also use the MSCI All Country World Index to represent that allocation in the policy benchmark. In instances where endowments use separate policy targets for US and global ex US categories, the Russell 3000® Index was most commonly cited for US equity, and a combination of the MSCI EAFE and MSCI Emerging Markets indexes was most prevalent for global ex US equity (Figure 26).

Accounting for private equity in the policy benchmark can be challenging because there is no single index that meets all the standards of a valid benchmark. Hence, there are different approaches that we see used across endowments in this study.

4 For this section, we excluded respondents that reported a simple benchmark as their policy benchmark. A simple benchmark typically incorporates a broad-based equity benchmark and a bond index weighted in proportion to the overall risk profile of the portfolio. Just 11% of respondents that provided data on their policy portfolio benchmark reported a simple benchmark.

FIGURE 26 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: PUBLIC EQUITY FOR US AND GLOBAL EX US REGIONS

As of June 30, 2021 • n = 44

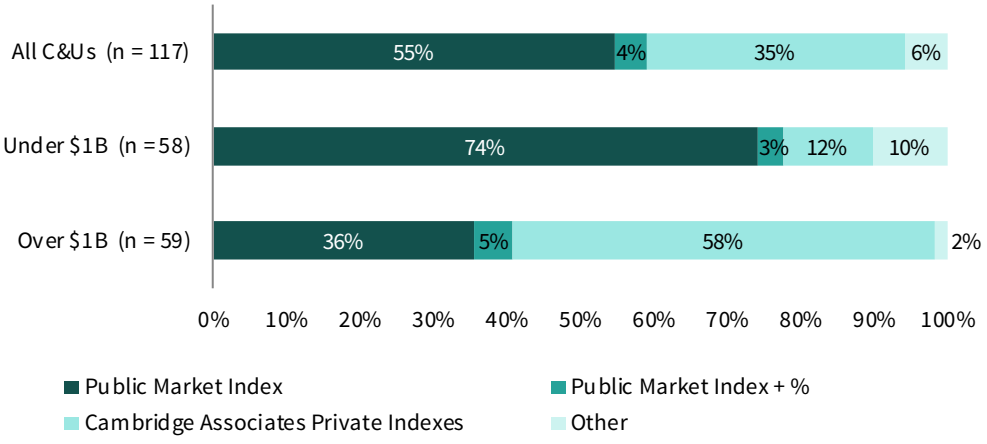


Source: College and university data as reported to Cambridge Associates LLC.

For the overall respondent group, the use of a public index is the most common practice (55%) among respondents (Figure 27). The rationale for using this approach is that the capital would have been invested in public equity markets if it was not invested in private equity. Therefore, the public index can help evaluate whether the decision to invest in private equity paid off for the endowment. The use of a public index can also be a straightforward approach when a portfolio is still in a phase of building up its private program and there is an underweight in current private allocations versus the long-term target. This may be one explanation for why this approach is more common at smaller endowments compared to larger peers.

FIGURE 27 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: PRIVATE EQUITY

As of June 30, 2021



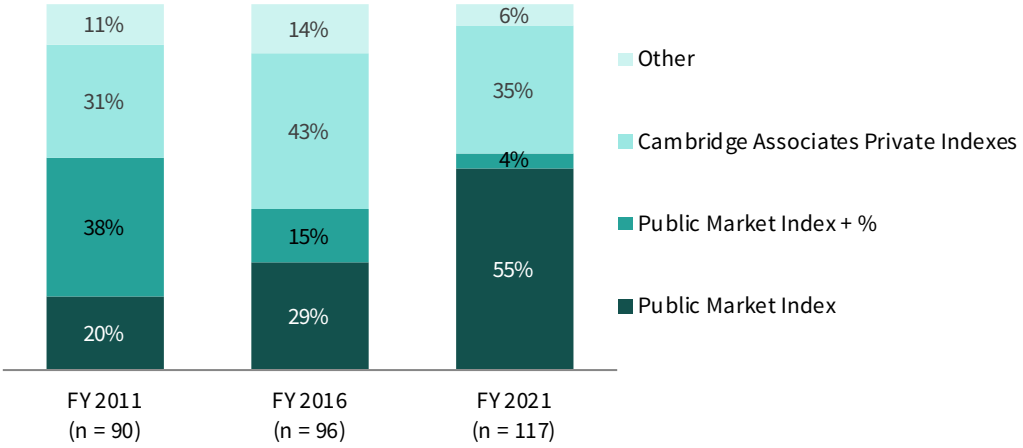
Source: College and university data as reported to Cambridge Associates LLC.

While the use of a public equity index in this way can capture the opportunity cost of investing in private equity, it does not evaluate how well those private allocations are implemented. A little over one-third of the total participant group (35%) use the CA

private investment indexes, which are calculated by pooling together all of the cash flows and valuation changes for the underlying private funds that are included in a specific strategy's index. These indexes are not investable, nor is there transparency into the names and weightings of the private companies included, and consequently they don't satisfy the requirements sought for an ideal benchmark. However, these indexes can be custom-weighted by vintage year and provide a better evaluation of private investment fund selection compared to what a public index offers. For this reason, it is likely that this approach is most prevalent among larger endowments, of which many have performance-based incentive compensation programs for their investment staff.

Just 4% of respondents add a prespecified percentage to a public index return to represent their private equity allocation in the policy benchmark. The reasoning behind this approach is based on the expectation that investing in private equity offers an illiquidity premium, or the potential to earn a return that is above and beyond what can be earned in the public equity market. However, the addition of a premium to a public index return introduces a non-market force that fails the test for having the qualities of a valid benchmark. This method was actually the most common approach among this study's participants ten years ago, when 38% of respondents used this type of benchmark (Figure 28).

FIGURE 28 TREND IN PRIVATE EQUITY BENCHMARKS



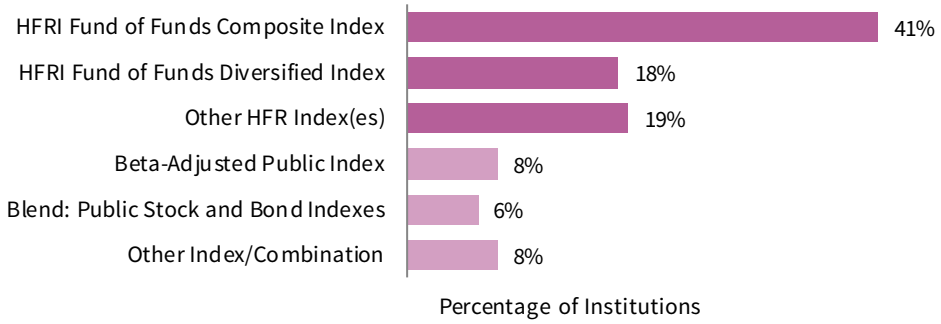
Source: College and university data as reported to Cambridge Associates LLC.

Endowments also face similar challenges of selecting an appropriate index when accounting for hedge fund allocations in the policy benchmark. Hedge Fund Research® (HFR) produces indexes that broadly track hedge fund managers that report to their database. The HFR indexes may be defined more granularly by investment substrategies, geographic regions, and other criteria. While endowments may use this approach to evaluate their own manager selection versus a broad universe of hedge funds, these indexes lack some of the desired qualities of a valid benchmark, such as being investable and transparent. Still, more than three-quarters of the respondent group use one or more of the indexes calculated by HFR. The HFRI Fund of Funds (FOF) Composite Index was used by 41% of endowments, while the HFRI FOF Diversified Index was

the next most commonly cited (18%). Another 19% of respondents use another index or a combination of indexes provided by HFRI. As shown in Figure 29, the remaining respondents use either a beta-adjusted public equity index, a blend of a public equity index and a bond index, or some other type of index.

FIGURE 29 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: HEDGE FUNDS

As of June 30, 2021

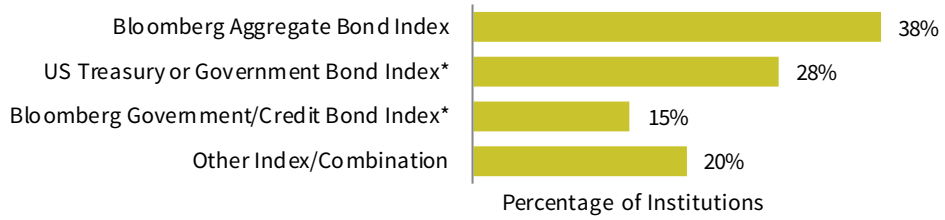


Source: College and university data as reported to Cambridge Associates LLC.

The Bloomberg Aggregate Bond Index was the most common benchmark for fixed income but was cited by just 38% of endowments (Figure 30). Slightly more than one-quarter of respondents (28%) use a US Treasury or US government bond index and another 15% of endowments use a version of the Bloomberg Government/Credit Index. There are different versions for each of these indexes based on range of maturity and many endowments use the specific version that reflects their portfolio's underlying fixed income exposure. The remaining 20% of respondents use some other type of index or a combination of multiple indexes. For real assets, benchmark combinations are even more unique across the participant group due to the wide variety of strategies employed under this category.

FIGURE 30 FREQUENTLY USED COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: FIXED INCOME

As of June 30, 2021



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

*Includes subindexes of the overall strategy that have various ranges of maturity.

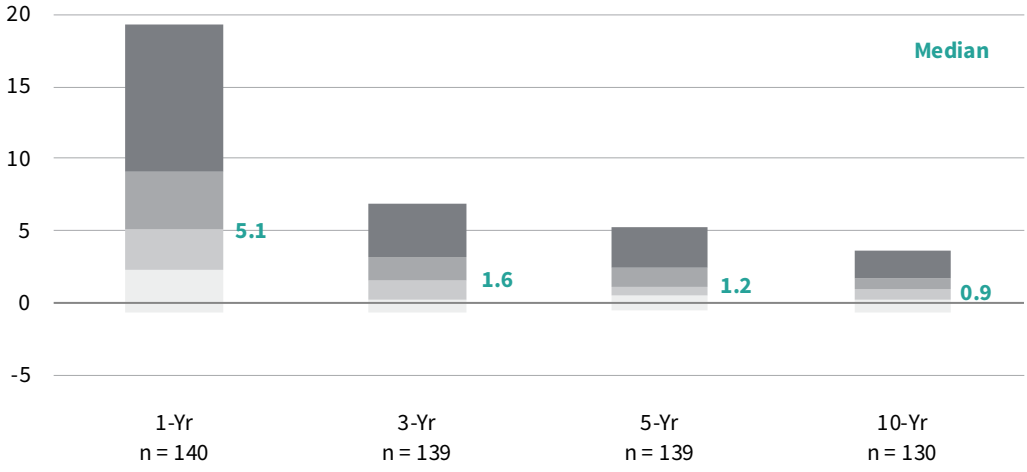
INVESTMENT PERFORMANCE VERSUS POLICY PORTFOLIO BENCHMARKS

The various approaches to benchmarking we have covered in this section are important to keep in mind when analyzing endowment performance relative to policy benchmarks. This is perhaps most evident with the benchmarking of private equity and venture capital. As we detailed in the Investment Returns section of this report, the CA Private Equity and Venture Capital index returns were substantially higher than the performance of public equity indexes in fiscal year 2021. Endowments that use the private indexes calculated a policy benchmark return that was considerably higher compared to what it would have been if a public index were used to represent PE/VC, and vice versa.

Total returns for endowments by and large trounced their policy portfolio benchmark returns in fiscal year 2021. More than 90% of respondents reported that their total return outperformed the policy benchmark for the trailing one-year period. The median spread between the actual return and the policy benchmark return was a whopping 5.1 ppts. The range of results among endowments was extremely large, with the spread at the 5th percentile reaching 19.3 ppts. The magnitude of outperformance for the most recent fiscal year across most endowments also boosted results for longer periods. For each of the multiyear trailing periods in Figure 31, more than 80% of participating endowments reported a return that outperformed their policy benchmark.

FIGURE 31 RANGE OF OUT/UNDERPERFORMANCE OF TOTAL RETURN VS POLICY PORTFOLIO BENCHMARK

Years Ended June 30, 2021 • Percentage Points • By Percentile Ranking



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.

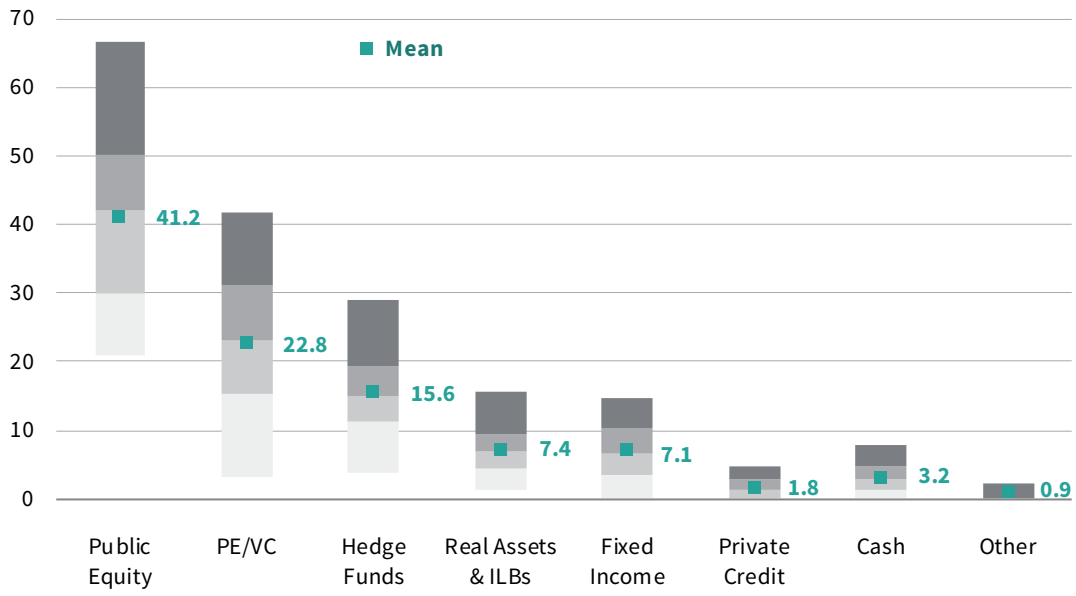
Section 3: Portfolio Asset Allocation

2021 ASSET ALLOCATION

Most endowments had significant allocations to equities at the end of fiscal year 2021. On average, 41.2% of the long-term investment portfolio (LTIP) was invested in long-only public equities and 22.8% was allocated to PE/VC (Figure 32). However, the range in allocations reported across respondents was extremely wide within these categories. Even after removing the top and bottom 5% of outliers, public equity allocations were as high as 67% at the top end of the universe and as low as 21% at the bottom end. For PE/VC, allocations ranged from 42% at the 5th percentile to 3% at the 95th percentile.

FIGURE 32 SUMMARY ASSET ALLOCATION DISTRIBUTION

As of June 30, 2021 • Percent (%) • n = 152 • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 73 in the Appendix.

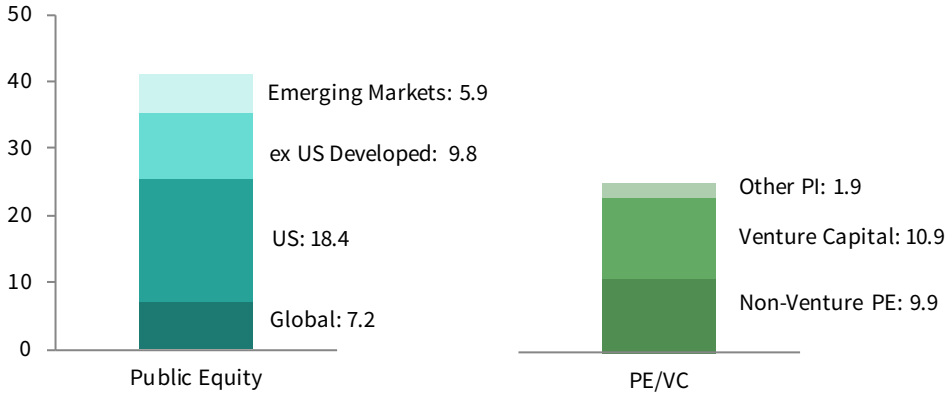
Figure 33 shows the breakdown of detailed categories that fall under public equity and PE/VC in our asset allocation framework. On the public side, we collect data based on the primary geographic region in which each fund/manager is invested.[5] The highest allocations among the public categories tend to be in US-focused funds, with 18.4% of the average LTIP invested in these strategies. Endowments have substantial allocations to equities outside of the United States, with an average of 9.8% allocated to funds primarily invested in global ex US developed regions and another 5.9% invested with dedicated emerging markets funds. Funds that are invested across multiple geographic regions are included in our global category and make up 7.2% of the average LTIP.

5 We reference investment managers and their funds in our review of asset allocations in this section. However, some endowments gain exposure to these asset classes via internally managed holdings or derivatives. The Investment Manager Structures section of this report contains analysis on how asset allocations are implemented across various strategies

The largest average allocation on the private side was to venture capital (10.9%), while the average allocation to non-venture private equity was slightly lower at 9.9%. Non-venture private equity in our framework consists of buyouts and growth equity, which is aligned with the way these strategies are combined in the CA Private Equity indexes. There is a third category called "other private investments" that is reserved for multi-strategy fund-of-funds, secondaries, and other private funds that can't be allocated solely to either of the aforementioned categories. The average allocation to other PI was just 1.9%.

FIGURE 33 MEAN ASSET ALLOCATION: PUBLIC EQUITY AND PE/VC

As of June 30, 2021 • Percent (%) • n = 152



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

Elsewhere in the reporting framework, the average allocation to hedge funds was 15.6% (Figure 32). Real assets, which consist of a diversified group of public and private assets, made up 7.4% of portfolios, on average. Fixed income made up 7.1% of the average LTIP, while private credit accounted for just 1.8%. Rounding out the average asset allocation among participants, 3.2% was allocated to cash and 0.9% was allocated other miscellaneous assets. Average allocations for the more granular asset classes that fall under these broader categories are included in the Appendix of this report.

The total asset size of the LTIP has long been a key factor in the variation of asset allocations among endowments. Smaller endowments continue to maintain higher allocations to fixed income and public equities, while larger endowments have the highest allocations to alternative assets. The differences are most noticeable in the breakdown of public equity versus private equity. Endowments with assets less than $200 million had an average allocation of 57.3% to public equity, while those with assets greater than $3 billion had an average of 31.0% (Figure 34). For PE/VC, the largest endowments had an average allocation of 32.0% while the smallest endowments had an average of 7.9%.

FIGURE 34 MEAN ASSET ALLOCATION BY ASSET SIZE
As of June 30, 2021 • Percent (%)

Asset Size	Public Equity	PE/VC	Hedge Funds	Private Credit	Fixed Income	Real Assets & ILBs	Cash
Less than $200M *n = 15*	57.3	7.9	12.7	0.7	12.6	4.4	2.2
$200M–$500M *n = 31*	50.1	15.1	13.4	1.3	9.8	4.5	3.4
$500M–$1B *n = 21*	44.5	20.3	12.2	2.6	8.4	9.2	2.6
$1B–$3B *n = 42*	37.8	25.5	18.2	2.2	5.3	6.9	3.8
More than $3B *n = 43*	31.0	32.0	17.5	1.7	4.3	10.1	3.3
All C&U Mean *n = 152*	41.2	22.8	15.6	1.8	7.1	7.4	3.2

Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 73 in the Appendix.

HISTORICAL ASSET ALLOCATION

Institutional investors that have adopted the endowment model of investing have seen significant shifts in their asset allocation policies over the last few decades. Exposure to bonds has decreased substantially while the equity allocation, which once was invested overwhelmingly in US public equities, has become more diversified. The largest endowments pioneered this transition in the 1980s, with the trend spreading among other institutions in the 1990s and early 2000s. Figure 35 shows the average asset allocation trend over the last 20 years for the 82 endowments that have provided data since 2001. The first half of this period highlights much of these trends in diversification.

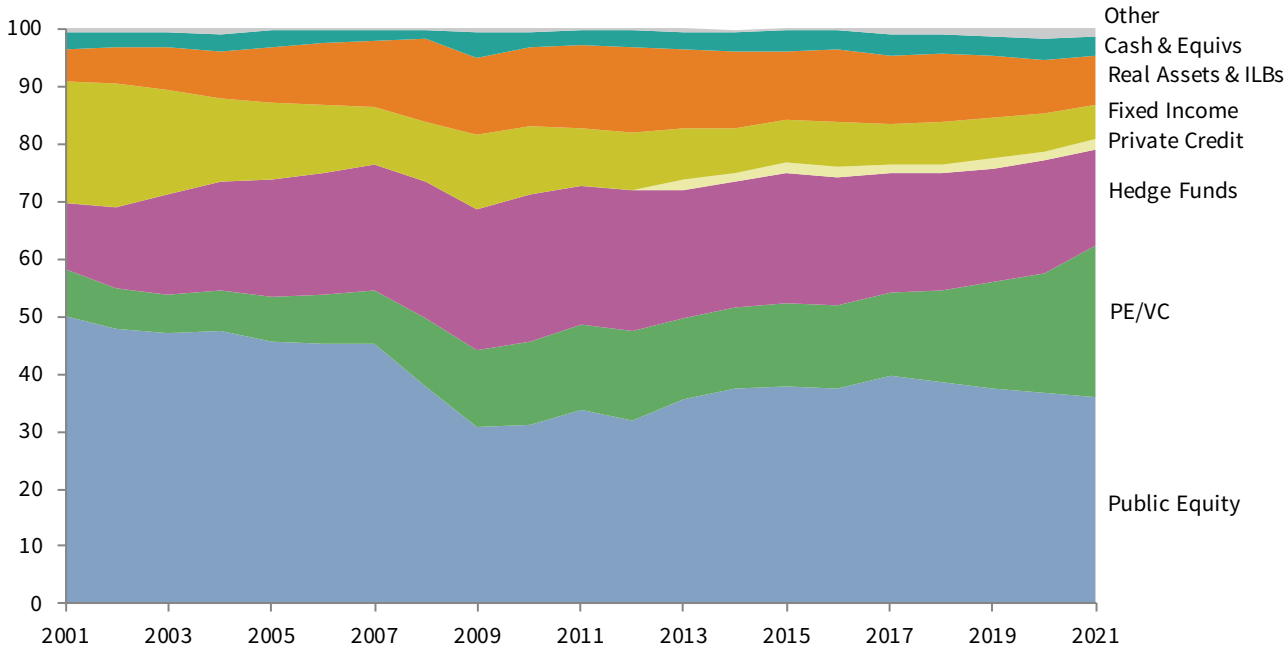
The 2008 GFC occurred near the midpoint of this 20-year period and the impact on endowments' asset allocations was significant. The average public equity allocation dropped by nearly 15 ppts from 2007 to 2009, and fixed income allocations briefly defied the longer-term trend and rose by a few ppts. Allocations to alternative asset classes continued to rise during this time, although they were weighted more heavily toward hedge fund and inflation-hedging strategies than to private equities. By 2011, the combined average allocation to hedge funds and real assets was more than double the allocation to PE/VC.

The investment environment over the past decade has been characterized by a sustained bull market for equity-oriented assets and a historically low interest rate environment for bonds. The average endowment allocation to equities trended back up post-GFC, with higher increases reported to public equities compared to private

equities through 2017. However, allocations to PE/VC have risen dramatically since 2017, a result of both increased private commitments by endowments and the extraordinary investment performance from these strategies. Meanwhile, average allocations peaked in 2010 to hedge funds and shortly afterwards to real assets (2012), but then declined for both strategies over much of the last decade. Likewise, the average allocation to fixed income has steadily declined and by 2021 was approximately half of what it was ten years prior.

FIGURE 35 HISTORICAL MEAN ASSET ALLOCATION TRENDS

Years Ended June 30 • Percent (%) • n = 82



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

Note: For more information, see page 74 in the Appendix.

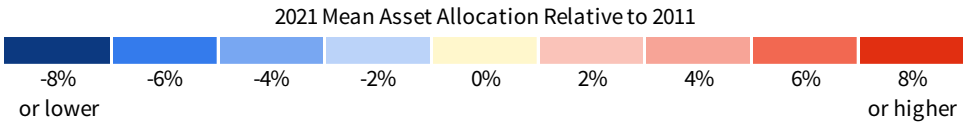
Endowments of various asset sizes followed the same overall trends from the last decade (Figure 36). Each asset size group saw increases to PE/VC, with endowments from $1 billion to $3 billion reporting the highest average increase (14.1 ppts) and those under $200 million reporting the smallest average increase (4.7 ppts). The result is that the gap in private allocations between small and large endowments, which was already substantial ten years ago, has grown to be much wider. The average public equity allocation rose for each asset size cohort, although the increases were largest among endowments less than $1 billion.

There was a stark contrast between the trend in growing equity allocations and the decreases that were reported elsewhere in portfolios. The largest decrease in the average asset allocation structure was to hedge funds for most of asset size groups. The exception was endowments under $200 million where the largest average decrease was to fixed income. Each asset size cohort also reported meaningful decreases in the average allocation to real assets.

FIGURE 36 TRENDS IN MEAN ASSET ALLOCATION BY ASSET SIZE

Means as of June 30 • Percent (%)

	Public Equity	PE/VC	Hedge Funds	Private Credit	Fixed Income	RA & ILBs	Cash
Under $200M (n = 5)							
2011	52.2	1.6	16.0	NA	20.2	9.4	0.1
2021	56.7	6.3	11.4	0.0	14.5	5.5	0.7
$200M–$500M (n = 22)							
2011	43.5	6.6	21.9	NA	14.2	11.8	2.0
2021	50.1	14.8	12.6	1.1	10.4	4.3	3.3
$500M–$1B (n = 16)							
2011	36.4	11.5	22.3	NA	11.9	13.1	4.7
2021	42.1	22.2	12.2	2.8	8.4	9.3	2.8
$1B–$3B (n = 30)							
2011	34.0	13.1	26.6	NA	9.5	12.5	3.3
2021	36.3	27.2	18.3	2.1	4.7	7.0	4.0
Over $3B (n = 43)							
2011	29.8	18.7	24.8	NA	7.7	16.4	1.9
2021	31.0	32.0	17.5	1.7	4.3	10.1	3.3



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

Notes: Analysis only includes respondents that provided data for 2011 and 2021. Private credit was not a part of our asset allocation framework in 2011. Analysis does not include allocations to the "Other" asset class category.

TARGET ASSET ALLOCATION

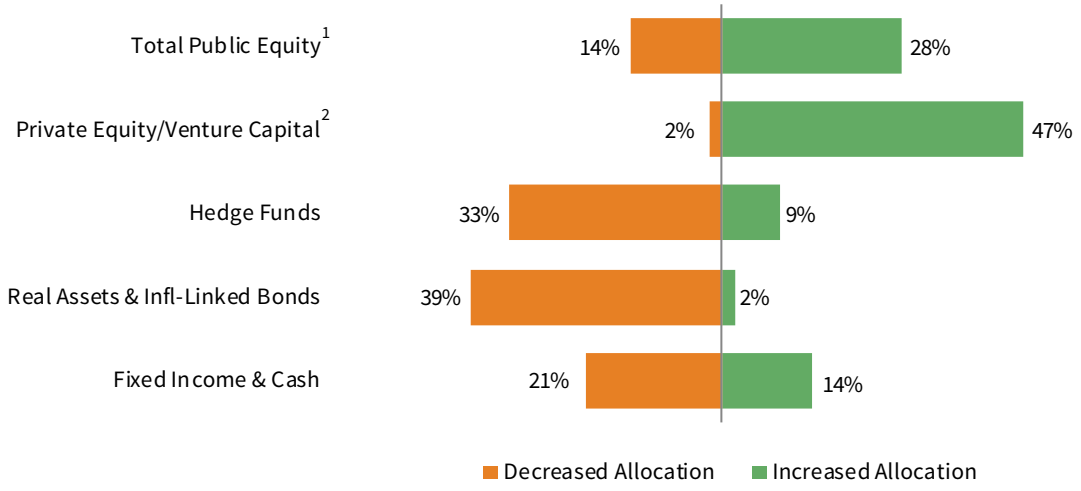
Target asset allocation data can be insightful for evaluating whether endowments are altering their long-term asset allocation policies going forward. We request that participants provide their asset allocation policy exactly as stated in their investment policy statements. While there are differences in how policy frameworks are structured across institutions, we are able to make some general observations as to where endowments are tilting toward increasing or decreasing their allocations in the future.

The trend in target asset allocations for fiscal year 2021 was very similar to the recent trends in actual allocations that we just reviewed. In general, there are far more institutions that increased policy allocations to equities compared to those that reported a decrease. The contrast was most striking with PE/VC, where almost half (47%) of endowments reported an increase in the target allocation and just 2% reported a decrease (Figure 37). For public equity, the percentage of respondents that increased (28%) their target over the past year was twice as much as the percentage that reported a decrease (14%).

Meanwhile, responses for fiscal year 2021 point to a continued decline in hedge funds and real assets allocations going forward. For real assets, 39% of endowments reported that they lowered their target allocation, while just 2% increased their target. The results were similar for hedge funds, where 33% decreased their target compared to 9% that reported an increase. The percentages were closer with fixed income and cash, although the percentage reporting an increase (14%) was still less than the percentage that reported a decrease (21%).

FIGURE 37 CHANGES IN TARGET ASSET ALLOCATION

June 30, 2020 – June 30, 2021 • Percentage of Institutions Increasing or Decreasing Targets



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

[1] Total public equity excludes institutions that combine public equity together with PE/VC in a single equity category.

[2] Private equity/venture capital includes institutions that include PE/VC together with other private investments in a single category.

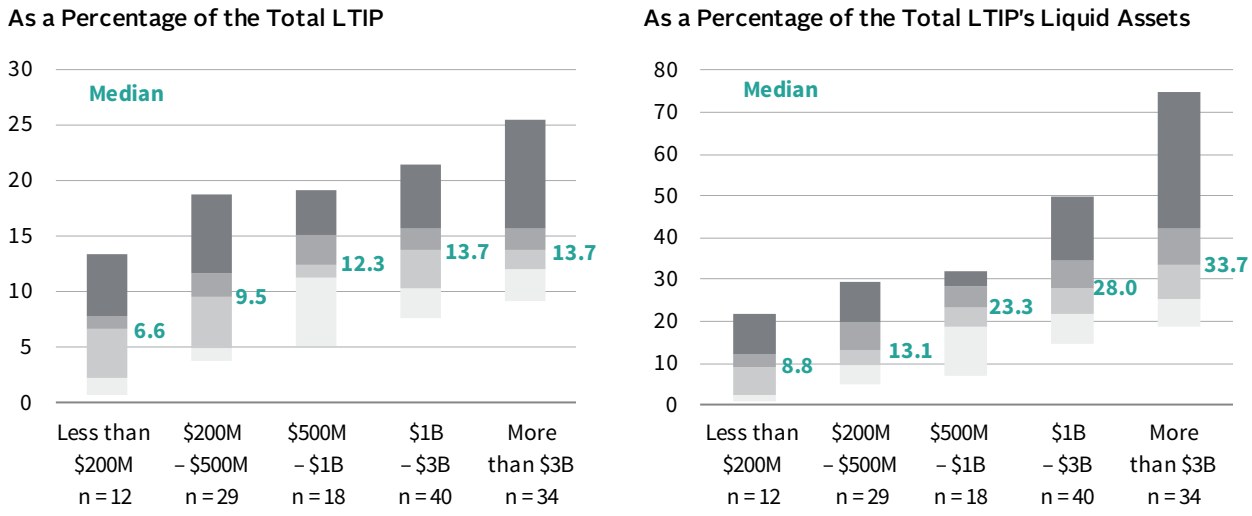
PRIVATE INVESTMENTS AND UNCALLED CAPITAL COMMITMENTS

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 or marketable assets. As our analysis in this section has shown, endowments have been allocating an increasingly significant portion of their portfolios to private investments. As of the end of fiscal year 2021, the average total private investment allocation for the overall participant group was nearly 30%. For endowments greater than $3 billion, the average allocation was even larger at 42%.

Uncalled capital commitments represent the amount of capital that endowments have agreed to pay into private investment funds in the future. While annual spending distributions have traditionally made up the biggest liquidity need for endowments, growing allocations to private assets have resulted in uncalled capital becoming an equally important piece of the liquidity picture. Whether an endowment is ramping up private allocations or simply maintaining an already high allocation, the amount of uncalled capital is significant when measured versus the total value of the portfolio for most participants in this study.

Uncalled capital commitments as a percentage of the total LTIP tends to be higher for larger endowments than it is for smaller endowments. This should not be surprising given the substantial differential in private allocations between the largest and smallest endowments in this study. The median ratio for endowments greater than $3 billion was 13.7%, which was double the median ratio (6.6%) calculated for endowments under $200 million (Figure 38). The difference is even more stark when considering the ratio of uncalled capital commitments to the LTIP's total liquid assets, which exclude hedge funds and private investments. For endowments greater than $3 billion, the median ratio as a percentage of the portfolio's liquid assets was 33.7%. In contrast, the ratio was 8.8% for endowments under $200 million.

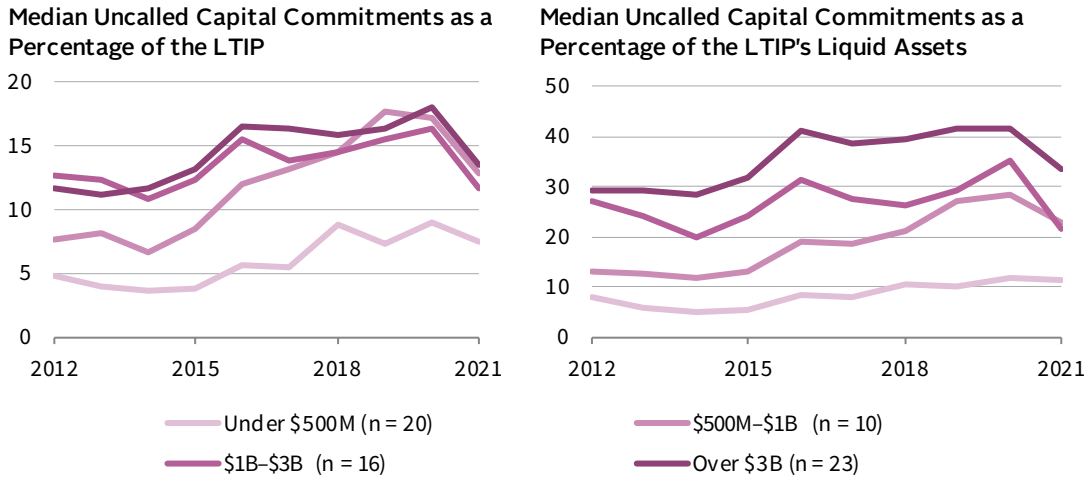
FIGURE 38 UNCALLED CAPITAL COMMITTED TO PRIVATE INVESTMENT FUNDS
As of June 30, 2021 • Percent (%) • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 75 in the Appendix.

Figure 39 shows the trend in these two ratios over the last ten fiscal years for the various asset size cohorts. The median ratios trended higher over much of the past decade but then dropped off substantially in 2021. The decline over the past year was not because there was a decrease in the amount of uncalled commitments across most endowments. Rather, the extraordinary investment performance from fiscal year 2021 drove a growth rate in the asset base for endowments that was much higher than the increase in uncalled commitments. The median growth rate in both the market value of the LTIP and the portfolio's liquid assets was nearly 40% in fiscal year 2021, while the median growth rate in the amount of uncalled capital commitments was just 9%.

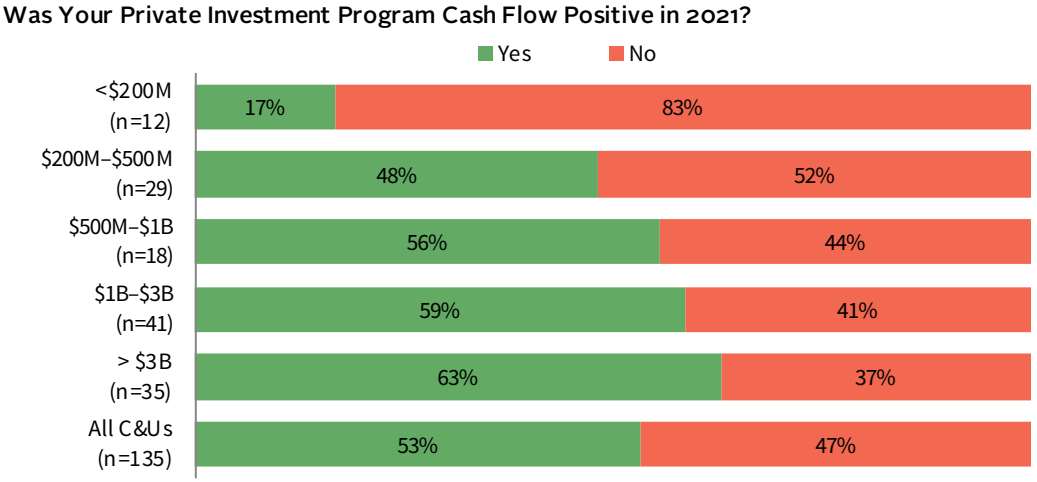
FIGURE 39 TREND IN UNCALLED CAPITAL COMMITMENTS TO PRIVATE INVESTMENT FUNDS
Years Ended June 30 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Notes: Uncalled capital is the amount committed, but not yet paid in, to private investment funds. Liquid assets consist of all LTIP assets excluding hedge funds and private investments.

A slight majority of respondents (53%) reported their private investment program was cash flow positive, meaning that the amount of distributions from private funds exceeded the amount of new capital paid in (Figure 40). The experience of the smallest endowments was quite different that the rest of the group, as just 17% of C&Us under $200 million reported that their private programs were cash flow positive. Most endowments in this asset size group are still in the process of building up private allocations and are in a phase where capitals calls will outweigh distributions from funds for the foreseeable future. Almost two-thirds (63%) of endowments over $3 billion reported that their private programs were cash flow positive, which may seem low given the outstanding performance delivered by private investment strategies in fiscal year 2021. However, it is important to remember that most of the performance gains from the past year were a result of unrealized value and—if those gains hold—will not be harvested as distributions until future years.

FIGURE 40 PRIVATE INVESTMENT PROGRAM CASH FLOW BY ASSET SIZE
As of June 30, 2021



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 fiscal year 2021.

Section 4: Investment Manager Structures

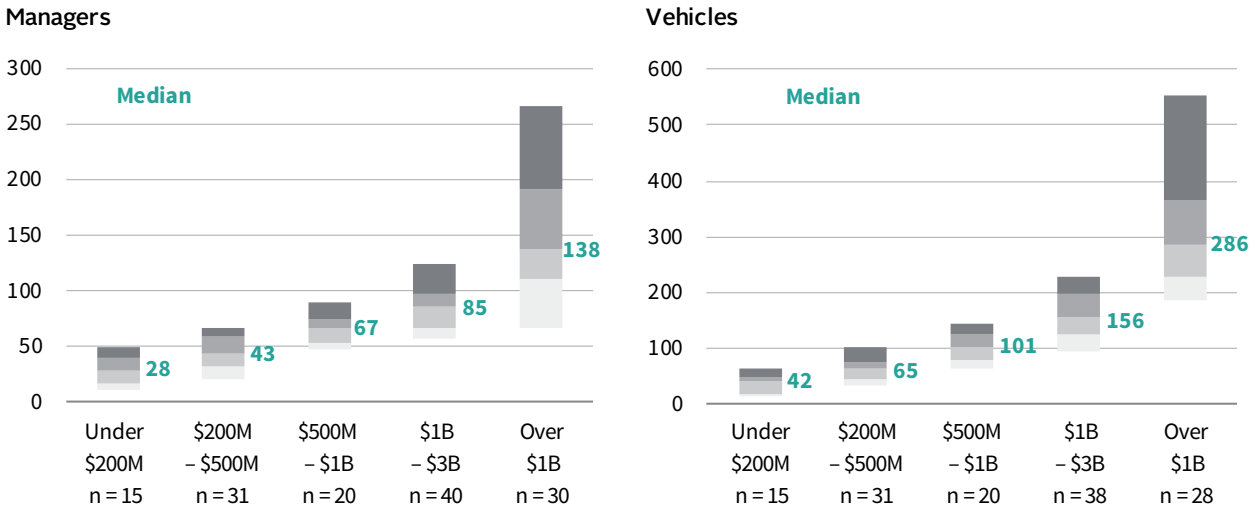
NUMBER OF EXTERNAL MANAGERS

Most of the assets under management at endowments are invested via external investment managers. There are multiple factors that contribute to the number of managers employed within an endowment's portfolio. The scale of total assets under management is the primary factor, as larger endowments generally spread their assets across a greater number of managers compared to smaller endowments. Among endowments greater than $3 billion, the median number of investment managers was 138 (Figure 41). At the opposite end of the asset size spectrum, the median for endowments less than $200 million was just 28 managers.

Our survey also asked about the number of vehicles invested in by endowments. For the purposes of our analysis, an investment vehicle represents a fund, product, or separate account that is managed by an investment manager. Endowments often invest in multiple investment vehicles of the same manager, particularly when it comes to private investment funds. Therefore, the number of vehicles endowments are invested in is much higher than the number of managers. The median number of vehicles ranged dramatically from 286 for endowments greater than $3 billion to 42 for endowments less than $200 million.

FIGURE 41 NUMBER OF EXTERNAL MANAGERS AND INVESTMENT VEHICLES

As of June 30, 2021 • Percent (%) • By Percentile Ranking

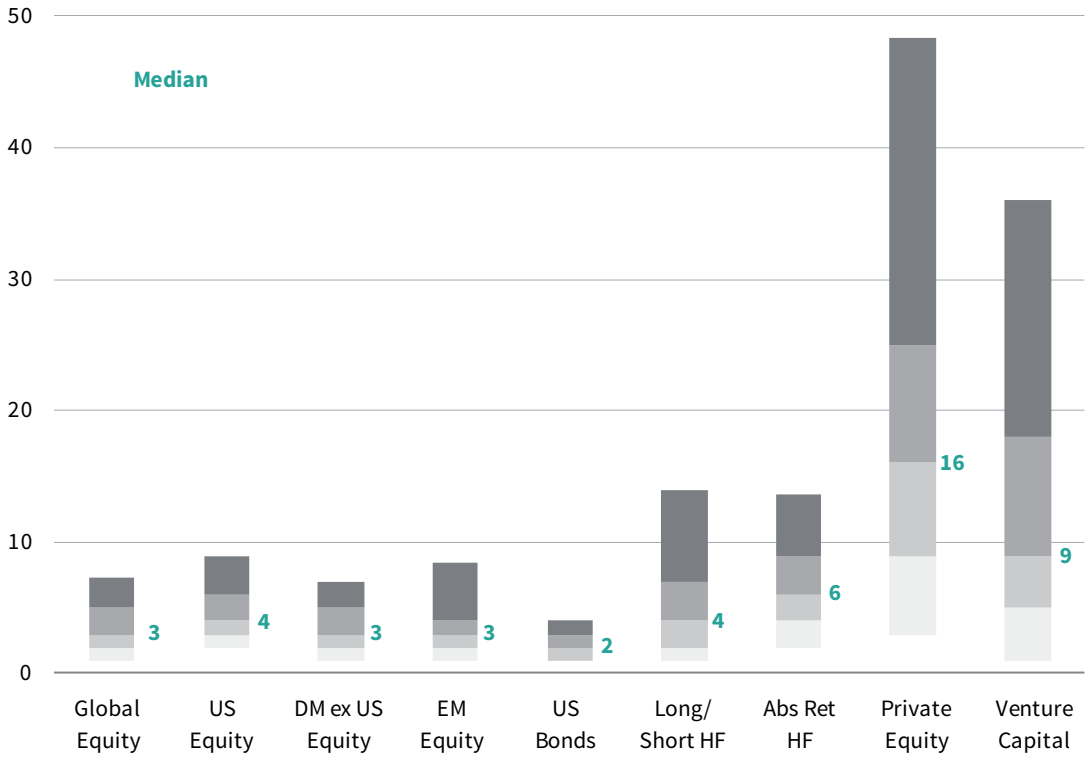


Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 75 in the Appendix.

Even within the broad asset size groups, the range of managers employed can be wide. Among the smallest endowments, the number of managers employed at the 25th percentile (41) is more than double the number used at the 75th percentile (18). For portfolios greater than $3 billion, 266 managers are employed at the 5th percentile compared to just 67 at the 95th percentile. Much of the variation can be attributed to the management of alternative asset classes. Figure 42 shows the range in number of managers across endowments for several asset classes. 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 five broad asset size groups in the Appendix table on the next page.

FIGURE 42 DISPERSION IN NUMBER OF MANAGERS FOR SELECTED ASSET CLASSES

As of June 30, 2021 • By Percentile Ranking



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. For more information, see page 76 in the Appendix.

APPENDIX EXTERNAL MANAGERS AND VEHICLES BY STRATEGY

As of June 30, 2021

Strategy	Median Number of Managers					Median Number of Vehicles				
	Under $200M	$200M–$500M	$500M–$1B	$1B–$3B	Over $3B	Under $200M	$200M–$500M	$500M–$1B	$1B–$3B	Over $3B
Traditional Equity										
Global Equity	3	2	2	4	4	3	2	2	4	4
US Equity	5	4	5	4	5	5	4	5	4	7
Developed ex US Equity	4	3	3	3	5	4	3	3	3	5
Emerging Markets Equity	2	2	3	3	6	2	2	3	3	7
Traditional Bonds										
Global Bonds	--	--	1	1	1	--	--	1	1	2
US Bonds	2	2	2	1	1	2	3	2	2	2
Global ex US Bonds	--	1	1	1	1	--	1	1	1	1
High-Yield Bonds	--	1	1	1	2	--	1	1	1	2
Hedge Funds										
Long/Short Hedge Funds	2	3	3	6	8	2	3	3	6	7
Absolute Return	3	5	6	6	9	3	5	6	7	11
Distressed Securities	1	1	1	2	3	1	1	1	2	3
Private Credit										
Distressed - Control Oriented	2	1	2	3	5	2	1	3	5	7
Private Credit ex Distressed	3	2	5	4	8	3	2	7	8	13
Private Equity										
Non-Venture Private Equity	3	6	12	19	33	5	11	21	42	64
Venture Capital	2	4	8	12	28	4	6	14	33	88
Other Private Investments	3	3	3	3	5	3	5	6	5	12
Real Assets & ILBs										
Private Real Estate	2	2	7	7	15	2	2	9	14	28
Public Real Estate	1	1	1	1	1	1	1	1	1	1
Commodities	--	1	1	1	2	--	1	1	1	2
Inflation-Linked Bonds (TIPS)	1	1	1	1	1	1	1	1	1	1
Private Oil & Gas/Nat Res	1	3	7	7	13	3	4	10	15	30
Public Energy/Nat Res	1	1	1	1	1	1	1	1	1	2
Cash	1	1	1	1	1	2	1	1	1	2
Other	1	1	1	1	2	1	1	1	2	2

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

Notes: 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 should not be assumed to equal the total number of managers or vehicles.

ASSET CLASS IMPLEMENTATION

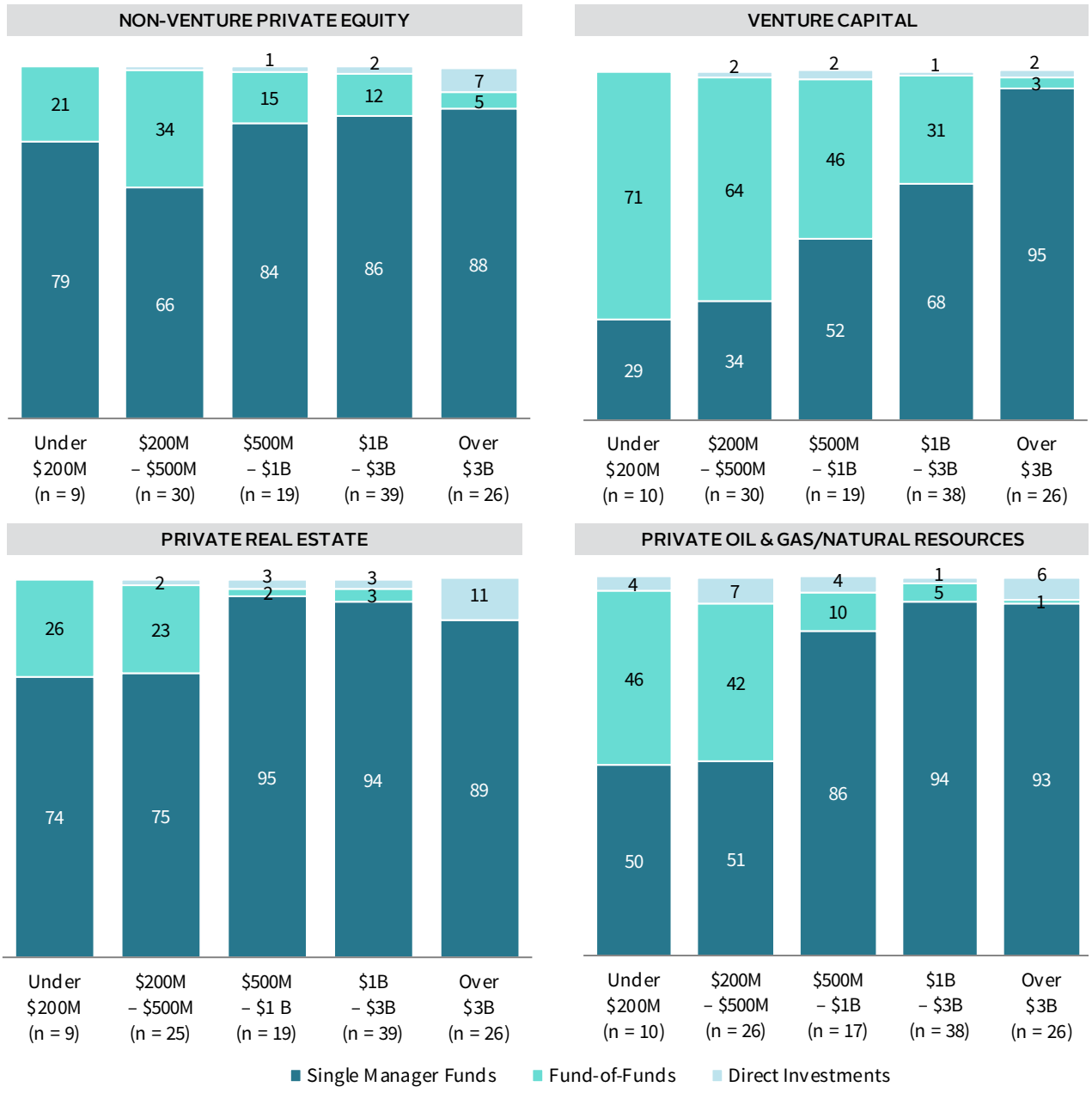
HEDGE FUNDS. There are two primary types of investment vehicles that endowments use when implementing their hedge funds allocations. A single manager fund is a type of investment vehicle where the investment manager makes the decisions for the securities and assets held within the fund. In contrast, a fund-of-funds is a type of strategy where the investment manager invests in a collection of other investment funds. Over 90% of responding endowments rely solely on single manager funds to implement their hedge fund allocations. While smaller endowments are more likely than larger endowments to use funds-of-funds, the prevalence is still low among the smaller portfolios in our study. Less than one-quarter of participating endowments under $500 million reported an allocation to fund-of-funds in their hedge fund strategies.

PRIVATE INVESTMENTS. Endowments also have single manager funds and fund-of-funds at their disposal when implementing private investment allocations. In addition, some endowments make direct investments in private strategies. Direct investments can take the form of co-investments that are made alongside a general partner or solo investments that are originated by the endowment itself.

Compared to hedge funds, implementation practices are more varied across private investment asset classes. This is most evident in venture capital where fund-of-funds are far more common among smaller endowments than they are for larger C&Us. On average, 71% of the venture capital allocation for endowments under $200 million is implemented via fund-of-funds. In contrast, fund-of-funds make up just 3% of the average venture capital allocation for endowments over $3 billion. Figure 43 shows the average breakdown of allocations by implementation category for other private strategies. Private credit strategies are not included in this exhibit as endowments across all asset sizes rely almost exclusively on single manager funds to implement these allocations.

FIGURE 43 PORTFOLIO IMPLEMENTATION: PRIVATE INVESTMENTS

As of June 30, 2021 • Equal-Weighted Means (%)



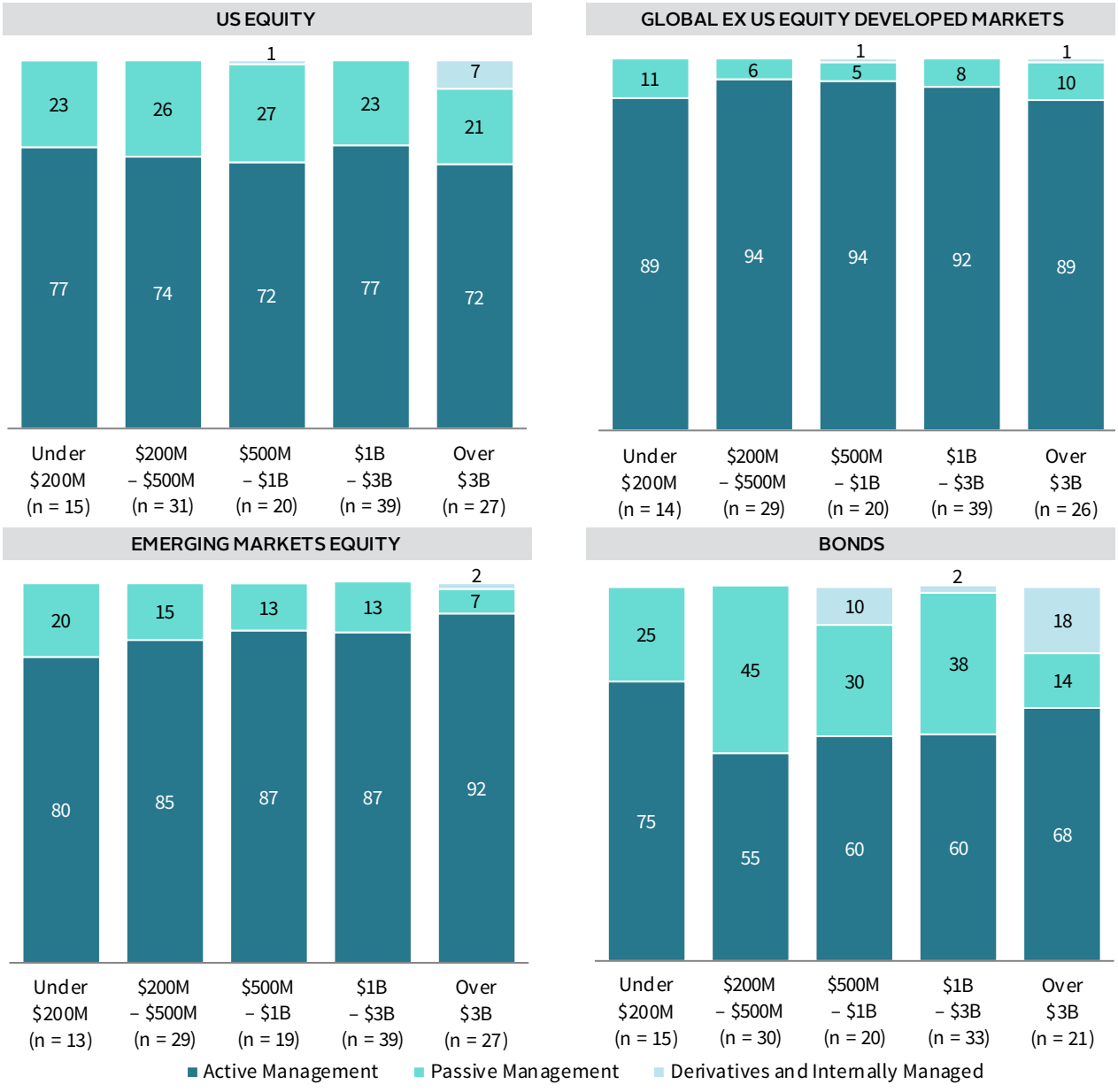
Source: College and university data as reported to Cambridge Associates LLC.
Note: Analysis shows the average allocation of assets across the implementation categories for each peer group.

PUBLIC EQUITIES AND BONDS. For traditional bonds and equities, endowments primarily use external managers to implement their allocations. These assets are invested either through active or passively managed investment vehicles. Some endowments also manage assets internally or use derivatives to achieve desired exposures. The use of these implementation methods is most common among the largest endowments.

When considering the average breakdown of US equity allocations, the majority of assets are invested via active managers (Figure 44). The proportion of US allocations invested through active managers is similar across all asset size groups. For global ex US equities, the average proportion of allocations invested through active managers is even higher. While global equity managers are not displayed in Figure 44, nearly 90% or more are invested in active managers across all asset size groups.

FIGURE 44 PORTFOLIO IMPLEMENTATION: TRADITIONAL EQUITIES AND BONDS

As of June 30, 2021 • Equal-Weighted Means (%)



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

Note: Analysis shows the average allocation of assets across the implementation categories for each peer group.

Passive management tends to be more common among bonds than it is in the public equity categories. This strategy was most common among endowments between $200 and $500 million where slightly less than half (45%) of the US fixed income allocation was invested passively. The percentage was lowest for endowments over $3 billion at 14%.

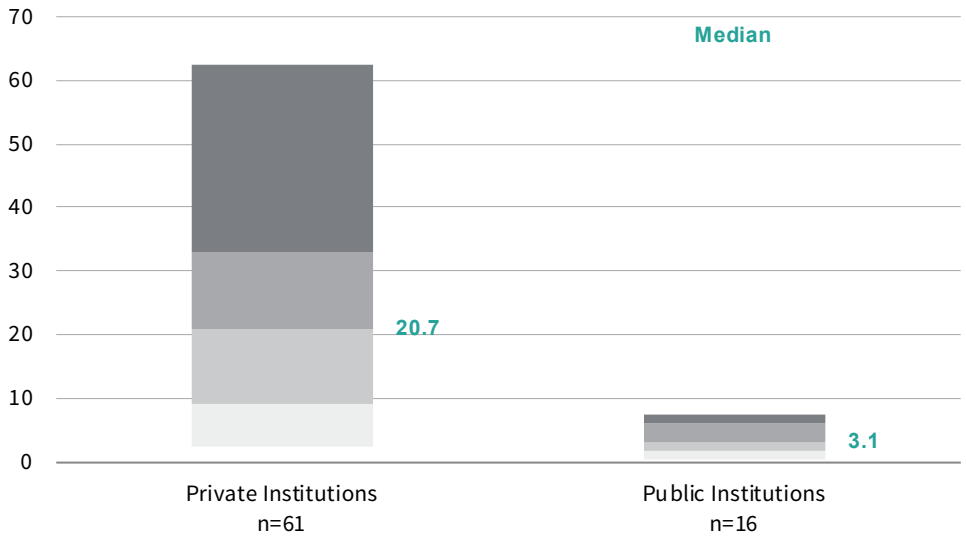
Section 5: Institutional Support

ENDOWMENT DEPENDENCE

Most colleges and universities receive the majority of their revenue from operations (instruction, research, student housing, food services, patient care, etc.). However, since tuition, auxiliary, and research revenue do not fund all their costs, institutions depend on endowment distributions and gifts for additional support. The median ratio of endowment support–to-operating budget for private colleges and universities was 20.7% in fiscal year 2021. The range of endowment dependence varied considerably among private institutions, ranging from 2.5% at the 95th percentile to 62.3% at the 5th percentile. In addition to student and research revenue, public institutions receive financial support from state appropriations, and as a result, endowment distribution generally funds less of the operating budget compared to private institutions. For the 16 public institutions that provided data, the median endowment dependence was 3.1% in fiscal year 2021 (Figure 45).

FIGURE 45 ENDOWMENT DEPENDENCE

Fiscal Year 2021 • Percent (%) • By Percentile Ranking



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

Note: For more information, see page 76 in the Appendix.

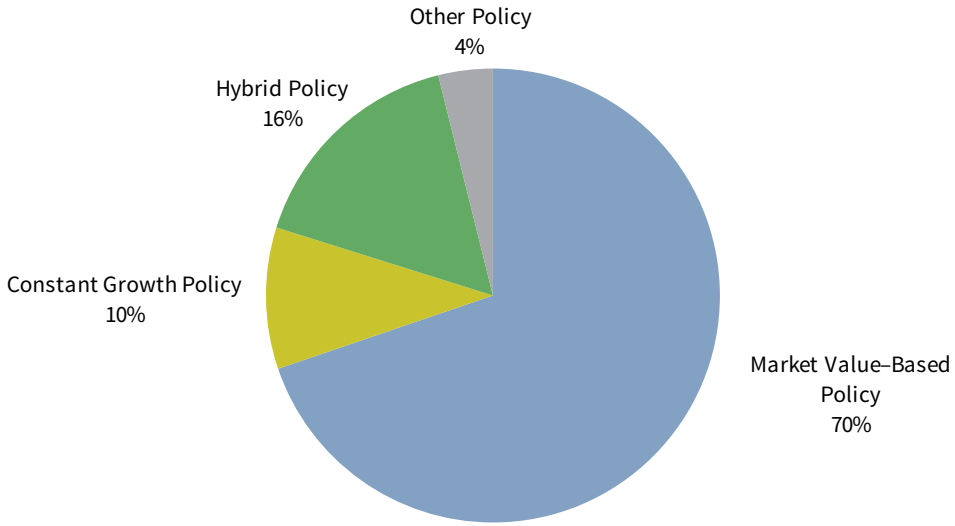
SPENDING POLICIES

An institution's endowment spending policy serves as a bridge that links the investment portfolio and the enterprise. The policy provides a basis for the calculation of the annual distribution from the endowment. Spending policies are 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.

The majority (70%) of responding institutions continue to use a market value–based rule which dictates spending a percentage of a moving average of endowment market values (Figure 46). By using a target spending rate, this rule type links the spending

distribution amount directly to the endowment's market value. The annual distribution will grow in periods where portfolio values trend upward and decrease after periods where portfolio values experience significant declines. By curtailing spending after the market value declines, this rule type places an emphasis on preserving the endowment's purchasing power.

FIGURE 46 SPENDING RULE TYPES
Fiscal Year 2021 • n = 129



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

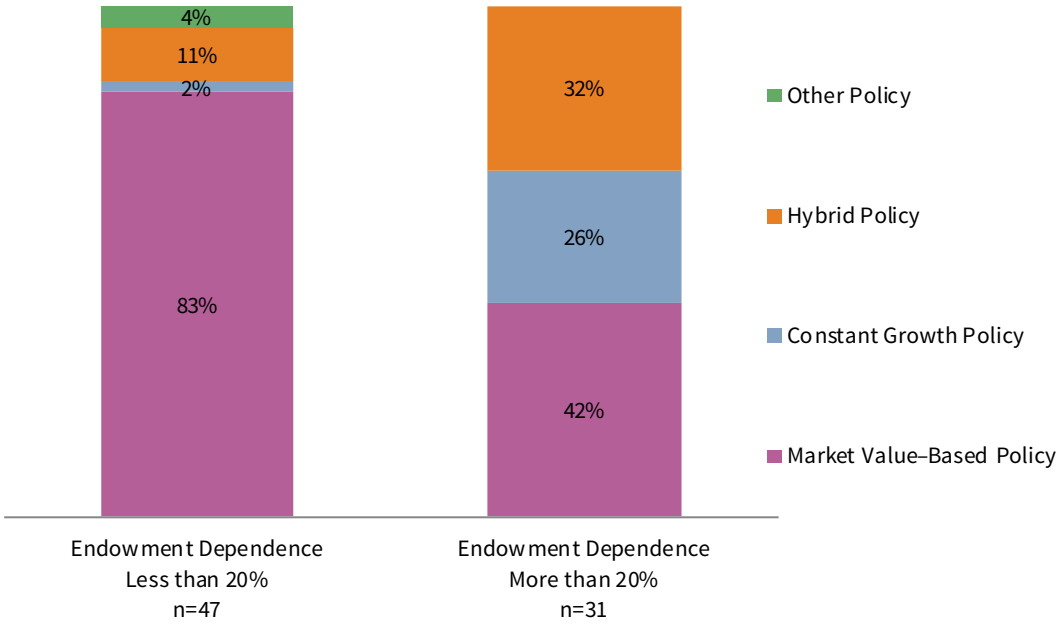
Approximately 10% of respondents use a constant growth rule. This rule type increases the prior year's spending amount by a measure of inflation and/or a prespecified percentage. Institutions tend to use this rule type when the endowment is a significant source of operating revenue and volatility in annual spending distributions is less tolerable. Though the strict application of a constant growth rule produces predictable spending, most institutions using this rule type impose a spending cap and floor based on a percentage of the endowment's market value, or a moving average of market values. Spending collars essentially transform the constant growth rule to a market value–based rule in times of significant endowment growth or contraction to avoid a complete disconnect between spending and the endowment market value.

Another 16% of respondents use a hybrid spending rule, which 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 market-value rule. A hybrid rule essentially has the effect of spending a percentage of an exponentially weighted average market value that is adjusted for inflation.

The level of endowment dependence seems to be a key factor that institutions consider when setting an appropriate spending policy. A market value–based rule was used by the vast majority (83%) of respondents with endowment dependence ratios below 20% (Figure 47). However, practices are much more varied among institutions with

endowment support ratios above 20%. A market value–based rule was still the most commonly cited rule type among this latter group (42%) but was followed closely by the hybrid (32%) and constant growth (26%) rule types. The more predictable stream of spending dollars presumably makes the constant growth and hybrid rules appealing to institutions with higher endowment dependence.

FIGURE 47 SPENDING RULE TYPES BY ENDOWMENT DEPENDENCE
Fiscal Year 2021 • Percent (%)

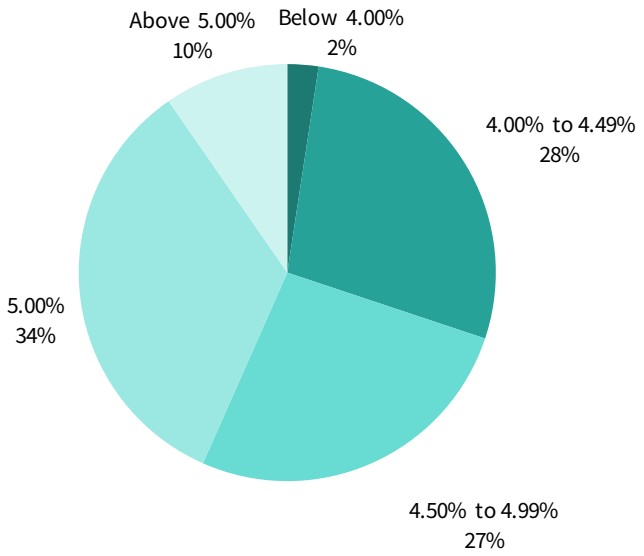


Source: College and university data as reported to Cambridge Associates LLC.

TARGET SPENDING RATES. A market value–based rule dictates spending a percentage of the endowment's market value, which is most often represented by a moving average over a smoothing period. A prespecified target spending rate is applied to the average market value to determine how much of the endowment should be distributed on an annual basis. Some institutions with a market value–based policy allow some discretion by setting a prespecified range within which the target spending rate may fall. For the purposes of comparing target spending rates in our analysis, we assume the midpoint for institutions that use a discretionary range.

The target spending rate for most endowments in this study lies somewhere between 4% to 5%. The most common spending rate continues to be 5% and was reported by approximately one-third of respondents. A slightly smaller percentage of institutions (28%) use a rate that falls between 4% to 4.49%, while another 27% of respondents use a rate that falls between 4.5% to 4.99%. On the outer ends of the distribution, just 10% of respondents reported a spending rate above 5% and even fewer (2%) reported a target spending rate below 4% (Figure 48).

FIGURE 48 TARGET SPENDING RATES FOR MARKET VALUE–BASED RULES
Fiscal Year 2021 • n = 83



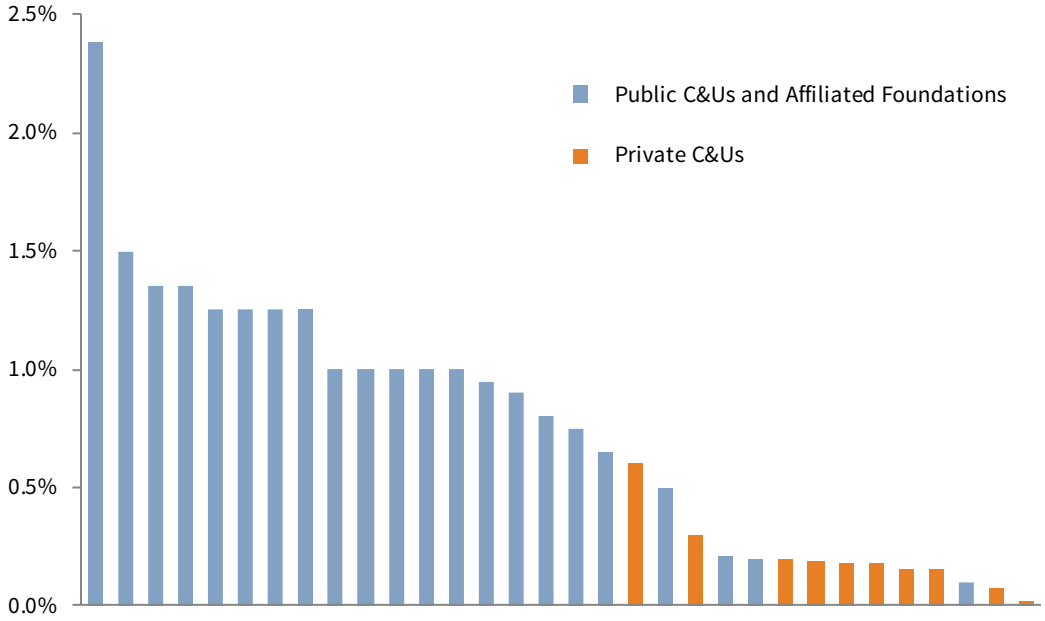
Source: College and university data as reported to Cambridge Associates LLC.

Most endowments with a market value–based rule keep their target spending rate consistent from one year to the next. However, over the long term there are many that do make changes. Of the 54 institutions that reported policy data in both 2011 and 2021, just under half (46%) used a different target spending rate in 2021 compared to ten years prior. One-third (33%) of respondents decreased their target spending rate over this time period while 13% have increased their rate.

ADMINISTRATIVE FEES. In addition to supporting the university's annual operating budget, some institutions may assess a fee on the endowment and other assets under management that goes beyond the spending policy distribution. The assessment—known as an administrative fee—covers internal investment management costs and, in many instances, can also pay for expenses related to fundraising. In the case of a separate management company or affiliated foundation, the administrative fee funds the cost of operating that organization. Of the 32 institutions that reported an administrative fee, 22 were public universities or affiliated foundations and 10 were private universities.

The wide range of fees reported among respondents can be attributed to the level of services provided as well as the amount of assets under management. In instances where the fee covers both internal investment management costs and fundraising expenses, the rate will be higher compared to other instances where the fee solely covers investment costs. When it comes to comparing similar organizations like affiliated foundations, our data show that larger asset pools tend to charge lower fees than smaller asset pools. While the median fee for public universities and affiliated foundations was 1.0%, the actual rates ranged from 0.1% on the low end to 2.4% on the high end. The median administrative fee for the ten private universities that provided data was 0.2% and ranged from 0.02% to 0.60% (Figure 49).

FIGURE 49 ADMINISTRATIVE FEES CHARGED TO THE ENDOWMENT
Fiscal Year 2021 • n = 32



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

NET FLOW RATE

The combination of the total outflows (spending and other appropriations) and inflows (gifts and other additions) for the portfolio constitutes the net flow rate. The net flow rate is calculated as a percentage of the LTIP market value at the beginning of the fiscal year. Net flow can lend insight into the liquidity needs of the portfolio. As is typically the case, the average net flow rate among participants was negative (-1.9%) in fiscal year 2021, meaning the amount of withdrawals from the portfolio surpassed the amount of additions for most respondents. The average outflow rate was -4.9%, while the average inflow rate was 3.0%.

Inflows are mainly driven by endowed gifts and are represented by the dark green shading in the bar chart on Figure 50. On average, gifts represented 79% of total inflows received among participants in fiscal year 2021. Some institutions receive additional inflows from operations or other sources, which is represented by the light green shading. The endowment spending policy distribution (dark pink shading) represents the biggest portion of outflows, while other recurring spending and one-time appropriations (lighter pink shadings) make up a smaller portion. On average, spending policy distributions represented 89% of total outflows in fiscal year 2021.

Public colleges and universities had a higher average net flow rate (-0.9%) in fiscal year 2021 compared to private institutions (-2.2%). This was attributable to both aspects of the net flow calculation. Not only did public institutions have a higher average inflow rate (3.7% vs 2.8%) in fiscal year 2021, but they also had a lower average outflow rate (-4.6% vs -5.0%).

FIGURE 50 NET FLOW RATES FOR FISCAL YEAR 2021

Percent (%) • n = 67

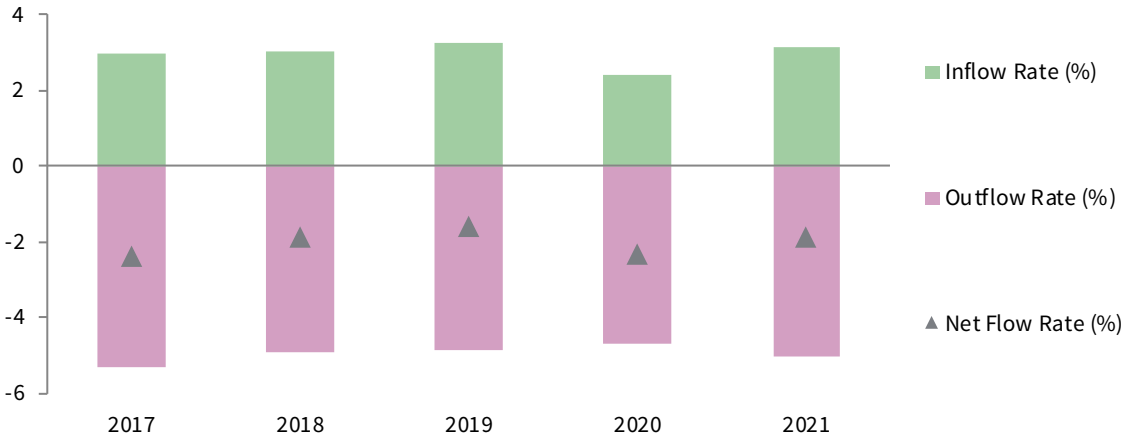
	All C&U Mean	Private C&U Mean	Public C&U Mean
Outflow Rate	-4.9	-5.0	-4.6
Inflow Rate	3.0	2.8	3.7
Net Flow Rate	-1.9	-2.2	-0.9
n	*67*	*51*	*16*

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

Figure 51 shows the average net flow rate for the 34 participants that provided a detailed breakdown of flows over the last five years. The average rates track within a relatively narrow band over this five-year period, ranging from a low of -2.4% to a high of -1.6%. In 2021, the peer group had a higher average spending rate compared to one year prior. However, that increase was more than offset by stronger inflows, which resulted in a net flow rate that increased year-over-year.

FIGURE 51 HISTORICAL AVERAGE NET FLOW RATES

Fiscal Years 2017–2021 • n = 34



	2017	2018	2019	2020	2021
Outflow Rate	-5.3	-4.9	-4.9	-4.7	-5.1
Inflow Rate	3.0	3.0	3.2	2.4	3.2
Net Flow Rate	-2.4	-1.9	-1.6	-2.3	-1.9

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

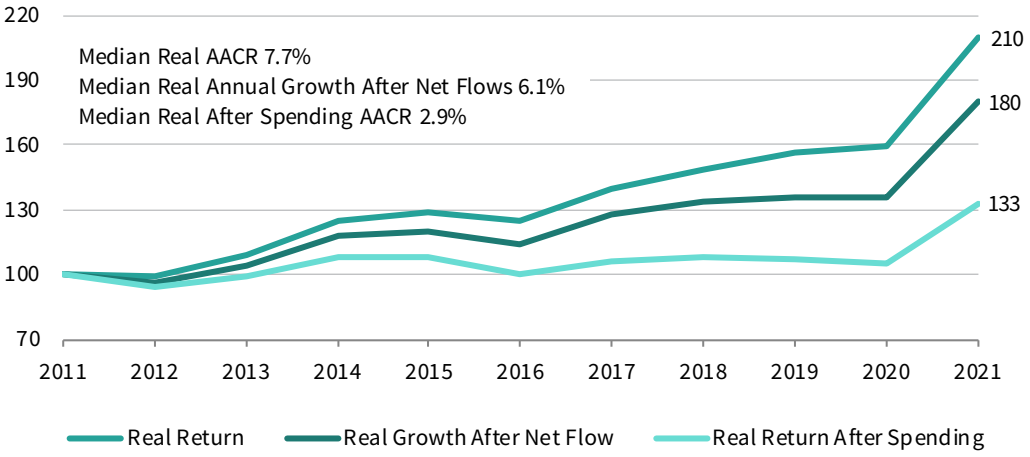
Often the evaluation of endowment health is focused on the relationship of investment performance and endowment spending, which is also known as the payout or outflow rate. A key objective has been to achieve real investment returns that exceed the average annual payout rate over the long term. However, institutions often expand programs and facilities so that budgets grow at a faster rate than inflation, thus necessitating additional endowment growth to maintain the endowment's role in the enterprise. Evaluating the net flow rate along with traditional investment performance metrics is important to ensuring that the portfolio keeps up with enterprise growth and maintains its role in supporting the institution.

Figure 52 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 2011, the portfolio would have more than doubled on an inflation-adjusted basis by the end of fiscal year 2021, growing to $210 in real dollars. A large proportion of that growth is attributed to the very strong performance of the past year. After deducting the annual spending distributions from real investment performance, the investment would have ended the ten-year period with $133. The real after spending value is much smaller than the statistic based purely on performance, but it would have resulted in significant real growth over this period.

There is one more important part of the asset growth picture. The LTIP market value and purchasing power is also driven by inflows that come in as gifts and other funds designated for long-term investment. In the same figure, the median real growth of the LTIP value—which includes both investment performance and total net flows—is tracked by the middle line and grew by 80% over the ten-year period. Because of the steady inflow from gifts and other additions that most institutions experienced, the actual growth in the portfolio was substantially higher than growth based on returns after spending only. Since maintaining the purchasing power of existing endowment gifts is a key objective in endowment management, the traditional return after spending statistic should not be dismissed. However, this statistic can understate the actual extent of asset growth and the endowment's capacity to support a growing enterprise. 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.

FIGURE 52 CUMULATIVE DOLLAR GROWTH AFTER INFLATION, NET FLOWS, AND SPENDING

Years Ended June 30 • Base Year 2011 = $100 • n = 74



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

ASSET COMPOSITION

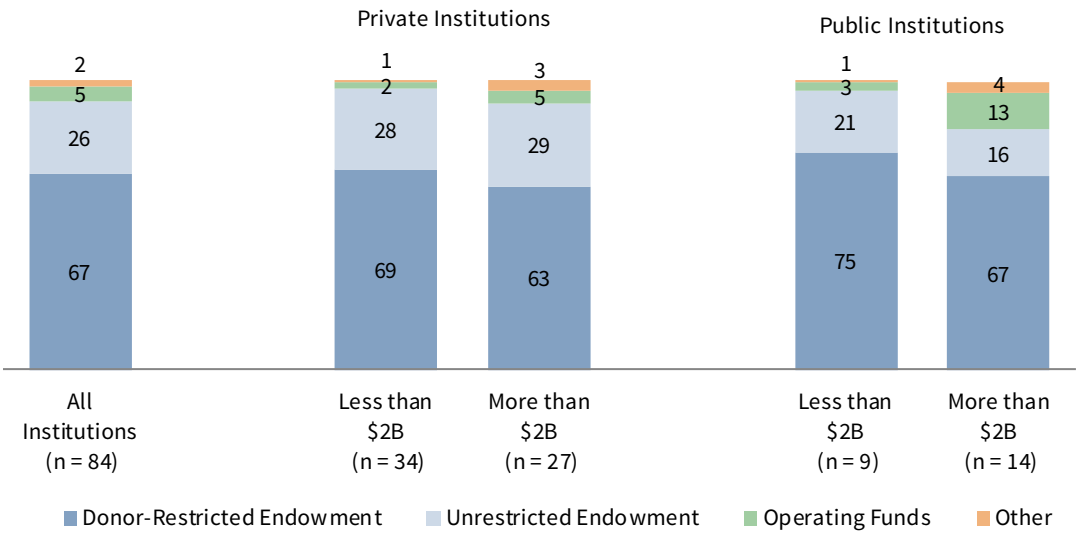
While the terms "long-term investment pool" and "endowment" are often used interchangeably, they are not synonymous. Understanding the types of assets that come together in the LTIP is important to understanding the portfolio's role and investment profile.

LONG-TERM INVESTMENT PORTFOLIO. The LTIP is the group of assets for which institutions report their asset allocation and returns in this study. Endowment assets comprise all or the vast majority of the LTIP for most respondents. On average, 93% of the LTIP were endowment assets as of June 30, 2021 (Figure 53). The endowment portion can further be broken down into donor-restricted (67%) or unrestricted (26%). The portion that is classified as unrestricted endowment is lower at public colleges and universities compared to private institutions.

In addition to endowment assets, many institutions invest a portion of their operating funds and/or other assets in the LTIP. On average, operating funds and other assets represented 5% and 2% of the LTIP, respectively. Examples of other assets in the LTIP include life income and annuity funds, special purpose funds, and assets invested by external organizations. The average composition of the LTIP is mostly similar when the respondent group is broken down across public and private institutions in different size bands. Public institutions with portfolios over $2 billion tend to have a higher proportion of non-endowment assets in their LTIP compared to other peers.

FIGURE 53 COMPOSITION OF LONG-TERM INVESTMENT PORTFOLIO

Equal-Weighted Means as of Fiscal Year-End 2021 • Percent (%)



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

OPERATING FUNDS AND OTHER LIQUIDITY SOURCES. For many institutions, the LTIP is not the only investment pool or source of liquidity. Assessing liquidity sources outside of the LTIP can help to inform liquidity needs within the LTIP. Operating funds and lines of credit are the two most common sources of short-term liquidity for colleges and universities.

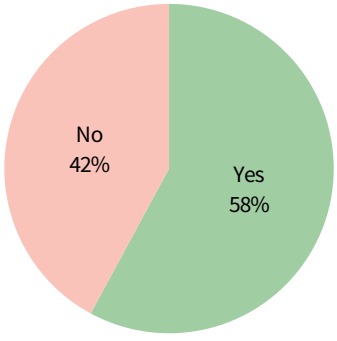
More than half of respondents (58%) that provided data on their operating funds invest a portion of those funds in the LTIP. The median percentage of operating funds invested in the LTIP was 37.6%, but this percentage varies considerably across respondents (Figure 54). The remaining 42% of respondents hold all operating reserves outside of the LTIP. Operating funds held outside of the LTIP tend to be the first source of liquidity when immediate funding is needed.[6]

6 Please see Tracy Filosa et al., "Disruption, Liquidity Sources, and the Role of the Endowment," Cambridge Associates Research Report, 2020, for a more in-depth discussion on this topic.

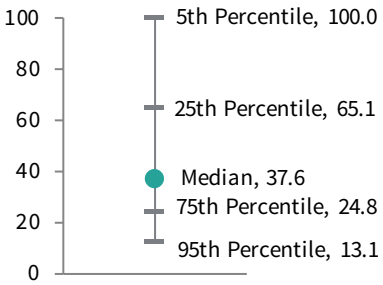
FIGURE 54 OPERATING FUNDS

Fiscal Year-End 2021

Operating Funds Invested in the LTIP
(n = 76)



Percentage (%) of Operating Funds Invested in the LTIP
(n = 43)



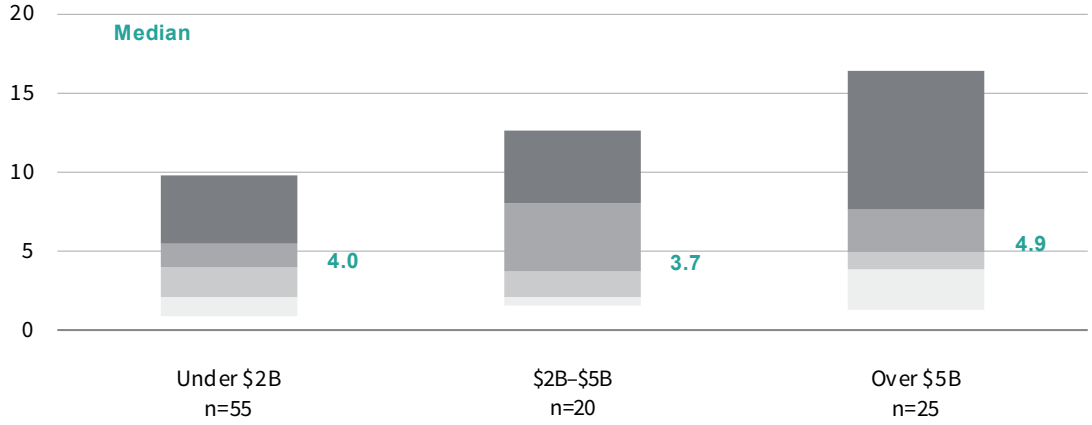
Source: College and university data as reported to Cambridge Associates LLC.

In addition to operating funds, many colleges and universities have access to extra liquidity through a line of credit. Of the 80 institutions that provided data, 17 had outstanding amounts drawn against their credit line as of fiscal year-end. There are many enterprise and balance sheet factors that may determine the sizing of a line of credit. Among the respondents to this study, the size of credit lines varied considerably, ranging from a low of $4 million to more than $1 billion on the high end.

DEBT. Figure 55 shows the range of endowment-to-debt ratios for separate asset size groups. Endowments greater than $5 billion had the highest median ratio (4.9x), with a few reporting levels into the double digits. The ratio increased in fiscal year 2021 for more than 90% (71 of 76) of the respondents that provided data for each of the last two years. This was attributable to the exceptional investment performance over the past year and endowment values growing at a much higher rate than the amount of outstanding debt for the vast majority of institutions. In fact, the median change in outstanding debt year-over-year was -1%, which means that a majority of respondents actually saw a decline in their level of debt.

FIGURE 55 ENDOWMENT TO DEBT

As of June 30, 2021 • n = 100 • By Percentile Ranking



Source: Endowment data as reported to Cambridge Associates LLC.

Note: For more information, see page 76 in the Appendix.

Section 6: Investment Office Staffing and Governance

INVESTMENT OFFICE STAFFING AND OUTSIDE RESOURCES

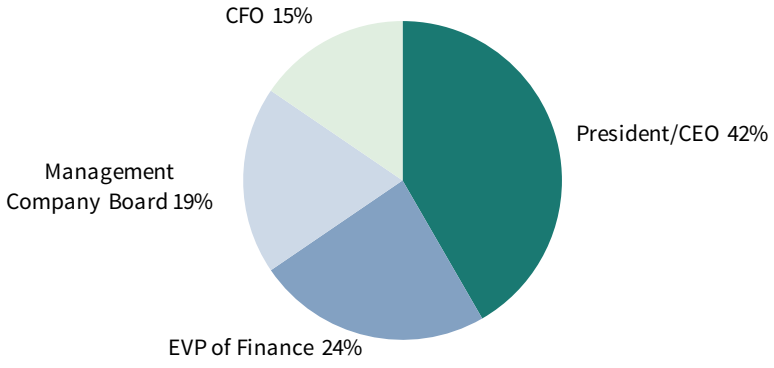
The primary mission of an investment office is to assume day-to-day responsibility for the endowment and other investment assets. This mission will be defined by the set of functions that internal investment office staff will carry out or oversee. Since both the investment philosophy and the demands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

CHIEF INVESTMENT OFFICER. The presence of a dedicated Chief Investment Officer (CIO) correlates with asset size and is most common at larger endowments. Nearly all (97%) of the respondents with endowments greater than $1 billion have a full-time CIO, while 69% of respondents with assets between $500 million and $1 billon indicated they had a CIO in place. There was not a single endowment less than $500 that had a CIO.

Organizations with smaller asset sizes rely more heavily on outside advisors or a chief financial officer to oversee investment assets. In these cases, the chief financial officer might work closely with external investment advisors to develop an investment strategy and monitor investment managers. It is also becoming more common place for endowments of this size to outsource some or the entire portfolio to an OCIO.

Where there is a CIO, it is most common for the position to report directly to the CEO or President of the institution. Some large public universities have created legally separate management companies who are charged with managing the universities' investments. In these cases, the CIO (or CEO of the Management Company) will report directly to the Management Company Board (Figure 56).

FIGURE 56 CHIEF INVESTMENT OFFICER REPORTING LINES
Fiscal Year 2021 • n = 84



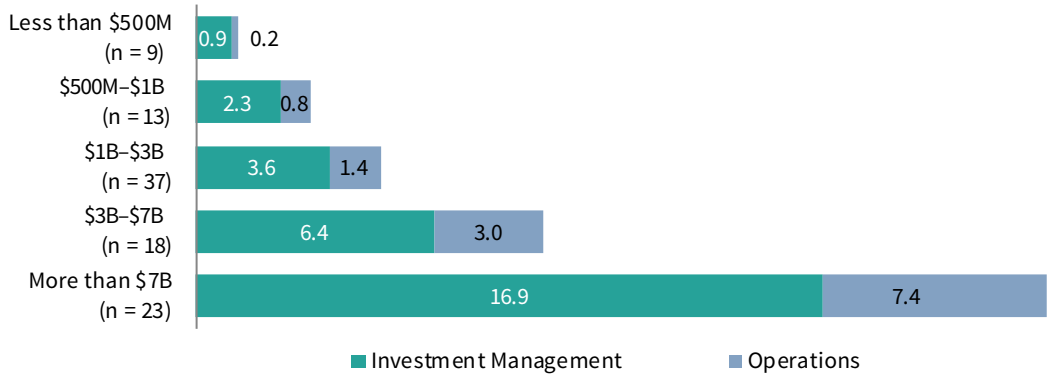
Source: College and university data as reported to Cambridge Associates LLC.

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

Our survey shows that investment office staffing typically correlates with asset size. This is perhaps not surprising as larger portfolios tend to invest with more fund managers and favor a more active investment approach, which can require more resources. Endowments that oversee more than $7 billion in assets employ a total of 24.3 full-time equivalent (FTE), on average (Figure 57). The average total FTE is split approximately two-thirds to investment management staff (16.9) and one-third (7.4) to operations staff. On the opposite side of the asset size spectrum, endowments under $500 million have much smaller in-house investment resources (if any) and use outside professionals to manage or assist in managing the investment portfolio.

Endowments with assets between $3 billion and $7 billion employed an average of 9.4 FTE as of fiscal year-end 2021. The average for this cohort was substantially lower than the figure calculated in last year's study (13.9). However, this differential is attributable to changes to the peer group as opposed to an industry-wide trend in institutions' trimming their staff. The robust investment performance from this past year resulted in several endowments moving up and out at the top end of this size cohort, and a host of new institutions entering the group on the lower end of the size range. Of the 18 institutions in this asset size range, just four reported a decrease in their FTE in fiscal year 2021.

FIGURE 57 AVERAGE STAFFING LEVELS
Fiscal Year 2021 • Number of FTEs



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

Personnel consists of a mixture of senior-, mid-, and junior-level positions. Senior investment professionals typically carry the title of Investment Director, Managing Director, or VP and have more than ten years of professional experience. Mid-level professionals can hold the titles of Investment Officer or Associate and bring five to ten years of experience. Junior-level positions are usually recent graduates or those with a few years of experience. Junior positions usually carry the title of Investment Analyst or Associate. Figure 58 provides the average FTEs by asset size and position levels for investment management and operations positions.

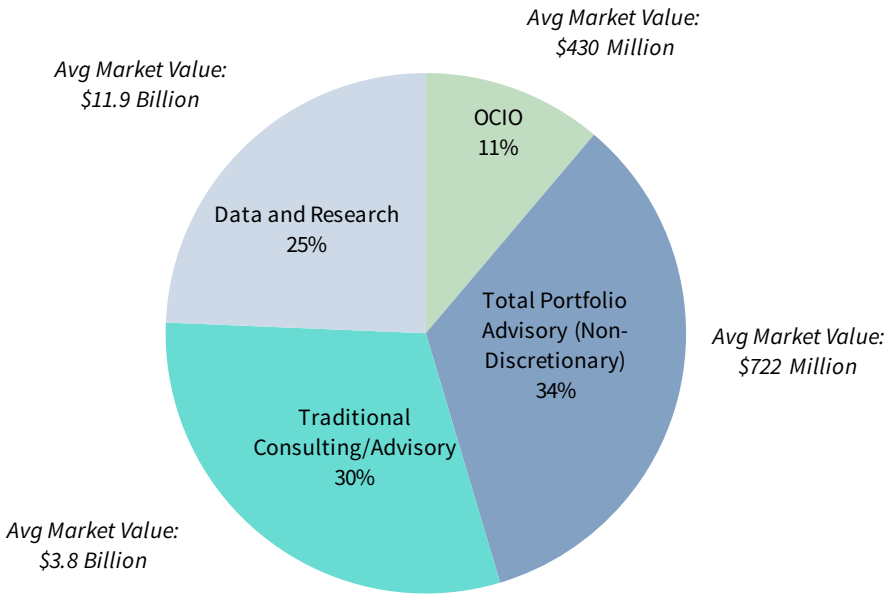
FIGURE 58 AVERAGE INVESTMENT STAFF BY FUNCTION
Fiscal Year 2021 • Number of FTEs

	Investment Management			Investment Operations		
	Senior	Mid	Junior	Senior	Mid	Junior
More than $7B	7.0	4.5	6.4	1.4	2.8	4.7
n	*23*	*16*	*20*	*16*	*19*	*20*
$3B–$7B	2.4	2.5	2.3	1.0	1.1	1.7
n	*16*	*10*	*15*	*10*	*16*	*15*
$1B–$3B	1.5	1.5	1.4	0.8	1.0	1.2
n	*31*	*12*	*23*	*8*	*22*	*19*
$500M–$1B	1.1	0.8	1.0	0.9	0.8	0.8
n	*8*	*3*	*9*	*3*	*5*	*5*

Source: College and university data as reported to Cambridge Associates LLC.
Notes: Office leadership positions (CFO/CIO), IT, and legal support are not included in the analysis. Only institutions with personnel at the specific staffing level are included in each category. Therefore, the sum of the personnel across each category will not equal the total investment office FTEs. The Less than $500M cohort was not included due to insufficient observations.

RELIANCE ON OUTSIDE ADVISORS AND CONSULTANTS. Endowments engage external advisors and consultants in varying degrees and across a wide variety of functions. Based on survey responses and our understanding of how each survey participant engages with Cambridge Associates, Figure 59 broadly illustrates how the 152 participants in this study work with outside advisors or consultants. Endowments with assets less than $1 billion rely more heavily on external advisors to manage or help manage their investment portfolios, while larger endowments will seek outside support in the form of research, data, or asset class specialization.

FIGURE 59 USE OF EXTERNAL ADVISORS AND CONSULTANTS
Fiscal Year 2021 • n = 152



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

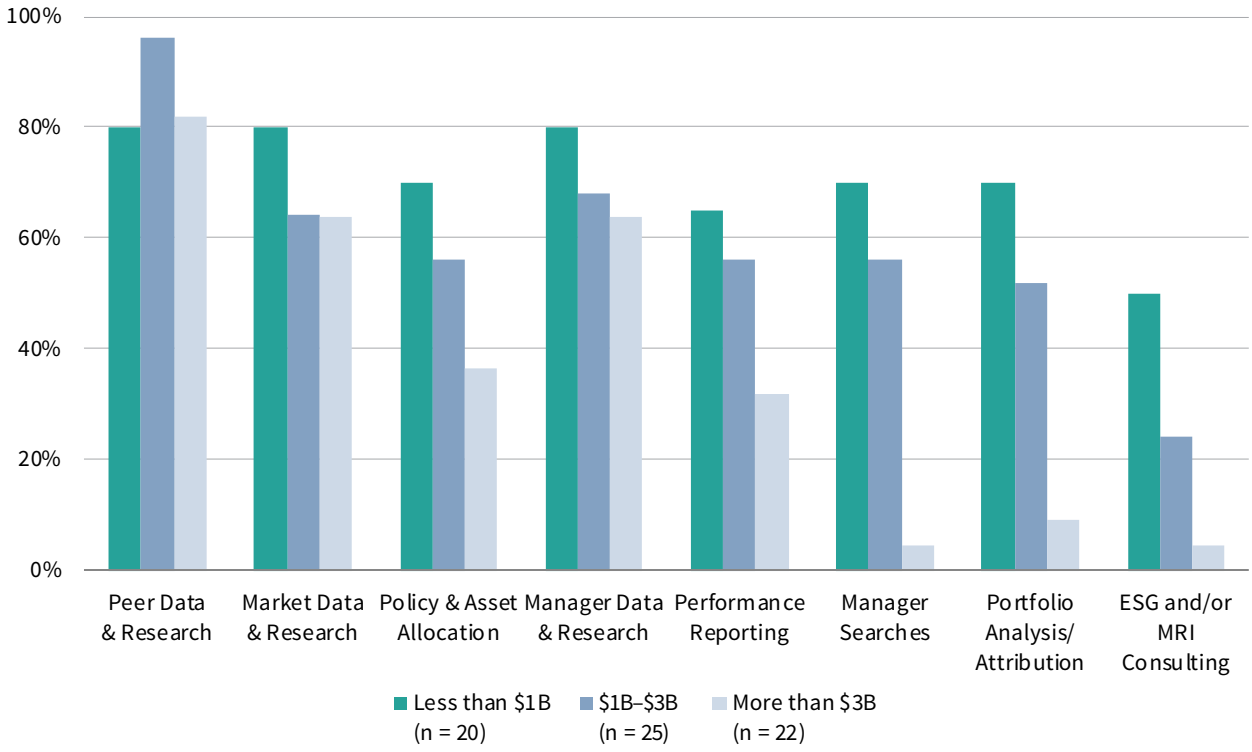
Discretionary portfolio management, also known as OCIO, allows institutions to fully delegate portfolio management decision making to an outside firm. These firms are accountable for portfolio strategy, implementation, day-to-day management, and operations. Managing the portfolio within agreed upon policy guidelines, the outsourced investment team makes manager selection, manager termination, tactical asset allocation, and portfolio rebalancing decisions. A relatively small proportion of the respondent group (11%) use CA under this management model.

Approximately one-third (34%) of institutions in our study use advisors for nondiscretionary portfolio management services for the total endowment. These institutions work with an outside team of investment professionals who provide day-to-day oversight of their portfolios, while retaining final decision making on portfolio investments. This model provides resources and expertise to contribute to portfolio management alongside an institution's staff.

Most larger endowments have built their own internal investment teams and are much less likely to use advisors for investment management services. One-quarter (25%) of participants use outside support for research, manager, peer, and benchmarking data. The average market value of endowments using consultants in this fashion is $11.9 billion. The remaining 30% of survey participants use external resources for a range of consulting services, including asset allocation reviews, manager searches, alternative assets management, ESG/MRI consulting, and performance reporting. The average asset size for this group of endowments is $3.8 billion.

Figure 60 examines the range of services other than portfolio management that are most commonly used by institutions of different sizes. Based on survey responses, smaller endowments rely more heavily on external advisors for policy and asset allocation, performance reporting, and manager searches than the largest endowments. Reliance on research and data was more consistent across all asset sizes.

FIGURE 60 USE OF EXTERNAL ADVISORS AND CONSULTANTS: TYPES OF SERVICES
Fiscal Year 2021 • n = 67 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: Analysis excludes institutions that use advisors for OCIO and nondiscretionary portfolio management, as the above services are included in those types of arrangements.

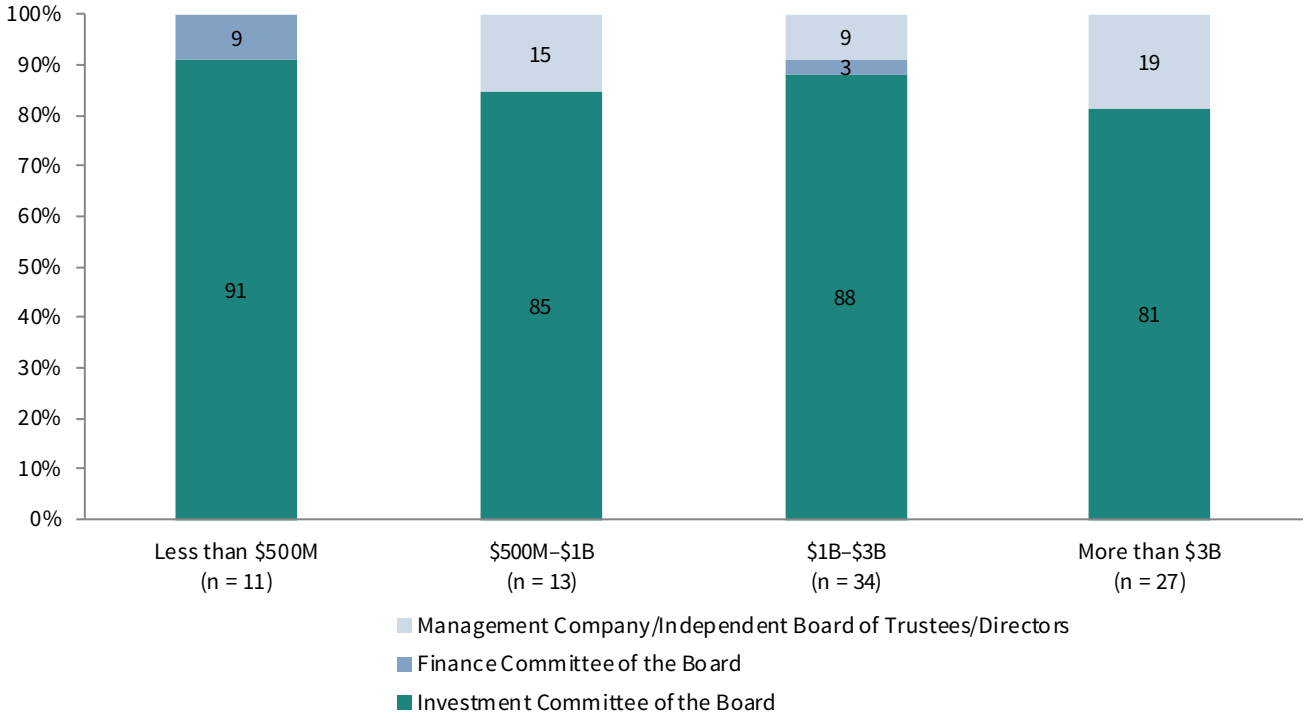
GOVERNANCE

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

GOVERNING BODY/OVERSIGHT COMMITTEE. Regardless of endowment size, an investment committee of the board most often has oversight over the investment office and/or outside advisors who manage the portfolio. In much smaller numbers, other governing bodies cited by respondents were a finance committee of the board, and management company/independent board of trustees/directors (Figure 61).

FIGURE 61 GOVERNING BODY OF OVERSIGHT COMMITTEE BY ORGANIZATION TYPE

Fiscal Year 2021 • Percent of Institutions (%)



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

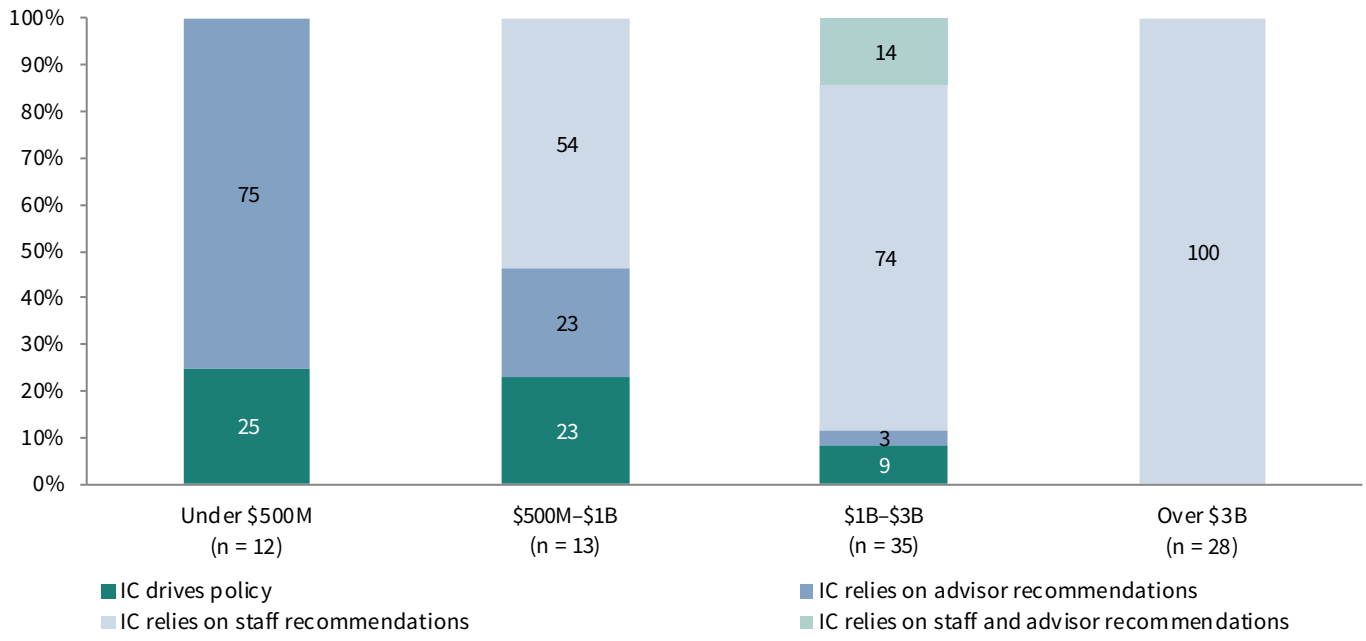
Some of the largest university endowments have established legally separate investment management companies, which have their own board of directors. In these cases, the management company's board typically has some overlap with that of the university.

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

There is a strong relationship between asset allocation policy development and size of the portfolio. For all participating endowments greater than $3 billion, asset allocation policy is developed by committees acting on staff recommendations (Figure 62). In contrast, committees at endowments less than $500 million depend far more on the recommendations of outside advisors or drive the policy autonomously. When it comes to rebalancing, both the investment committee's role and the advisor's role in portfolio rebalancing is steadily diminished as endowment size increases. Among endowments less than $500 million, 62% rely on advisors to make rebalancing decisions and 38% have their investment committee control this function. For endowments over $500 million, total staff discretion is most common (Figure 63).

FIGURE 62 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: ASSET ALLOCATION POLICY DEVELOPMENT

Fiscal Year 2021 • Percent of Institutions (%)

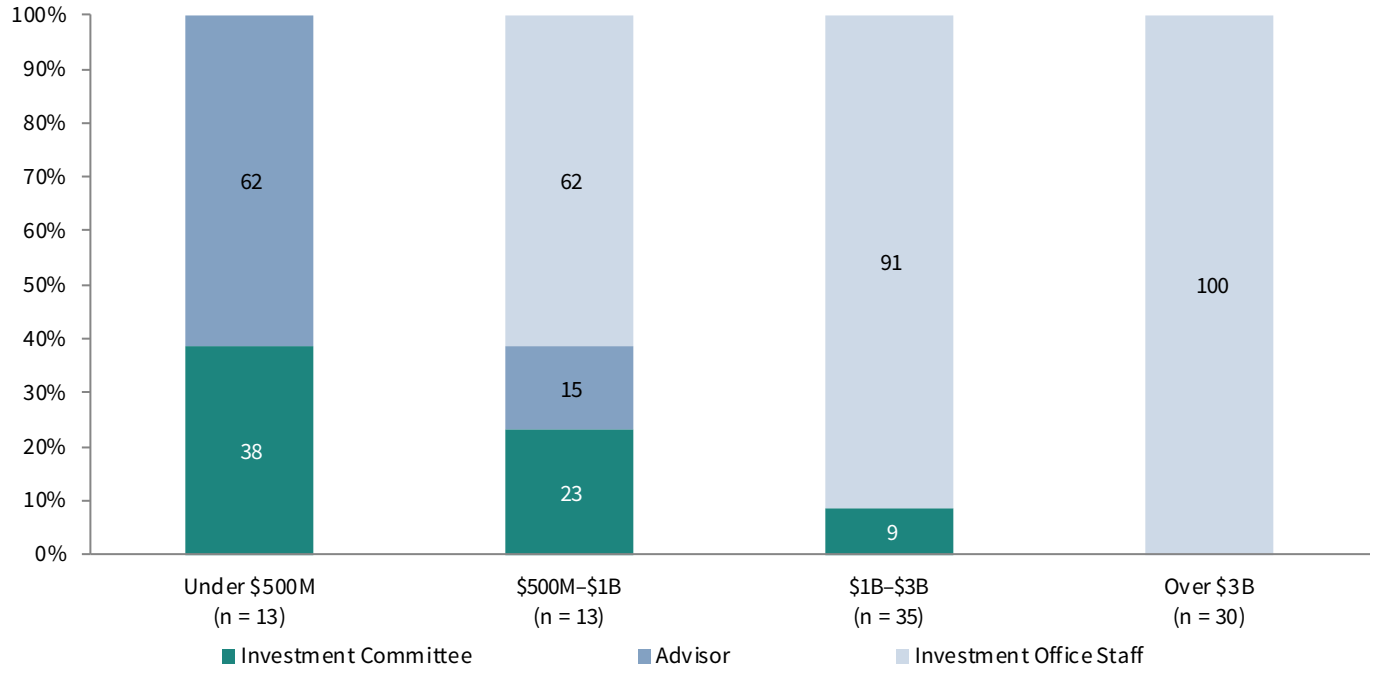


Source: College and university data as reported to Cambridge Associates LLC.

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

FIGURE 63 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: PORTFOLIO REBALANCING

Fiscal Year 2021 • Percent of Institutions (%)

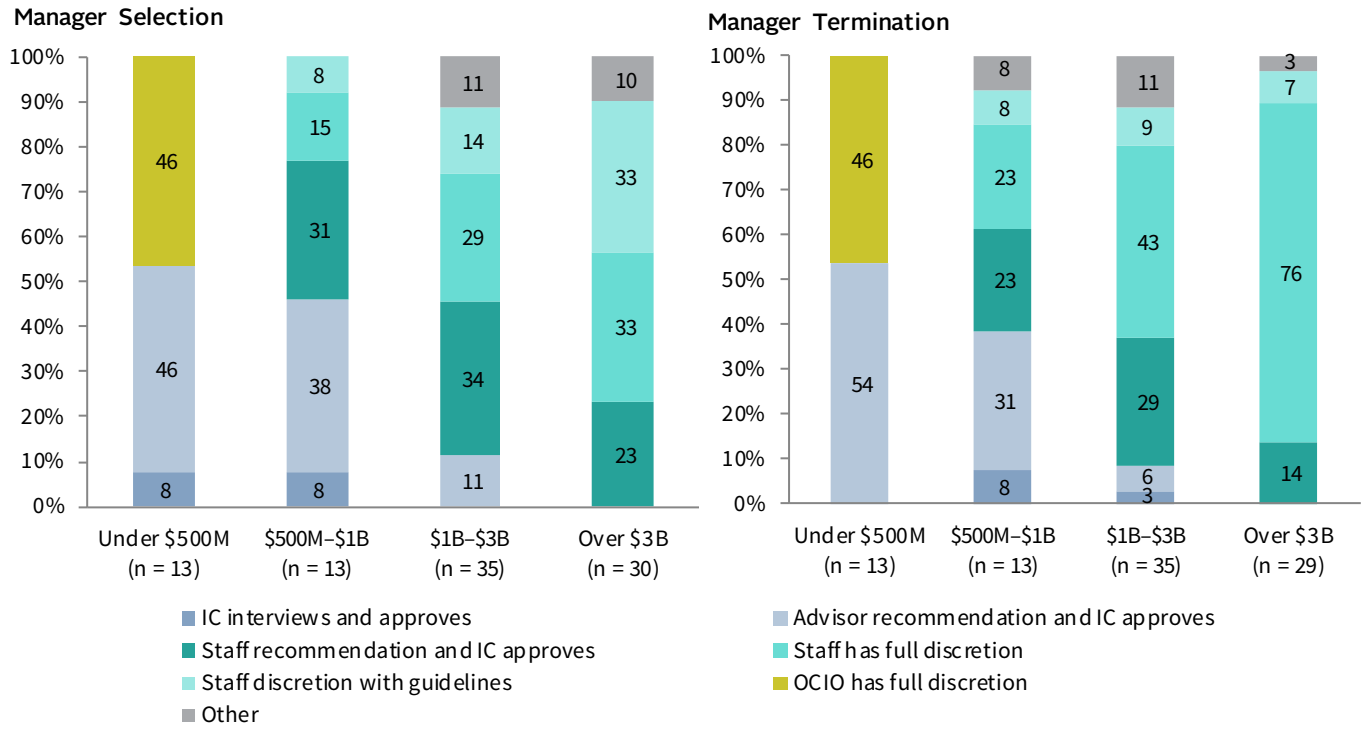


Source: College and university data as reported to Cambridge Associates LLC.

The process of manager selection and termination also involves committees, advisors, and staff, but with different degrees of discretion (Figure 64). Advisors play a significant role in both selection and termination of investment managers at endowments less than $500 million, with 46% delegating full discretion to an OCIO to make hiring and firing decisions. Among the investment committees involved in manager selection, the predominant role is to approve managers, but not interview them. Staff recommendations are increasingly relied upon from $500 million to $3 billion and staff discretion (with and without guidelines) accounts for most of the decision-making at endowments greater than $3 billion.

FIGURE 64 DECISION–MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: MANAGER SELECTION AND TERMINATION

Fiscal Year 2021 • Percent of Institutions (%)



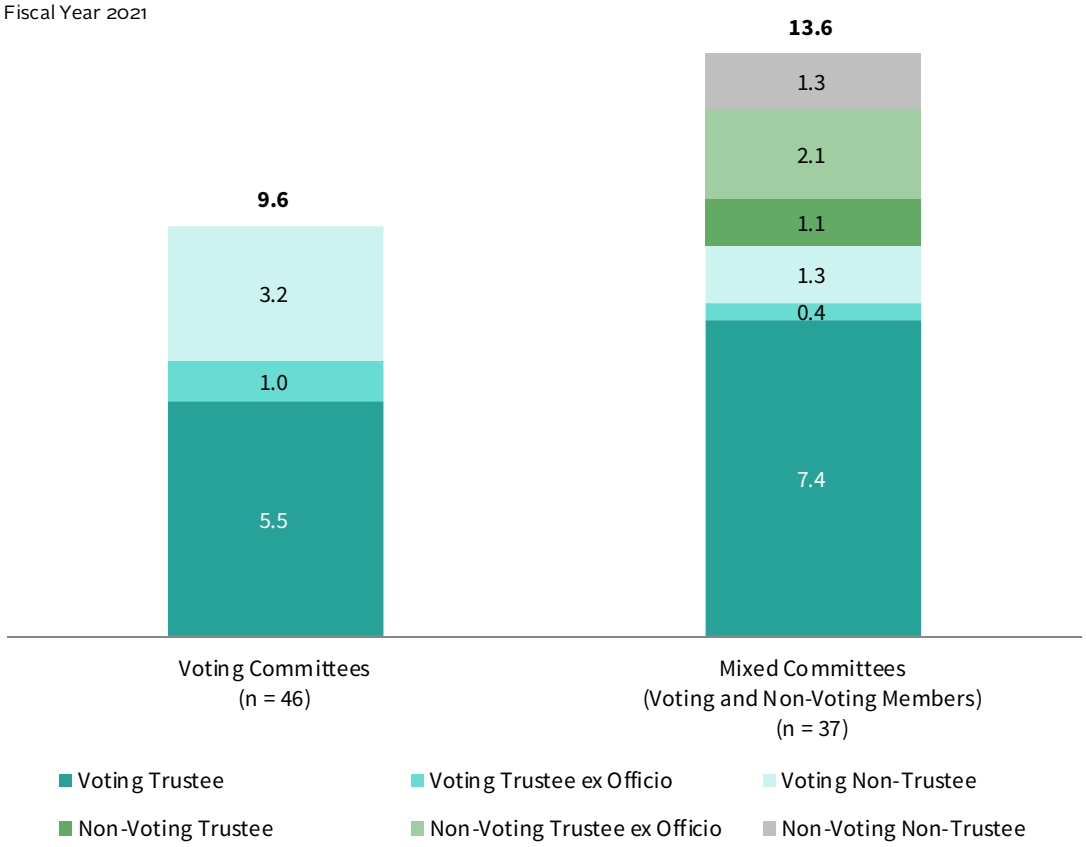
Source: College and university data as reported to Cambridge Associates LLC.

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

INVESTMENT COMMITTEE COMPOSITION. Two types of committees emerged from our survey data. We found that just over half of investment committees (46 of 83) are fully composed of voting members, while the remaining investment committees also include non-voting members. While mandatory voting encourages accountability, there can be good reasons to include non-voting members. Organizations should weigh the benefit of these advisory members against the prospects of an oversized committee.

The average size of voting committees is 9.6 members, which on average consist of 5.5 trustees, 3.2 non-trustees, and 1.0 ex officio members. Examples of ex officio committee members include the president of the college or chairman of the board or of another committee, whose investment committee membership is included in the official duties of the position. Committees including non-voting members averaged 13.6 people (Figure 65).

FIGURE 65 PROFILE OF INVESTMENT COMMITTEE MEMBERS
Fiscal Year 2021



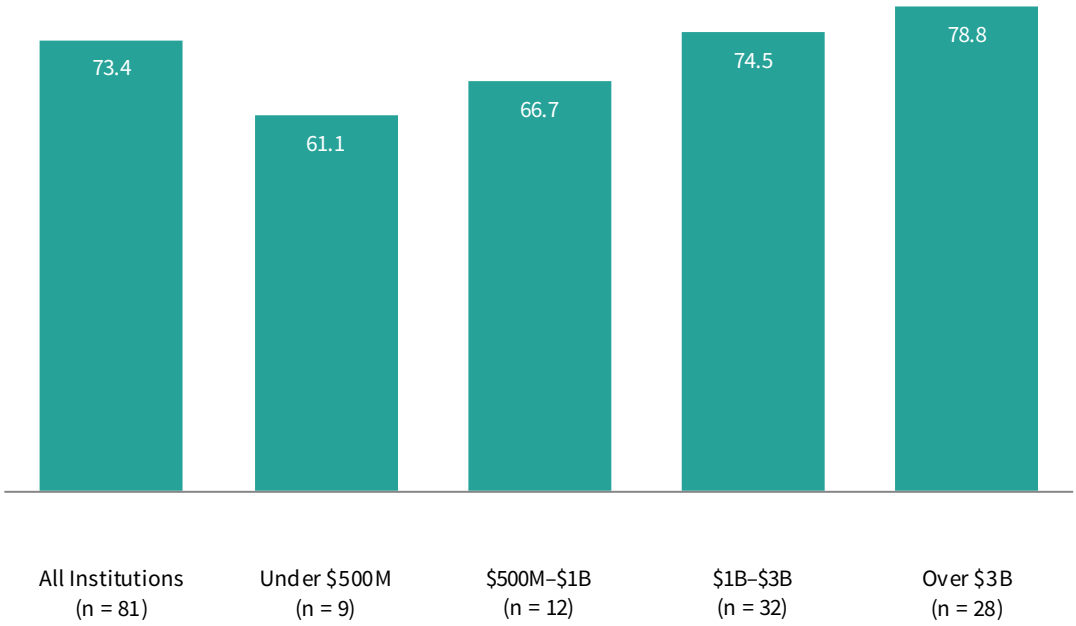
Source: College and university data as reported to Cambridge Associates LLC.
Note: Investment Committee is shorthand for governing body.

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

On average, respondents indicated that 73% of their committee members have investment experience. This percentage tends to be greater as asset size increases. Organizations with assets less than $500 million reported an average of 61% of committee membership having professional investment experience. At endowments greater $3 billion, the percentage of committee members that were investment professionals was 79% (Figure 66).

FIGURE 66 PERCENT OF INVESTMENT COMMITTEE MEMBERS WHO ARE INVESTMENT PROFESSIONALS

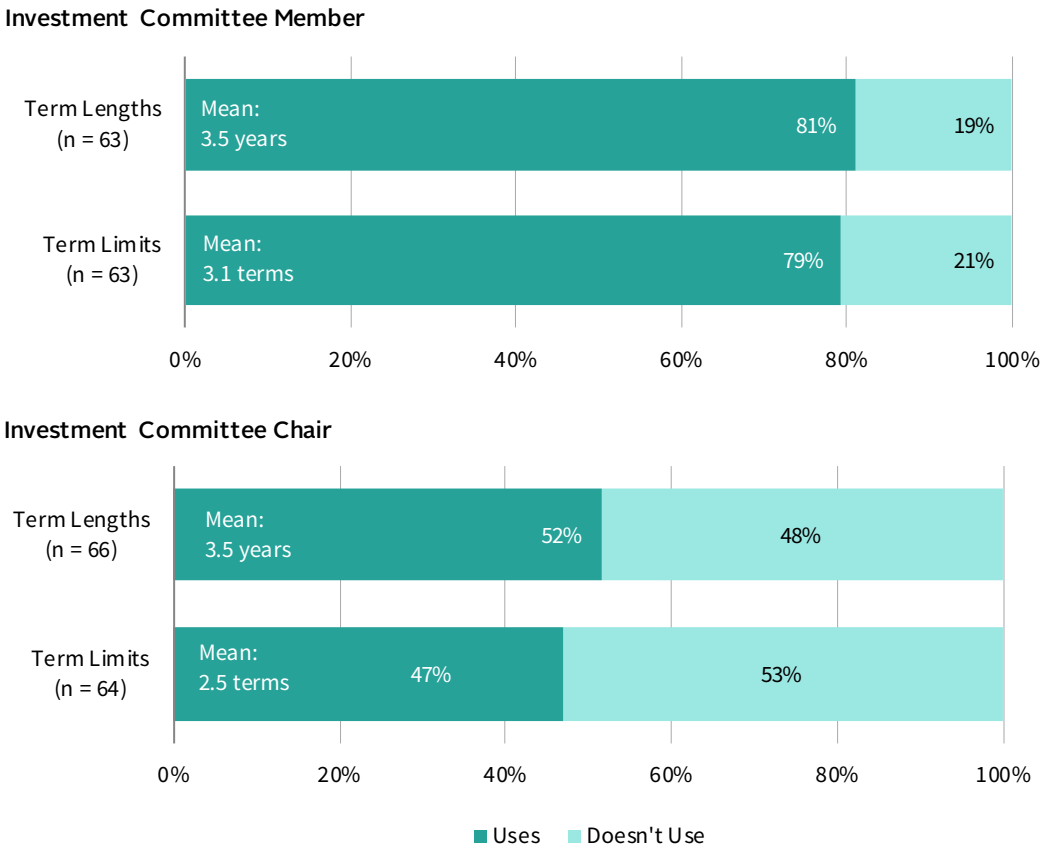
Fiscal Year 2021 • Percent of Institutions (%)



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

COMMITTEE TERM LENGTH AND LIMITS. Setting guidelines for terms can help manage member turnover and mitigate committee stagnation. The use of term lengths for investment committee members was cited by 81% of respondents, with the average term being 3.5 years (Figure 67). A similar percentage of respondents (79%) use term limits for committee members and the average limit is 3.1 terms. The prevalence of these guidelines for investment committee chairs was lower, with term lengths and limits being used by 52% and 47% of respondents, respectively. The lack of policies around term limits and lengths at some endowments could suggest that these institutions value the stability of a long-standing committee or chair and view turnover as disruptive to long-term investment policy.

FIGURE 67 INVESTMENT COMMITTEE TERM LENGTHS AND LIMITS
As of June 30, 2021



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

INVESTMENT COMMITTEE MEETINGS. Our survey responses show that the majority of endowments (76%) hold quarterly meetings. Few institutions hold meetings on a more or less frequent schedule, but ad hoc conference calls are a frequently cited occurrence. Regular attendance of investment committee members is critical to proper oversight. Participants indicated that average attendance was strong, at 87%.

REIMBURSEMENT AND CONFLICT OF INTEREST POLICY. Only 22% of respondents provide committee members with expense reimbursement, which generally includes travel-related and other out-of-pocket expenses.

Except for one respondent, all participants have a conflict of interest policy for investment committee members. These policies require disclosure (42%), recusal (14%), or both disclosure and recusal (38%). Policies may differ by asset class, with institutions requiring disclosure for long-only equity conflicts and recusal for private equity conflicts, for example. Most institutions (91%) also have a conflict of interest policy in place for investment staff. Fifty-three percent of policies require disclosure only, 9% require recusal, and 30% require disclosure and recusal. ■

Notes on the Data

The notation of n denotes the number of institutions included in each analysis.

Returns for periods greater than one-year are annualized.

The simple portfolio benchmark consisting of 70% MSCI ACWI Index / 30% Bloomberg Barclays Aggregate Bond Index is calculated assuming rebalancing occurs on the final day of each quarter.

The MSCI indexes contained in this report are net of dividend taxes for global ex US securities.

Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest.

PROFILE OF RESPONDENTS

This report includes data for 152 colleges and universities. Nineteen are public institutions, 26 are foundations affiliated with public institutions, and 107 are private institutions. All participants provided investment pool data as of June 30, 2021.

The 152 participants in this study reported long-term investment portfolio (LTIP) assets as of June 30, 2020, totaling $659 billion. The mean LTIP size was $4.3 billion and the median was $1.2 billion.

Four participants have an LTIP size below $100 million, while 85 have an asset size above $1 billion. The remaining 63 participants have an LTIP size between $100 million and $1 billion. The participants with LTIP sizes greater than $1 billion controlled 96% of the aggregate LTIP assets.

CALCULATION OF THE SHARPE RATIO

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

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

Where:

R_p is the arithmetic average of composite quarterly returns,

R_f is the arithmetic average of T-bill (risk-free) quarterly returns, and

S_p is the quarterly standard deviation of composite quarterly returns.

MODIFIED PUBLIC MARKET EQUIVALENT (MPME) INDEXES

Under Cambridge Associates' mPME methodology, the public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund and mPME NAV is a function of mPME cash flows. The mPME analysis evaluates what return would have been earned had the dollars invested in private investments been invested in the public market instead.

Appendix: Investment Portfolio Returns

FISCAL YEAR 2021 TOTAL RETURN PERCENTILES

Trailing 1-Yr as of June 30, 2021 • Percent (%) • By Percentile Ranking

	All C&Us	Under $200M	$200M–$500M	$500M–$1B	$1B–$3B	Over $3B
5th %ile	53.0	39.0	43.1	47.4	53.6	55.8
25th %ile	41.8	34.8	36.9	39.4	42.5	46.7
Median	36.6	32.6	33.9	36.1	37.0	41.1
75th %ile	33.2	29.2	32.3	33.1	33.4	37.2
95th %ile	28.4	26.7	28.5	27.4	31.1	32.4
Mean	38.0	32.5	35.1	36.2	38.2	42.6
n	*152*	*15*	*31*	*21*	*42*	*43*

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

EXAMPLE OF 1-YR ATTRIBUTION ANALYSIS: ALL C&U MEAN

As of June 30, 2021 • Percent (%) • n = 150

	Breakdown of Return from Asset Allocation			
Asset Class	Beginning Year Mean Asset Allocation	Asset Class Benchmark Return	Contribution to Asset Class Return	Index
US Equity	21.7	44.2	9.6	Russell 3000
Venture Capital	7.8	87.8	6.8	CA US Venture Capital
Non-Venture Private Equity	8.5	58.2	4.9	CA US Private Equity
Global ex US Equity-Developed Mkts	13.0	32.4	4.2	MSCI EAFE (N)
Global ex US Equity-Emerging Mkts	6.8	40.9	2.8	MSCI Emg Mkts (N)
Long/Short Hedge Funds	7.1	36.5	2.6	HFRI Equity Hedge
Absolute Return (ex Distressed)	9.5	16.8	1.6	HFRI FOF Diversified
Other Private Investments	1.6	66.0	1.0	CA US PE/VC
Private Oil & Gas / Natural Resources	2.9	26.8	0.7	CA Natural Resources
Distressed-Private Equity Structure	1.7	33.8	0.6	CA Distressed Securities
Private Real Estate	3.1	18.1	0.5	CA Real Estate
Distressed-Hedge Fund Structure	1.4	32.3	0.5	HFRI ED: Dist/Rest
Public Energy / Natural Resources	0.9	42.7	0.4	MSCI World Nat Res (N)
Other	1.0	26.6	0.3	70% Global Eq / 30% Bond
Public Real Estate	0.5	34.8	0.2	FTSE NAREIT Composite
Commodities	0.2	45.6	0.1	Bloomberg Commodity
High Yield Bonds	0.3	15.4	0.0	BBG High Yield
Inflation-Linked Bonds	0.4	6.5	0.0	BBG Barc US TIPS
Global ex US Bonds	0.2	3.1	0.0	FTSE Non-US$ WGBI
Cash & Equivalents	3.7	0.1	0.0	91-Day T-Bill
US Bonds	7.6	-0.3	0.0	BBG Agg Bond
Return from Asset Allocation (Sum of Contributions)			*36.9*	
+/- Return from Other Factors			*1.2*	
Mean Total Portfolio Return			**38.0**	

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

Note: 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.

DISPERSION OF PARTICIPANTS' 1-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 1-Yr as of June 30, 2021 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	113.1	93.9	155.1	42.3	43.1	40.2	46.9	56.5
25th %ile	87.6	73.0	110.9	32.8	33.3	30.6	24.4	34.2
Median	75.5	62.4	91.2	21.8	24.5	24.7	17.7	27.6
75th %ile	65.5	52.4	79.7	16.3	16.7	17.8	10.4	21.4
95th %ile	49.7	39.4	52.7	-1.7	7.3	7.2	-3.0	10.1
Mean	77.6	65.0	97.5	24.0	26.4	24.2	19.1	30.1
n	*115*	*112*	*108*	*61*	*68*	*99*	*110*	*109*
Median by Asset Size								
Less than $200M	80.1	66.3	99.9	20.1	18.4	17.7	8.6	27.2
n	*10*	*10*	*8*	*3*	*4*	*10*	*8*	*9*
$200M–$500M	69.3	63.4	90.2	21.1	25.6	23.3	19.9	24.9
n	*31*	*31*	*28*	*15*	*21*	*28*	*24*	*24*
$500M–$1B	72.4	66.0	85.7	20.3	31.4	28.3	20.0	31.2
n	*18*	*17*	*17*	*15*	*11*	*18*	*18*	*17*
$1B–$3B	72.5	62.1	91.1	21.8	23.5	24.9	20.8	27.0
n	*31*	*27*	*27*	*17*	*20*	*25*	*30*	*30*
More than $3B	84.9	59.4	101.6	28.6	18.9	26.4	13.8	32.7
n	*25*	*27*	*28*	*11*	*12*	*18*	*30*	*29*
Median by Total Performance Quartile								
Top Quartile	93.2	64.5	119.3	27.0	25.3	25.5	18.8	31.1
n	*28*	*30*	*30*	*14*	*14*	*22*	*28*	*27*
2nd Quartile	75.6	66.6	87.2	21.8	25.4	25.0	18.2	26.7
n	*30*	*30*	*31*	*21*	*20*	*26*	*31*	*31*
3rd Quartile	67.6	62.1	89.5	22.5	22.5	24.3	17.1	26.5
n	*30*	*25*	*25*	*18*	*19*	*26*	*29*	*26*
Bottom Quartile	62.7	54.7	77.4	14.6	23.9	18.7	13.4	23.0
n	*27*	*27*	*22*	*8*	*15*	*25*	*22*	*25*

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

Notes: Institutions are assigned to performance quartiles based on their fiscal year 2021 total portfolio return. The Top Performers subset is based on institutions that were in the top quartile for total portfolio performance for the fiscal year 2021 period. Private investment return statistics are reported as horizon IRRs.

PARTICIPANTS' 1-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 1-Yr as of June 30, 2021 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commodities and Natural Resources	Public Real Estate
All C&Us									
5th %ile	51.2	51.0	54.8	47.7	53.4	7.8	33.4	76.7	39.8
25th %ile	43.6	46.2	46.3	40.4	47.3	1.9	25.1	52.0	34.4
Median	41.8	41.3	43.9	35.7	43.3	0.6	20.6	44.3	33.0
75th %ile	39.8	35.3	40.5	33.1	38.8	-1.0	16.4	28.3	30.7
95th %ile	36.5	26.5	34.5	28.9	29.9	-3.4	12.7	-8.0	4.9
Mean	42.2	40.3	44.2	37.1	43.1	1.0	21.3	45.5	29.9
n	*124*	*75*	*119*	*112*	*115*	*119*	*125*	*52*	*33*
Median by Asset Size									
Less than $200M	41.5	45.8	43.3	34.0	40.4	0.8	24.2	45.0	34.4
n	*15*	*9*	*15*	*14*	*14*	*15*	*14*	*7*	*4*
$200M–$500M	41.8	39.2	44.0	38.4	42.7	0.4	20.1	44.8	34.4
n	*31*	*24*	*31*	*29*	*30*	*30*	*29*	*13*	*4*
$500M–$1B	42.0	40.7	42.8	35.7	42.7	1.2	19.7	45.7	33.0
n	*18*	*9*	*17*	*18*	*18*	*19*	*19*	*9*	*9*
$1B–$3B	41.0	41.1	43.2	35.6	41.8	0.2	20.3	38.6	33.0
n	*32*	*18*	*30*	*26*	*27*	*29*	*34*	*9*	*7*
More than $3B	43.7	43.7	44.5	36.2	46.4	0.6	21.2	28.9	32.5
n	*28*	*15*	*26*	*25*	*26*	*26*	*29*	*14*	*9*
Median by Total Performance Quartile									
Top Quartile	42.9	43.0	46.4	35.1	43.5	0.4	23.0	38.6	32.1
n	*28*	*18*	*30*	*25*	*27*	*25*	*31*	*15*	*10*
2nd Quartile	41.8	42.5	44.3	35.7	41.8	0.8	20.4	38.5	32.7
n	*32*	*21*	*29*	*29*	*29*	*30*	*31*	*10*	*11*
3rd Quartile	41.2	34.0	42.5	36.8	45.6	0.4	21.0	44.4	34.4
n	*31*	*18*	*28*	*27*	*28*	*30*	*30*	*15*	*7*
Bottom Quartile	41.3	43.0	41.2	34.1	42.7	0.7	17.0	44.8	34.4
n	*33*	*18*	*32*	*31*	*31*	*34*	*33*	*12*	*5*

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

Notes: Institutions are assigned to performance quartiles based on their fiscal year 2021 total portfolio return. The Top Performers subset is based on institutions that were in the top quartile for total portfolio performance for the fiscal year 2021 period.

TOTAL RETURNS SUMMARY: TRAILING 3-, 5-, 10-, AND 20-YR

Years Ended June 30, 2021 • Percent (%) • By Percentile Ranking

	Nominal AACRs			
	3-Yr	5-Yr	10-Yr	20-Yr
All C&Us				
5th %ile	20.1	17.0	12.4	10.5
25th %ile	15.8	14.3	10.1	8.6
Median	13.6	12.7	8.9	7.6
75th %ile	11.9	11.4	8.1	6.8
95th %ile	10.5	10.3	7.4	6.2
Mean	14.2	13.0	9.2	7.8
n	*151*	*151*	*147*	*127*
Under $200M				
5th Percentile	14.1	12.1	10.0	7.6
25th Percentile	12.3	11.9	8.5	6.8
Median	11.9	11.3	8.3	6.6
75th Percentile	10.8	10.6	7.6	6.4
95th Percentile	9.8	10.0	6.7	6.0
Mean	11.7	11.2	8.2	6.7
n	*15*	*15*	*13*	*9*
$200M–$500M				
5th Percentile	16.6	15.1	9.3	7.7
25th Percentile	14.0	12.6	8.5	7.4
Median	12.9	12.1	8.0	7.1
75th Percentile	11.9	11.2	7.6	6.4
95th Percentile	10.6	10.4	7.1	5.7
Mean	13.2	12.2	8.1	7.0
n	*31*	*31*	*30*	*22*
$500M–$1B				
5th Percentile	16.0	13.5	9.8	8.6
25th Percentile	13.8	12.6	8.6	7.5
Median	12.0	11.7	8.2	6.9
75th Percentile	11.3	10.9	7.9	6.5
95th Percentile	10.6	10.4	7.6	6.3
Mean	12.6	11.8	8.4	7.1
n	*21*	*21*	*21*	*19*
$1B–$3B				
5th Percentile	20.1	16.7	11.7	9.3
25th Percentile	15.8	14.4	10.4	8.2
Median	13.9	13.2	9.2	7.7
75th Percentile	12.3	11.6	8.4	7.0
95th Percentile	11.0	10.0	7.9	6.6
Mean	14.5	13.3	9.5	7.8
n	*41*	*41*	*40*	*34*
Over $3B				
5th Percentile	22.2	18.8	12.8	11.0
25th Percentile	18.6	16.0	11.6	9.8
Median	15.9	14.4	10.1	8.9
75th Percentile	14.4	13.0	9.4	8.0
95th Percentile	12.0	12.2	8.6	7.1
Mean	16.4	14.6	10.5	8.9
n	*43*	*43*	*43*	*43*

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

DISPERSION OF PARTICIPANTS' 3-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 3-Yr as of June 30, 2021 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	47.0	47.9	54.1	24.3	21.1	12.2	17.2	9.0
25th %ile	38.6	32.1	46.8	12.6	15.4	4.3	10.8	0.9
Median	32.6	27.3	40.1	8.1	11.6	1.4	8.1	-2.8
75th %ile	27.2	22.4	34.2	4.2	6.2	-0.9	4.5	-6.1
95th %ile	18.5	13.1	20.2	-6.9	-2.0	-9.4	-8.9	-12.5
Mean	32.9	27.9	39.6	8.6	11.1	1.8	7.1	-2.2
n	*113*	*112*	*106*	*53*	*59*	*98*	*106*	*107*
Median by Asset Size								
Less than $200M	30.3	28.3	44.3	24.9	11.6	0.4	6.5	-1.2
n	*10*	*10*	*7*	*2*	*3*	*10*	*8*	*8*
$200M–$500M	31.8	27.4	38.3	7.4	13.6	-0.2	7.0	-5.2
n	*31*	*31*	*27*	*9*	*17*	*27*	*22*	*24*
$500M–$1B	32.1	29.4	36.6	7.6	12.8	2.7	10.5	-2.1
n	*18*	*17*	*17*	*15*	*11*	*18*	*18*	*17*
$1B–$3B	32.4	25.6	41.3	5.1	7.6	1.2	8.9	-3.5
n	*30*	*27*	*27*	*16*	*19*	*25*	*29*	*29*
More than $3B	37.2	24.6	42.8	11.8	7.2	2.7	7.6	-0.2
n	*24*	*27*	*28*	*11*	*9*	*18*	*29*	*29*

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

Note: Private investment return statistics are reported as horizon IRRs.

DISPERSION OF PARTICIPANTS' 5-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 5-Yr as of June 30, 2021 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	35.1	33.9	42.6	20.9	46.5	12.5	15.9	10.7
25th %ile	30.3	26.8	34.7	12.6	16.3	7.5	11.5	5.4
Median	26.3	23.1	29.6	8.2	11.9	5.2	8.9	2.4
75th %ile	22.2	19.5	25.1	6.7	7.7	3.3	5.5	0.1
95th %ile	14.2	12.6	13.5	-3.0	5.1	-2.8	-3.0	-4.9
Mean	25.9	23.3	29.3	9.1	19.3	5.1	7.7	2.8
n	*112*	*110*	*106*	*46*	*50*	*96*	*100*	*105*
Median by Asset Size								
Less than $200M	22.7	22.7	29.8	--	13.5	4.7	7.9	3.4
n	*10*	*10*	*7*	--	*1*	*10*	*8*	*8*
$200M–$500M	26.1	24.2	28.0	7.9	15.0	3.3	6.4	1.6
n	*30*	*29*	*27*	*5*	*12*	*26*	*17*	*22*
$500M–$1B	24.9	24.3	27.5	8.6	12.2	5.9	10.7	1.3
n	*18*	*17*	*17*	*14*	*11*	*17*	*17*	*17*
$1B–$3B	26.2	22.6	31.0	6.3	13.4	4.5	9.7	2.1
n	*30*	*27*	*27*	*16*	*17*	*25*	*29*	*29*
More than $3B	28.8	22.4	31.7	11.9	7.4	5.8	8.3	4.6
n	*24*	*27*	*28*	*11*	*9*	*18*	*29*	*29*

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

Note: Private investment return statistics are reported as horizon IRRs.

DISPERSION OF PARTICIPANTS' 10-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 10-Yr as of June 30, 2021 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	24.4	23.5	32.1	17.2	38.8	13.1	16.0	6.6
25th %ile	21.7	19.6	25.6	11.0	14.4	8.0	12.6	2.8
Median	18.4	16.0	22.3	9.1	9.6	5.2	10.5	1.4
75th %ile	15.7	14.2	17.7	6.4	7.9	3.1	8.3	-0.9
95th %ile	11.1	10.3	9.3	2.2	4.6	-0.1	1.6	-5.0
Mean	18.5	16.6	21.5	9.1	14.3	6.0	10.8	1.1
n	*104*	*104*	*95*	*32*	*33*	*88*	*90*	*90*
Median by Asset Size								
Less than $200M	13.9	15.0	13.7	--	3.7	5.5	9.9	1.5
n	*7*	*7*	*5*	--	*1*	*8*	*5*	*4*
$200M–$500M	17.0	15.5	18.9	8.2	9.7	3.5	11.1	0.2
n	*28*	*28*	*20*	*2*	*4*	*22*	*14*	*17*
$500M–$1B	18.7	17.5	22.3	9.2	9.6	5.5	10.7	0.2
n	*18*	*17*	*17*	*9*	*8*	*17*	*16*	*16*
$1B–$3B	18.2	15.9	22.9	8.0	9.9	5.6	11.5	1.5
n	*30*	*27*	*27*	*12*	*13*	*24*	*28*	*26*
More than $3B	20.7	16.0	23.8	9.6	9.6	5.7	9.4	2.0
n	*21*	*25*	*26*	*9*	*7*	*17*	*27*	*27*
Median by Total Performance Quartile								
Top Quartile	22.9	19.1	27.6	10.9	8.6	5.9	9.5	1.4
n	*21*	*24*	*24*	*7*	*8*	*18*	*23*	*21*
2nd Quartile	18.4	15.7	20.5	9.0	10.1	4.9	10.7	1.7
n	*28*	*27*	*27*	*15*	*10*	*23*	*26*	*25*
3rd Quartile	18.3	16.6	19.7	6.5	11.1	5.9	11.1	1.6
n	*25*	*23*	*20*	*6*	*10*	*23*	*23*	*25*
Bottom Quartile	16.4	15.1	18.2	5.7	9.5	4.1	9.5	1.0
n	*28*	*28*	*23*	*3*	*5*	*22*	*17*	*18*

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

Notes: Institutions are assigned to performance quartiles based on their trailing 10-year total portfolio return. The Top Performers subset is based on institutions that were in the top quartile for total portfolio performance for the trailing 10-year period. Private investment return statistics are reported as horizon IRRs.

PARTICIPANTS' 3-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 3-Yr as of June 30, 2021 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commodities and Natural Resources	Public Real Estate
All C&Us									
5th %ile	19.4	24.3	23.1	13.9	19.7	7.4	13.5	10.9	12.2
25th %ile	15.8	18.7	20.2	10.8	13.9	5.6	10.0	4.1	11.4
Median	14.4	14.4	18.5	8.7	10.5	4.8	7.8	-0.2	7.8
75th %ile	13.4	12.2	16.9	7.6	9.3	4.1	6.0	-3.6	7.4
95th %ile	12.0	8.7	14.8	5.5	6.5	2.4	3.5	-17.7	5.5
Mean	14.8	15.6	18.8	9.2	11.7	4.8	8.0	0.3	8.0
n	*122*	*64*	*118*	*111*	*113*	*116*	*123*	*51*	*30*
Median by Asset Size									
Less than $200M	13.7	14.8	17.4	8.2	10.9	5.2	7.7	3.0	11.9
n	*14*	*6*	*14*	*13*	*13*	*14*	*13*	*7*	*4*
$200M–$500M	14.6	12.7	18.6	9.3	10.1	5.0	8.1	0.8	11.8
n	*31*	*18*	*31*	*29*	*30*	*30*	*29*	*13*	*2*
$500M–$1B	14.2	13.3	18.6	8.3	9.4	4.9	6.6	-0.2	7.4
n	*18*	*8*	*17*	*18*	*18*	*18*	*19*	*9*	*9*
$1B–$3B	14.4	14.7	18.7	8.5	11.7	4.3	7.4	-1.2	8.6
n	*32*	*18*	*30*	*26*	*26*	*28*	*34*	*8*	*7*
More than $3B	15.3	18.7	18.4	8.6	13.7	5.2	8.6	-2.0	7.6
n	*27*	*14*	*26*	*25*	*26*	*26*	*28*	*14*	*8*

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

PARTICIPANTS' 5-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 5-Yr as of June 30, 2021 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commodities and Natural Resources	Public Real Estate
All C&Us									
5th %ile	19.3	24.8	21.3	14.7	18.7	5.3	12.0	6.9	13.7
25th %ile	16.0	17.3	19.1	12.5	13.7	3.9	8.9	4.2	7.9
Median	14.7	15.1	17.8	11.1	12.0	3.0	7.7	0.7	6.5
75th %ile	14.1	13.2	16.9	10.2	10.7	2.4	6.5	-1.5	5.8
95th %ile	12.7	10.5	14.9	9.2	8.4	1.3	4.1	-8.4	4.6
Mean	15.2	16.1	17.9	11.5	12.5	3.2	7.8	0.4	7.5
n	*121*	*53*	*117*	*109*	*110*	*114*	*122*	*47*	*21*
Median by Asset Size									
Less than $200M	14.3	14.2	16.8	10.8	12.2	3.5	6.7	0.1	5.9
n	*14*	*3*	*14*	*13*	*12*	*14*	*13*	*5*	*1*
$200M–$500M	15.1	13.2	17.8	11.4	11.5	2.9	7.4	0.7	6.5
n	*30*	*14*	*30*	*28*	*29*	*29*	*28*	*13*	*1*
$500M–$1B	14.7	16.2	17.9	11.1	11.3	3.2	6.6	0.6	5.9
n	*18*	*7*	*17*	*18*	*18*	*18*	*19*	*9*	*8*
$1B–$3B	14.9	15.4	17.8	10.8	12.2	2.8	7.9	-1.4	10.4
n	*32*	*15*	*30*	*25*	*25*	*27*	*34*	*8*	*4*
More than $3B	15.8	17.5	17.9	11.1	13.3	3.4	8.3	2.3	7.3
n	*27*	*14*	*26*	*25*	*26*	*26*	*28*	*12*	*7*

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

PARTICIPANTS' 10-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 10-Yr as of June 30, 2021 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commodities and Natural Resources	Public Real Estate
All C&Us									
5th %ile	13.0	15.6	17.1	10.1	10.4	5.1	8.9	3.6	29.5
25th %ile	11.1	13.6	15.5	7.9	5.8	3.9	6.8	0.0	9.4
Median	10.4	12.2	14.5	7.3	4.4	3.2	5.6	-2.8	8.3
75th %ile	9.8	10.8	13.6	6.8	3.5	2.7	4.8	-4.1	7.3
95th %ile	8.9	7.9	11.8	5.5	2.2	1.8	3.9	-7.6	3.0
Mean	10.6	12.0	14.4	7.5	5.0	3.4	6.6	-0.9	11.6
n	*112*	*35*	*107*	*99*	*98*	*103*	*111*	*36*	*16*
Median by Asset Size									
Less than $200M	10.1	13.1	13.8	6.9	4.0	3.4	4.8	-2.7	6.6
n	*12*	*2*	*12*	*10*	*7*	*11*	*9*	*4*	*1*
$200M–$500M	10.5	10.9	14.8	7.1	4.0	3.1	5.2	-3.6	9.1
n	*29*	*10*	*28*	*26*	*29*	*28*	*27*	*11*	*1*
$500M–$1B	10.3	12.2	14.9	7.4	3.9	3.2	4.8	-2.4	7.8
n	*18*	*3*	*17*	*18*	*17*	*17*	*17*	*8*	*6*
$1B–$3B	10.3	11.9	14.9	7.3	4.9	3.1	5.7	-3.1	11.0
n	*29*	*12*	*27*	*23*	*22*	*25*	*33*	*5*	*4*
More than $3B	10.7	13.1	14.4	7.7	5.9	3.9	6.7	-2.3	8.4
n	*24*	*8*	*23*	*22*	*23*	*22*	*25*	*8*	*4*
Median by Total Performance Quartile									
Top Quartile	11.1	12.8	14.9	7.5	5.8	3.4	6.7	-0.6	12.5
n	*20*	*8*	*23*	*19*	*21*	*18*	*23*	*6*	*1*
2nd Quartile	10.7	11.3	14.5	7.3	5.5	3.2	6.0	-2.6	9.1
n	*29*	*12*	*25*	*27*	*25*	*27*	*28*	*10*	*5*
3rd Quartile	10.3	12.9	14.9	7.1	3.8	3.2	4.9	-2.7	7.6
n	*31*	*7*	*28*	*27*	*25*	*29*	*32*	*10*	*4*
Bottom Quartile	9.9	11.0	13.8	7.1	3.9	3.0	4.9	-3.7	8.0
n	*30*	*7*	*28*	*25*	*26*	*29*	*28*	*10*	*5*

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

Notes: The Top Performers subset is based on institutions that were in the top quartile for total portfolio performance for the trailing 10-year period. Institutions are assigned to performance quartiles based on their trailing 10-year return.

REAL RETURNS AFTER SPENDING: TRAILING 3-, 5-, 10-, AND 20-Yr

Years Ended June 30, 2021 • Percent (%) • By Percentile Ranking

	3-Yr	5-Yr	10-Yr	20-Yr
All C&Us				
5th %ile	13.1	10.4	5.6	3.9
25th %ile	8.8	7.4	4.2	2.1
Median	6.8	5.7	2.9	1.2
75th %ile	5.3	4.7	1.8	0.4
95th %ile	2.7	2.9	0.7	-0.7
Mean	7.2	6.1	3.1	1.3
n	*94*	*86*	*76*	*69*

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

Appendix: Portfolio Asset Allocation

SUMMARY ASSET ALLOCATION DISTRIBUTION

As of June 30, 2021 • Percent (%) • n = 152 • By Percentile Ranking

	Public Equity	PE/VC	Hedge Funds	Real Assets & ILBs	Fixed Income	Private Credit	Cash	Other
5th %ile	66.7	41.7	28.9	15.6	14.7	4.9	7.9	2.2
25th %ile	50.3	31.1	19.5	9.4	10.2	2.9	4.7	0.0
Median	42.1	23.2	15.1	6.9	6.7	1.3	2.9	0.0
75th %ile	30.1	15.3	11.3	4.4	3.5	0.1	1.3	0.0
95th %ile	21.0	3.3	3.8	1.4	0.0	0.0	0.0	0.0
Mean	41.2	22.8	15.6	7.4	7.1	1.8	3.2	0.9

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

MEAN ASSET ALLOCATION BY ASSET SIZE

As of June 30, 2021 • Percent (%)

		Asset Size				
	All C&Us	Less than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More than $3B
	(n = 152)	*(n = 15)*	*(n = 31)*	*(n = 21)*	*(n = 42)*	*(n = 43)*
Public Equity	**41.2**	**57.3**	**50.1**	**44.5**	**37.8**	**31.0**
Global	7.2	9.7	8.9	4.5	9.7	3.9
US	18.4	26.0	24.7	22.7	15.1	12.3
Global ex US Developed	9.8	15.7	11.1	12.0	7.9	7.6
Emerging Markets	5.9	5.8	5.3	5.3	5.2	7.2
PE/VC	**22.8**	**7.9**	**15.1**	**20.3**	**25.5**	**32.0**
Non-Venture Private Equity	9.9	1.6	5.5	9.5	12.6	13.6
Venture Capital	10.9	3.8	6.6	8.9	12.0	16.4
Other Private Investments	1.9	2.5	3.0	1.9	0.9	1.9
Hedge Funds	**15.6**	**12.7**	**13.4**	**12.2**	**18.2**	**17.5**
Long/Short	6.6	4.4	5.8	3.2	8.1	8.1
Absolute Return	7.8	7.6	6.9	7.5	8.3	8.3
Distressed	1.2	0.6	0.7	1.5	1.7	1.0
Private Credit	**1.8**	**0.7**	**1.3**	**2.6**	**2.2**	**1.7**
Distressed - Control Oriented	0.9	0.3	0.5	1.5	1.0	0.9
Private Credit ex Distressed	0.9	0.3	0.8	1.1	1.2	0.7
Fixed Income	**7.1**	**12.6**	**9.8**	**8.4**	**5.3**	**4.3**
Global	0.1	0.0	0.0	0.2	0.0	0.1
US	6.6	12.6	9.7	7.9	4.8	3.5
Global ex US	0.1	0.0	0.1	0.0	0.3	0.1
High-Yield Bonds	0.2	0.0	0.0	0.3	0.2	0.5
Real Assets & ILBs	**7.4**	**4.4**	**4.5**	**9.2**	**6.9**	**10.1**
Private Real Estate	2.8	0.8	1.0	3.9	2.7	4.3
Public Real Estate	0.5	0.5	0.3	1.1	0.4	0.4
Commodities	0.3	0.0	0.2	0.1	0.2	0.6
Inflation Linked-Bonds	0.4	0.6	0.7	0.5	0.2	0.3
Private O&G/Nat Resources	2.7	1.1	1.4	2.4	2.8	4.1
Public Energy/Nat Resources	0.7	1.4	0.8	1.2	0.6	0.4
Cash & Equivalents	**3.2**	**2.2**	**3.4**	**2.6**	**3.8**	**3.3**
Other Assets	**0.9**	**2.3**	**2.4**	**0.1**	**0.4**	**0.2**

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

HISTORICAL MEAN ASSET ALLOCATION TRENDS

Years Ended June 30, 2021 • Percent (%)

	Constant Universe (n = 82)							
	Public Equity	PE/VC	Hedge Funds	Private Credit	Fixed Income	Real Assets & ILBs	Cash	Other
2001	50.1	8.0	11.5	--	21.2	5.4	3.3	0.6
2002	47.7	7.0	14.4	--	21.4	6.3	2.7	0.6
2003	47.1	6.8	17.1	--	18.2	7.6	2.6	0.7
2004	47.4	7.1	18.9	--	14.6	8.0	3.0	1.1
2005	45.6	7.6	20.6	--	13.4	9.5	2.9	0.4
2006	45.2	8.4	21.4	--	11.6	10.8	2.4	0.3
2007	45.1	9.4	22.0	--	9.9	11.4	2.0	0.1
2008	37.8	11.7	23.8	--	10.6	14.2	1.6	0.3
2009	30.8	13.2	24.7	--	12.8	13.3	4.6	0.6
2010	31.2	14.2	25.9	--	11.8	13.7	2.7	0.4
2011	33.7	14.8	24.2	--	10.0	14.4	2.5	0.6
2012	31.9	15.6	24.5	--	9.9	14.9	2.8	0.3
2013	35.4	14.1	22.3	1.9	8.8	14.0	3.0	0.4
2014	37.6	14.0	21.6	1.7	7.8	13.3	3.5	0.3
2015	37.8	14.4	22.7	1.7	7.7	11.7	3.8	0.2
2016	37.3	14.7	22.2	1.7	7.9	12.5	3.5	0.2
2017	39.5	14.5	20.7	1.5	7.2	11.8	3.8	0.9
2018	38.6	15.9	20.5	1.5	7.2	11.9	3.2	1.2
2019	37.6	18.3	19.8	1.6	7.1	10.9	3.2	1.5
2020	36.6	20.8	19.5	1.7	6.5	9.4	3.7	1.9
2021	36.1	26.3	16.6	1.9	5.7	8.6	3.3	1.5

Source: College and university data as reported to Cambridge Associates LLC.
Note: Analysis is based on a constant universe that includes 82 institutions that provided asset allocation data for each year from 2001 to 2021.

UNCALLED CAPITAL COMMITTED TO PRIVATE INVESTMENT FUNDS

As of June 30, 2021 • Percent (%) • By Percentile Ranking

Uncalled Capital Commitments as a Percentage of the Total LTIP

	Less than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More than $3B
5th %ile	13.3	18.8	19.1	21.4	25.3
25th %ile	7.7	11.6	15.2	15.6	15.7
Median	6.6	9.5	12.3	13.7	13.7
75th %ile	2.3	5.0	11.2	10.2	12.1
95th %ile	0.8	3.7	5.0	7.6	9.2
Mean	6.1	10.0	12.6	13.4	15.0
n	*12*	*29*	*18*	*40*	*34*

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

	Less than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More than $3B
5th %ile	21.7	29.6	31.9	49.7	74.8
25th %ile	12.0	19.6	28.5	34.7	42.4
Median	8.8	13.1	23.3	28.0	33.7
75th %ile	2.7	9.4	18.7	21.8	25.6
95th %ile	0.9	4.9	6.9	14.7	18.7
Mean	9.4	15.2	22.5	28.9	38.0
n	*12*	*29*	*18*	*40*	*34*

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.

Appendix: Investment Manager Structures

NUMBER OF EXTERNAL MANAGERS AND INVESTMENT VEHICLES

As of June 30, 2021 • Percent (%) • By Percentile Ranking

Number of External Managers

	Under $200M	$200M–$500M	$500M–$1B	$1B–$3B	Over $3B
5th %ile	50	67	90	123	266
25th %ile	41	58	74	98	190
Median	28	43	67	85	138
75th %ile	18	32	54	67	111
95th %ile	11	22	48	58	67
Mean	30	44	67	85	153
n	*15*	*31*	*20*	*40*	*30*

Number of Investment Vehicles

	Under $200M	$200M–$500M	$500M–$1B	$1B–$3B	Over $3B
5th %ile	63	103	143	230	553
25th %ile	49	75	126	198	366
Median	42	65	101	156	286
75th %ile	20	46	78	124	229
95th %ile	14	34	66	95	185
Mean	37	64	104	163	320
n	*15*	*31*	*20*	*38*	*28*

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

DISPERSION IN NUMBER OF MANAGERS FOR SELECTED ASSET CLASSES

As of June 30, 2021 • By Percentile Ranking

	Global Equity	US Equity	DM ex US Equity	EM Equity	US Bonds	Long/Short Hedge Funds	Ab Return Hedge Funds	Private Equity	Venture Capital
5th %ile	7	9	7	8	4	14	14	48	36
25th %ile	5	6	5	4	3	7	9	25	18
Median	3	4	3	3	2	4	6	16	9
75th %ile	2	3	2	2	1	2	4	9	5
95th %ile	1	2	1	1	1	1	2	3	1
Mean	4	5	4	4	2	6	7	19	14
n	*95*	*135*	*128*	*133*	*117*	*123*	*130*	*129*	*129*

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

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

Appendix: Institutional Support

ENDOWMENT DEPENDENCE

Fiscal Year 2021 • Percent (%) • By Percentile Ranking

	Private Institutions	Public Institutions
5th %ile	62.3	7.3
25th %ile	32.8	6.1
Median	20.7	3.1
75th %ile	9.2	1.6
95th %ile	2.5	0.4
Mean	22.1	3.5
n	*61*	*16*

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

ENDOWMENT TO DEBT

As of June 30, 2021 • n = 100 • By Percentile Ranking

	Under $2B	$2B–$5B	Over $5B
5th %ile	9.8	12.5	16.4
25th %ile	5.5	8.0	7.6
Median	4.0	3.7	4.9
75th %ile	2.2	2.2	3.9
95th %ile	0.9	1.6	1.3
Mean	4.6	5.2	6.0
n	*55*	*20*	*25*

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

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