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INVESTING FOR HIGHER EDUCATION: Endowment Allocations, Returns and the Roles of Expertise and Networks

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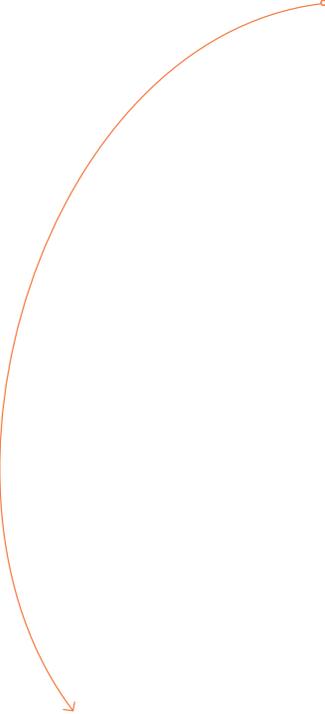
On behalf of their schools, college and university endowments in the U.S. collectively manage over half a trillion dollars and annually spend 4 to 5 percent of this wealth on, among other things, scholarships for students, support for faculty, and infrastructure for teaching and research. Endowments' investment performance is thus vital for the future of what schools strive to accomplish.

This briefing summarizes our research findings on how endowments have tackled the challenge of investing.¹ We explore two broad questions. First, what have been endowment investment patterns and returns? Second, does having board members with investment expertise and large professional networks affect endowment investing?

¹ "How do Financial Expertise and Networks Affect Investing? Evidence from the Governance of University Endowments" (2018) which provides the first study of whether the investment expertise and networks resident in university governance affect endowments' allocations to assets and resulting returns. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3187280.

In addition to the crucial importance of endowments for their schools, they offer an interesting laboratory for research. Rather than rely on public securities such as stocks and bonds, many (and especially large) endowments have substantial allocations to “alternative” assets, such as hedge funds, private equity, or venture capital. One explanation often given for the shift to alternatives is that endowments’ long investment and planning horizons make them well situated to earn higher returns obtainable from illiquid, private assets (e.g., by capturing a premium for bearing illiquidity). Another contributing factor cited is heightened opportunity for active management to identify and access high performing managers, since markets for many alternative assets are less efficient than public stock and bond markets due to frictions in trading and obtaining information. Given their mission and profile, endowments may be well positioned to invest with top performing managers in private assets based on expertise, links to alumni, long time horizons and few constraints on investment choices.

Potential benefits of alternative investments undergird the “endowment model” (often called the Yale model due to its development there by David Swensen) which has been adapted by many large university endowments. Despite these possible benefits, active management and investing in alternative assets comes with frictions and costs. An endowment may need considerable expertise to make successful investments in these areas.



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UNIVERSITY ENDOWMENTS AND GOVERNANCE

Endowments typically have a long term (infinite) investment horizon, limited restrictions on asset choice, and favorable tax status. Schools have adopted different plans for governing endowments but most share some common features. The typical governance structure includes a Board of Trustees that specifies spending policies, broader fund objectives, and delegates responsibilities. Responsibilities are often given to an investment committee, often a subset of the larger trustee board, which sets investment policy and risk limits. In turn, the investment committee often further delegates investment and operational power to a management staff. For larger endowments, the investment committee may delegate substantial discretion to a full-time staff that includes a Chief Investment Officer (CIO) and a range of investment professionals. In small endowments, there may be few or no professional staff with investment expertise, and the investment committee itself remains closely involved with details of the investment process, often working with a consultant. Some universities set up the endowment as a separate management company with its own separate board. Some have blended models that outsource staff responsibilities to another firm which has a CIO and professional staff. Endowments typically create an Investment Policy Statement codifying key features of endowment policy.

Our data emphasize the large role endowments play in university life. Over our sample period, the average endowment spends 4.45% of assets annually and funds 9.91% of the school's budget. The figures also show striking differences in size across endowments. While the mean endowment size is \$515 million, three fourths of endowments have assets less than \$305 million. These size differences are also related to how money is invested. The "average" endowment allocation to Domestic Equity is just over one-third and about one-fourth is alternative investments. If the figures are weighted by dollars, only about one-fifth of total endowment dollars are in Domestic Equity and almost half are in alternatives. This reflects the role of big endowments which have large allocations to alternatives. ■

ENDOWMENT INVESTMENT PATTERNS AND RETURNS

OUR RESEARCH UNCOVERS KEY FEATURES of the endowment landscape: large differences among schools in assets under management, in investment patterns and in returns.

HIGH ALLOCATIONS TO ALTERNATIVE ASSETS, ESPECIALLY FOR LARGE ENDOWMENTS

While a few endowments have assets above \$10 billion, most are much smaller. The simple average across our sample is just over \$500 million, and the median figure is around \$100 million. Figure 1 displays asset allocations to alternative assets accompanying adoption of the endowment model by many large universities. Larger endowments tilt their allocation toward alternative strategies, investing about half of their assets in alternatives, while smaller endowments allocate only about one fifth. Smaller endowments have increased allocations to alternatives steadily over time but still have much smaller allocations than larger funds.

STRONG INVESTMENT RESULTS

Another feature of endowment investing is differences in return patterns across endowments, not surprising given their different allocation patterns. Figure 2 plots average returns for three size groups of endowments. As comparison, it also shows the return from avoiding alternatives altogether with a passive strategy of U.S. stocks (50% in S&P500), fixed income (30% in JP Morgan Bond Index) and international equity (20% in MSCI ACWI). Figure 2 shows that all size groupings of endowments had higher returns than this passive strategy. Moreover, the difference in returns between large and small endowments is striking: large funds outperform their smaller peers by over 2 percent annually and have an even larger spread over the passive strategy.

Moreover, our research shows that this effect is not simply due to taking on higher levels of risk. We find that endowment portfolios have also had higher returns per unit risk than a passive strategy of not using alternatives. Our analysis also reveals that endowments, on average, outperform benchmarks based on their asset allocation weights, suggesting that they generate extra returns from active management. Overall, our results suggest that, on average, endowments (especially large endowments) have earned higher total returns due to investing in alternative assets. Part of the return increase is due to harvesting higher returns in an asset class (e.g., a liquidity premium in alternative assets) and part is due to active management within an asset class.

Figure 1: ALLOCATIONS TO ALTERNATIVES BY ENDOWMENT SIZE

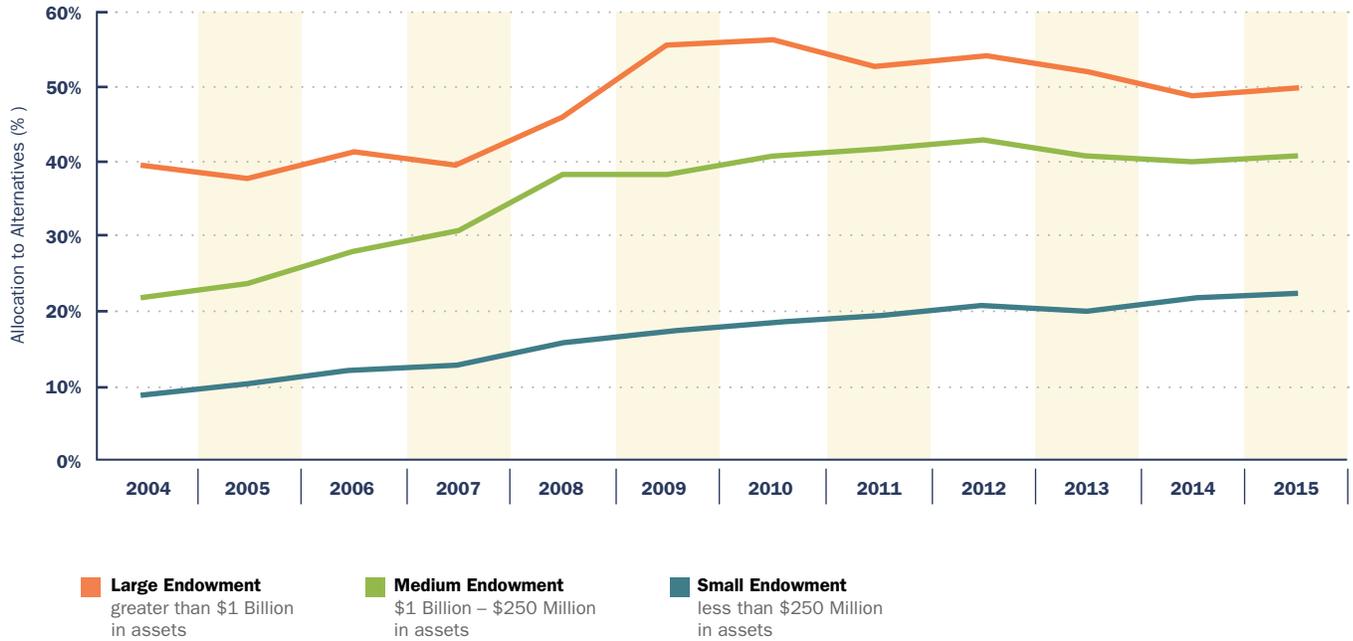
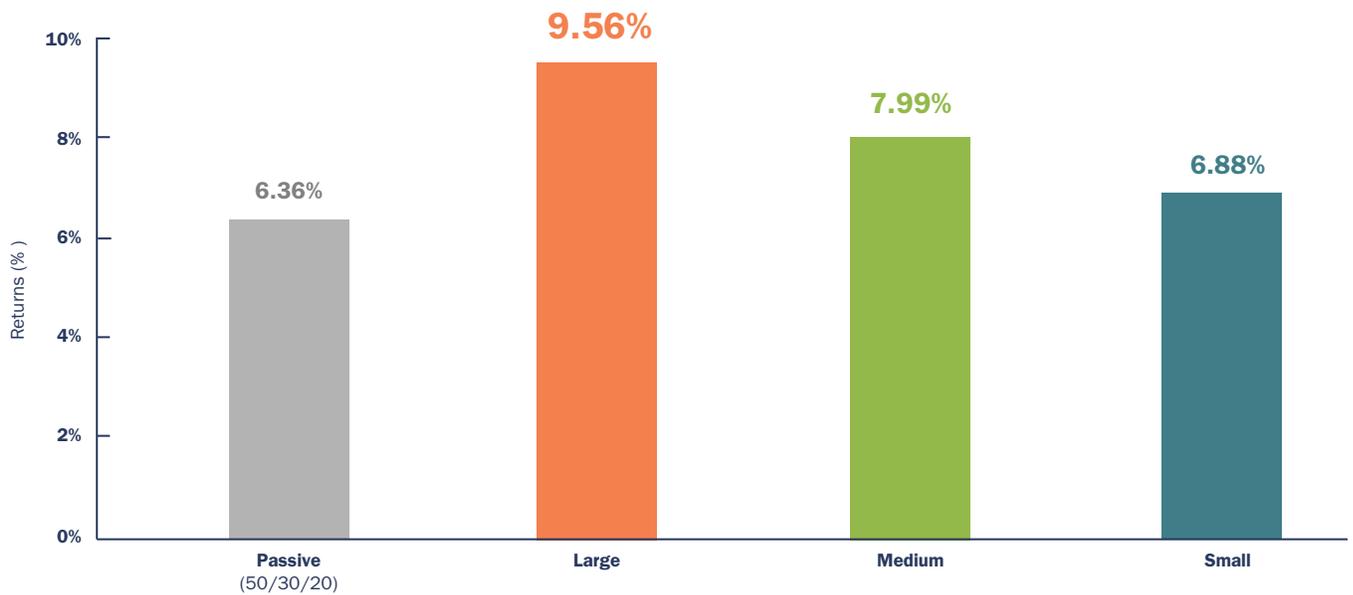


Figure 2: RETURNS FOR ENDOWMENTS (BY SIZE) AND PASSIVE STRATEGY



EFFECTS OF BOARD EXPERTISE AND NETWORKS ON ENDOWMENT INVESTING

83% of respondents agreed that the fund's investment process and decisions benefit substantially from the expertise of the governing investment committee.

MANY ENDOWMENTS BELIEVE THEIR governing bodies substantially benefit their investment processes and decisions. In our survey of endowments, when asked for reactions to the following statement, “the fund’s investment process and decisions benefit substantially from the expertise of the governing investment committee,” 83 percent of respondents somewhat or strongly agreed and almost half strongly agreed. More specific questions revealed that in addition to formal policies on asset allocation, committee members (especially those with investment expertise) provide advice and contacts in many endowments. This includes roles in manager selection as well as in establishing contacts with funds that may be hard to access. Such closed or restricted funds are most prevalent in alternative assets such as venture capital or private equity.

To provide large scale tests of the effects of expertise and networks, we looked at the employment histories and business connections for thousands of trustees for hundreds of colleges and universities. (see opposite, “Our Approach: Data and Methodology”). What did we find?

INVESTMENT EXPERTISE MATTERS FOR INVESTING IN ALTERNATIVE ASSETS

There are substantial differences across endowments in the expertise resident in their governing bodies. Moreover, increased expertise in alternative assets goes along with higher allocations to those assets as shown in Figure 3. The flip side of higher allocations to alternatives has been a shift away from investments in public stocks and bonds.

Our research shows that this link between expertise and allocations holds even after controlling for other endowment characteristics, including size. Additionally, we find the nature of expertise appears granular within alternative asset categories; expertise in hedge funds matters for allocations to hedge funds, whereas expertise in private equity or venture capital matters most for that specific area. Consistent with this pattern, our tests show that having a full time Chief Investment Officer (CIO) is positively linked to allocations to private equity and venture capital but not to hedge funds. These findings across hedge funds, private equity, and venture capital are consistent with the relative illiquidity and difficulty of managing and accessing these specific types of alternative assets.



OUR APPROACH: DATA AND METHODS

To study higher education endowments, we obtained data from annual surveys (years 2004–2015) of these endowments by the National Association of College and University Business Officers (NACUBO) and thank them for sharing the data. Since 2009 NACUBO and the Commonfund Institute have joined forces on this annual survey which includes both colleges and universities (which we'll sometimes collectively refer to as “universities” for simplicity). To develop biographical information on a university's trustees, we harnessed the Guidestar and Boardex data bases. We measure expertise based on employment history. For instance, if an individual had worked for a venture capital fund they would be classified as having expertise in alternative assets and within that category as having venture capital expertise. Network measures are based on connections to individuals through current or past employment, educational experience or social history through organizations. Our data set on expertise and networks covers 579 endowments, 11,019 unique individuals in governance roles at those endowments and 55,446 individual-year observations (over the years 2007-2015 for which both BoardEx and Guidestar data are available). To develop measures at the endowment level we aggregate across individuals that serve in governance roles at the endowment.

To examine returns adjusted for risk, we use Sharpe Ratios which are estimated as the return premium earned by an endowment (portfolio return minus a safe Treasury bill rate) divided by the portfolio's risk (as proxied by the standard deviation of return). All our risk measures are explicitly adjusted for the well-known difficulties of estimating risk for illiquid, alternative assets. To see how well an endowment does in picking assets within an investment class, we compute a “selection” return by comparing an endowment's return to the return it would have earned if we applied its asset allocations to benchmark returns for each of eight asset classes (e.g. the SP500 for allocations to U.S. equities). We conducted a series of rigorous statistical tests using our measures to analyze investment patterns and performance across endowments.

Additionally, we conducted a survey of endowment boards and managers and appreciate the participation of the respondents. The 132 responding institutions collectively manage more than 60% of total market value of endowments as of 2015. About three-fifths of the respondents are CIOs, CFOs, or senior investment directors.

BOARD EXPERTISE AND NETWORKS *[continued]*

Figure 3: ALLOCATION TO ALTERNATIVES by INVESTMENT EXPERTISE OF BOARD MEMBERS

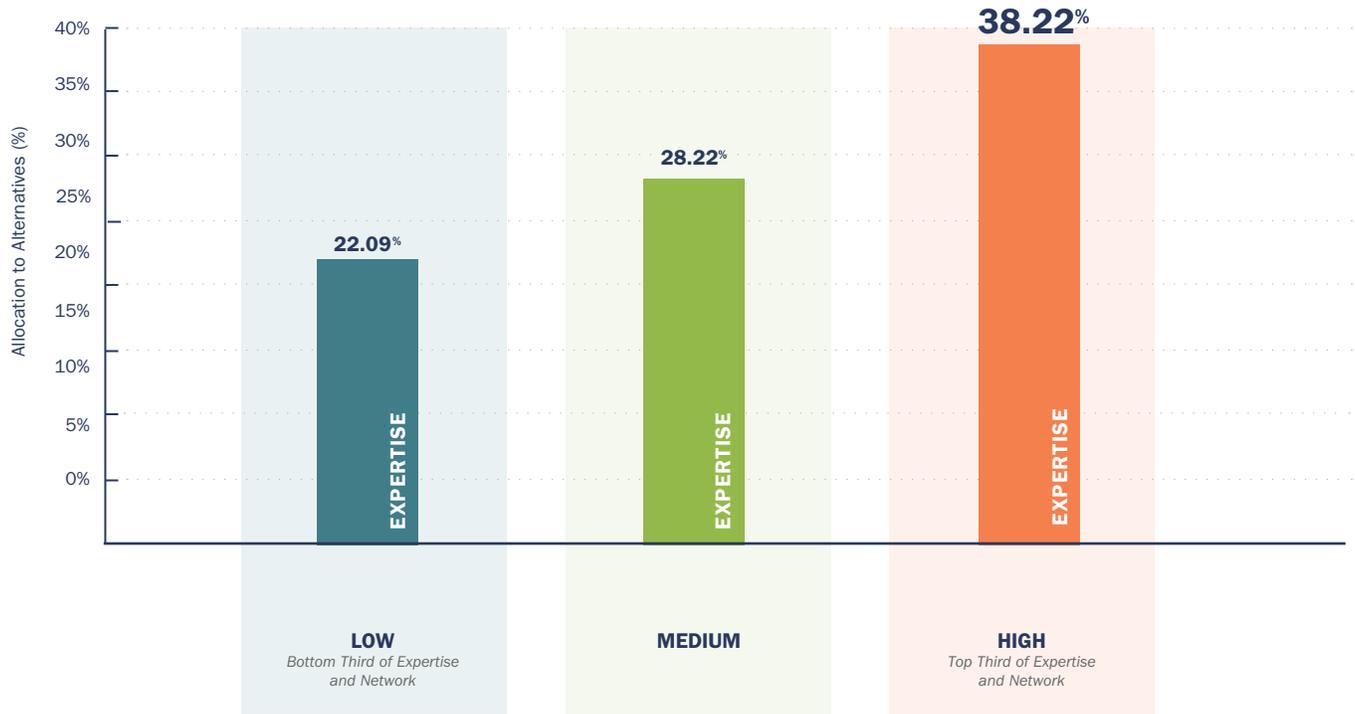
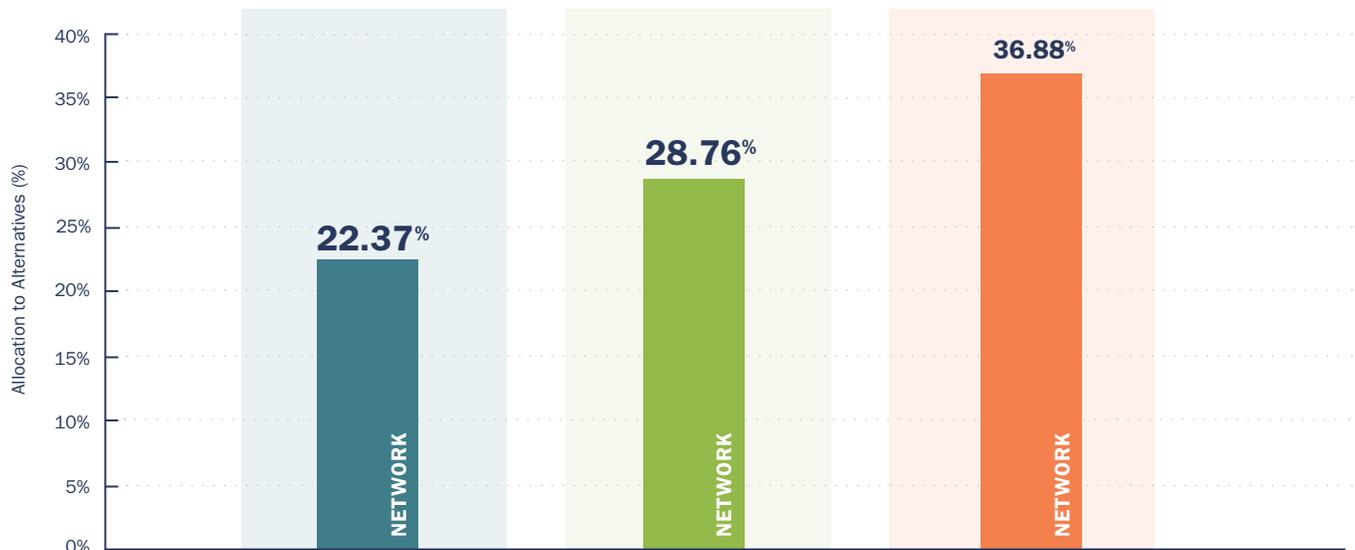


Figure 4: ALLOCATION TO ALTERNATIVES by PROFESSIONAL NETWORK



PROFESSIONAL NETWORKS MATTER ALSO

Governing bodies' networks and connections appear to be channels that affect the investment process. Figure 4 shows that allocations to alternative assets are, in fact, positively linked to professional connections (networks). Further investigation shows that this link is especially pronounced for allocations to private equity and venture capital. Respondents to our survey note this channel. Fifty six percent of respondents reported the "committee members facilitate access to investment opportunities that would otherwise be difficult to identify or undertake (e.g., closed or restricted funds)." This help with access is fairly infrequent, however. 34 percent said it happened rarely (less than once a year) and only four percent said it happened more than twice a year.

BETTER INVESTMENT PERFORMANCE ACCOMPANIES EXPERTISE IN GOVERNING BODIES

Ultimately, an endowment portfolio's performance is what helps fund its school. Earlier we showed that overall endowment performance has been strong, on average, and especially so for large endowments. Are these outcomes linked to the expertise on governing bodies? "Yes" is the answer that shows through in our research. We find that more expertise in alternative investments is related to better investment outcomes. Figure 5 illustrates effects on risk-adjusted portfolio performance. Endowments with higher expertise (top third of endowments ranked on expertise) have better than average performance while those with low expertise (bottom third) have lower. Specifically Figure 5 reports deviations from average in portfolio Sharpe ratios (returns per unit of risk) based on expertise. In more detailed tests, we document this relationship controlling for a host of variables including endowment size.

Within alternative assets, is expertise linked to success at active management to select and access high performing managers? To test this we computed a “selection” return which compares the return that an endowment earned on alternatives to the hypothetical return it would have earned if it invested in “average” performers within each asset class (as proxied by benchmark indices for hedge funds, private equity and venture capital which are applied to the endowment’s asset allocations). Using the same approach as applied in Figure 5, Figure 6 reports outcomes for this selection return. The results are striking: endowments whose governing bodies have high levels of expertise (top third) appear to be much better in achieving selection returns through active management. Our additional tests show that the importance of expertise emerges even after controlling for endowment size and is particularly notable in venture capital. This is consistent with the importance of access to high performing venture capital partnerships. Our research also finds that expertise affects how endowments navigate choices between direct funds and funds of funds. Endowments with more expertise resident in their boards are more likely to invest in alternative assets using direct funds rather than funds of funds which have an additional layer of intermediation and fees. This is consistent with an increased ability to understand and access direct funds.

We find that more expertise in alternative investments is related to better investment outcomes.



Figure 5: SHARPE RATIO BY EXPERTISE

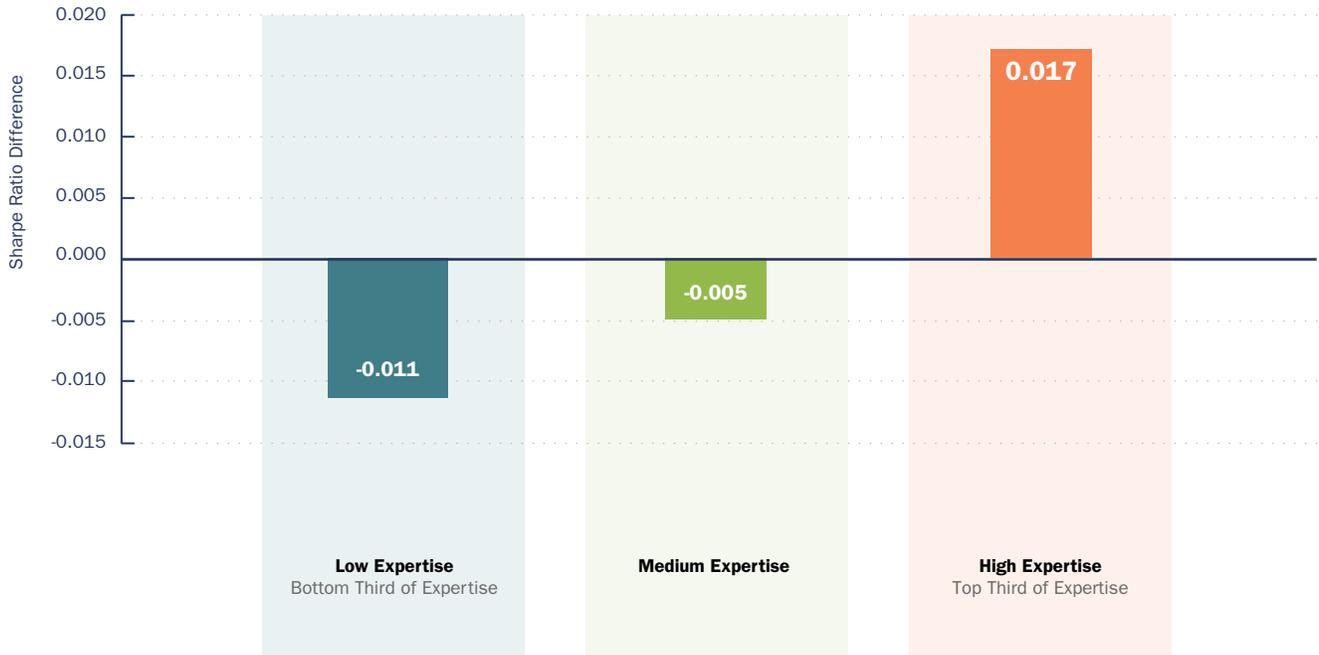
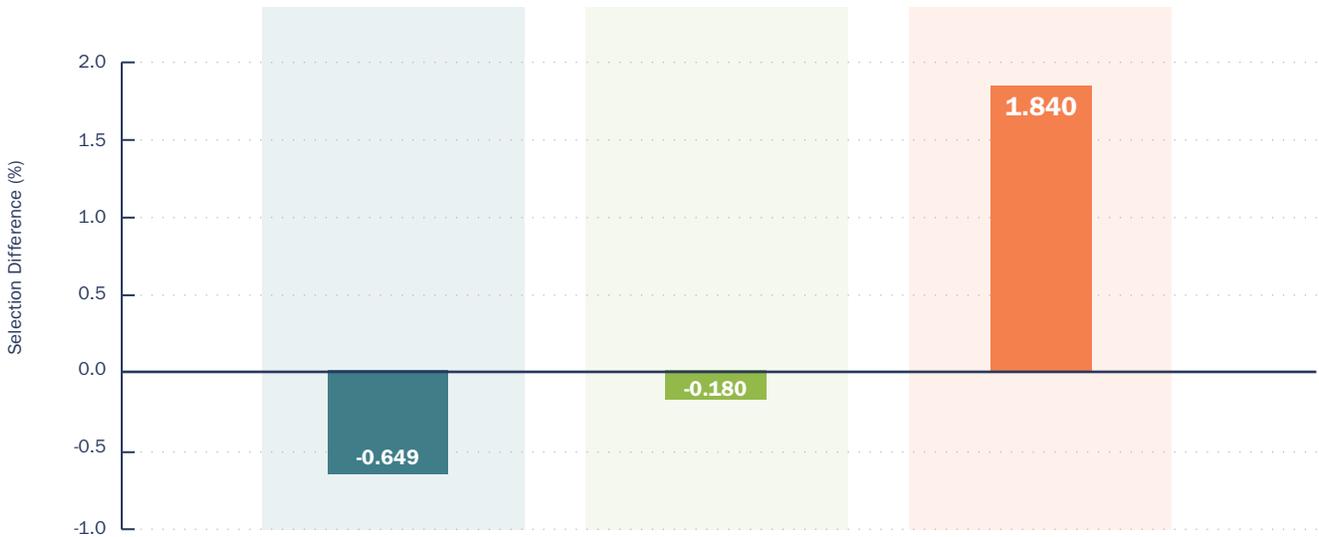


Figure 6: ALTERNATIVE SELECTION BY EXPERTISE



These figures show the differences between the sharpe ratio and alternative selection component earned by high, medium and low alternative expertise endowments and the average Sharpe ratio for each fiscal year. Yearly figures are then averaged. The sample period is 2007-2015.

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OUR RESEARCH SUGGESTS THAT ENDOWMENTS, on average, have been good stewards of the capital they invest. Their investment performance has been strong, and especially so for larger endowments.

Endowments allocate substantial funds to alternative assets such as hedge funds, private equity and venture capital. Our findings show that, on average, endowments (especially large endowments) have earned higher total returns due to investing in alternative assets. Part of the return increase is due to harvesting higher returns in an asset class (e.g., a liquidity premium in alternative assets) and part is due to active management within an asset class. These conclusions hold even adjusting for risk.

Investing in alternative assets creates special challenges and frictions. These assets are often illiquid and hard to analyze, access and manage. Our evidence suggests that the investment expertise and professional networks resident in university governing bodies help endowments navigate this type of private investment, especially in private equity and venture capital. Having a professional staff dedicated to investing is also significant in making and managing alternative investments.

Overall, our findings suggest that endowments directly benefit from having experts in alternative investments serving on university boards. The potential benefits seem highest in areas such as private equity and venture capital.

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