

# How Important Are Investment Committees? Evidence from University Endowments\*

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## Abstract

Empirical evidence on the relation between the performance of institutional investment portfolios and their governing boards is often confounded by conflicts of interest and external influence. In contrast, university endowments, given their long horizons and relative investment flexibility, provide a clean laboratory for examining the effects of board expertise (often resident in an investment committee) on asset allocation, manager selection, and performance. Using detailed information on more than 11,000 unique board members for 579 endowments, we show that hedge fund and venture capital expertise is positively correlated with allocations to alternative investments. Further, we examine the benefits of board members' connections to networks of investment professionals. Beyond direct expertise, we find that endowments with boards in the top connection quartile invest significantly more in venture capital and private equity. With respect to returns, expertise in venture capital, in particular, is associated with higher active returns among alternative investments, suggesting a role for manager selection. To help shed light on the channels through which elevated performance arises, we conduct a unique survey of endowment Chief Investment Officers. We find that better connected investment committees are associated with more frequent recommendations of and access to restricted high-performing funds. Our results suggest that endowments directly benefit from experts in alternative investments on their investment committees.

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The performance of institutional investment portfolios is primarily driven by two choices. First, return generation is largely determined by decisions related to broad asset allocation. Second, within the particular asset classes selected, additional value can be extracted by selecting high-performing managers. As the governance structure of most institutional funds involves an investment committee at least nominally tasked with contributing to these two set of decisions, a natural question is how important are investment committees in practice. Using a setting that is less affected by many of the distortions plaguing decision making, we study links between the governance role of investment committees, and both fund asset allocations (with a particular eye to alternative investments), and portfolio performance. In doing so, we build novel measures of the expertise residing in investment committees and the network of important connections committee members may have, which together shed light on factors that drive performance.

University endowments provide a unique laboratory to explore whether there are benefits associated with the expertise and connectedness of investment committee members. From a financial perspective, university endowments have an infinite investment horizon, enjoy favorable tax status, and often have the institutional flexibility to pursue fairly unrestricted investment opportunities (Swensen (2009)). Moreover, endowments are more likely to be free from external political influence and other constraints which have been shown to (negatively) matter for public pension funds. For example, Andonov et al. (2017) highlight performance distortions that are associated with political influence by demonstrating that representation on a pension fund board by state officials is negatively related to investment performance.

If committees matter, we endeavor to better understand their role in driving investment success or failure. While the existing literature indicates that the superior performance of endowments has coincided with a shift in asset allocation towards alternative investments (Barber and Wang (2013), Brown et al. (2010), Lerner et al. (2008)), no studies clearly identify the role of investment committees in driving asset allocation nor any associated returns. We examine whether the composition of investment committees plays a central role in driving asset allocation and manager selection, with attention to the possible access they might facilitate to restricted, high-performing funds.

Endowment investment committees affect decisions through a number of channels. First, committees presumably play a central role in setting the asset allocation policy and approving changes to it. Given that investment committees possess approval authority for asset allocation, the sizable heterogeneity in asset allocation documented by [Lerner et al. \(2008\)](#) could only happen through their consent and direction. For example, in a survey of over 100 university endowments that we conducted to better gauge this universe,<sup>1</sup> a responding Chief Investment Officer (CIO) says: *“For many years, our investment committee was very conservative and only supported traditional stock and bond portfolios. We obtained approval of a fully diversified allocation in 2008, with a direct investment program for alternatives...the endowment has greatly benefited from it...”*.

Second, the investment committee plays a role in shaping the set of managers with which the endowment invests. [Brown et al. \(2010\)](#) show that while passive asset allocation explains 90% of the time-series variation in endowment returns, selection matters in the cross-section. Therefore, directing capital into successful investments is a key to success. Some committees directly review and approve managers, often in consultation with investment consultants or staff. Other committees, typically in larger endowments, may delegate manager review and selection to staff, but even in these instances investment committee members may suggest managers or introduce the staff to high-performing managers whose funds may have restricted access for investment (especially important in alternative assets such as venture capital). Privileged access to closed or restricted high-performing funds might arise from the business connections existing committee members possess. For example, responses to our survey revealed these experiences: *“Some investment committee members have network connections with leading fund managers...(which) helped the endowment gain larger allocations in capacity constrained funds...(these funds) have been top performers in the portfolio.”* and *“Several investment members are proactive in suggesting potential managers for investment...(these managers) are closed or highly sought after.”*

Third, the composition and size of effective committees may impact the very nature of decision making. Too large a committee may inhibit decision making. And even if the decision process

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<sup>1</sup>Considerably more detail to follow in the last section below.

is streamlined, the committee may not have the investment savvy or breadth of experience to support an investment strategy. We learn from a survey respondent: “*We seek at least one member with demonstrated experience in alternative investments.*” Another respondent identifies this as a constraint: “*I would like to have more expertise in investments on the committee. We are a small liberal arts college, with many lawyers, and no investment professionals, on the Board of Trustees.*”

To shed light on how investment committees of university endowments impact asset allocations and returns, we use data from the National Association of College and University Business Officers (NACUBO) and BoardEx. After collecting information on over 11,000 unique board members for 579 endowments, we construct a novel measure of investment committee expertise that includes granular information related to the specific experience of the members in hedge funds, private equity, and venture capital. We find that hedge fund and venture capital expertise is significantly correlated with asset allocation. A 10% increase in the proportion of members with hedge fund experience is associated with 1.8% increase in the allocation to hedge funds. Similarly, a 10% increase in the proportion of members with experience in VC is associated with a 0.27% larger allocation to VC; the latter figure is a substantial shift, given an unconditional mean allocation to VC of less than 2%. We also provide suggestive evidence that endowments with a more experienced investment committee are less likely to use *funds of funds* for accessing alternative strategies and hedge funds; instead, they make investments in *direct* funds. Finally, beyond the expertise of the individual committee members, we also uncover evidence related to the degree to which endowments are connected to networks of investment professionals. We find that funds in the top network connection quartile invest 0.25% to 0.80% more in VC and 1% to 2% more in PE than committees in the bottom network connection quartile, depending on the specification considered.

Beyond effects on allocations we directly examine returns over our sample period. We first document that more experienced investment committees are associated with higher total returns, on average. When we focus on the selection component of returns, the investment committee expertise leads to even larger differences in performance. To establish a reference point, [Cavagnaro et al. \(2017\)](#) find that limited partners who are more skilled at selecting managers earn 100 to 200 basis

points more, on average, in their private equity investments. Similarly, we find that hedge fund expertise on the investment committee appears to positively affect the components of portfolio returns related to active management. A 10% increase in the proportion of hedge funds managers on the board is associated with an 18 basis point increase in active returns. Moreover, hedge fund expertise is positively and significantly correlated with higher returns from market timing within the alternative investment category. These positive effects are consistent with the recent shift in asset allocation from domestic equity and fixed income to hedge funds, and especially so for small and medium endowments. We also find that investment committee expertise in VC is associated with higher active returns in specific alternative investments. For example, a 10% increase in the proportion of the board with VC experience is associated with 100 to 120 basis point increase in the active returns from alternative investments. This is consistent with previous research documenting the importance of access to VC partnerships for endowment returns. Overall then, committee member experience matters for the active components of returns in alternative investments.

To conclude the paper, we augment our study with the results from a survey we conducted to help shed light on the likely channels through which an experienced investment committee might impact asset allocation and returns. We document that survey respondents contend that better connected investment committees are associated with more frequent recommendations of and access to restricted and closed funds.

We contribute to the literature on the performance of institutional investment portfolios along several dimensions. First, we provide a clean setting in which the role of investment committees can be analyzed. Second, we study the composition of university endowments investment committees at a very granular level and build measures of expertise in investment-related industries and each member's network connections. We link these characteristics to decisions driving asset allocation and related performance. Finally we provide a unique survey which supports our analysis with both anecdotal evidence and quantitative responses by CIOs of more than 100 university endowments.

We proceed as follows. Section 1 relates this paper to the extant literature. Section 2 highlights several prominent patterns in endowment returns and allocations, and provides summary statistics

for the universe of U.S. endowments. We also outline features of endowment governance, with special emphasis on investment committees. Next, we discuss several findings on how investment committee characteristics and expertise are linked to asset allocation and investment performance. We provide some evidence related to the expertise of individual members and how their outside networks and connections influence asset allocation and returns. Finally, we provide unique survey evidence to shed light on the likely channels through which an investment committee operates. Section 5 concludes.

## 1 Related Literature

University endowments have long been of great interest to academics in economics and finance. Early theoretical research focused on the role of universities in preserving inter-generational equity and guaranteeing an indefinite rate of consumption for future generations. [Tobin \(1974\)](#) addresses these key issues, suggesting that the trustees of an endowment should focus on stabilizing income streams within a university, but does not consider endogenous income sources (fees, tuition, grants etc.). [Merton \(1993\)](#) derives optimal portfolio investment and spending rules for endowments, while also accounting for all sources of income within a university.

Endowments collectively manage over half a trillion dollars (2015), and spend roughly 4 to 5 percent of that aggregate on the educational system each year. Therefore, understanding how investment committees (hereafter, ICs) impact asset allocation and ultimately performance, is of the utmost importance for the ultimate beneficiaries such as students, faculty, and the overall level of research productivity. In the parallel corporate finance literature on board governance and composition, [Güner et al. \(2008\)](#) find that the presence of commercial bankers on boards is associated with increased external funding, while investment bankers are associated with larger bond issues and poorer acquisitions. In the investments literature, [Andonov et al. \(2017\)](#) find that the lack of financial experience contributes to poor performance of boards dominated by plan participants. In addition, pension funds whose boards have a high fraction of government officials under-perform

within investment categories, such as real estate and venture capital.

Our first main contribution is to provide a unique setting fairly free from the external influences and conflicts of interests to which corporate boards and some types of institutional investors are subject. Therefore, university endowment ICs provide with a relatively clean way in which to examine their impact on asset allocation and performance.

The existing literature on university endowments has focused on their active behavior and superior returns ([Barber and Wang \(2013\)](#), [Brown et al. \(2010\)](#)) and the impact of financial and income shocks on spending and asset allocation ([Brown et al. \(2014\)](#), [Dimmock \(2012\)](#), [Rosen and Sappington \(2016\)](#)). Timely access to investment opportunities have often been cited as the main driver of endowment returns. [Lerner et al. \(2008\)](#) provide descriptive statistics documenting how large endowments have shifted their asset allocation towards alternative investments and have enjoyed superior returns. However, the authors caution against a simple mimicking strategy since they contend that security selection is the key driver of returns rather than market timing. Similarly, [Sensoy et al. \(2014\)](#) find that endowments have enjoyed superior returns due to access to high-performing venture capital funds over the 1991-1998 period. Privileged access to superior investment strategies could be linked to unobserved institutional features of some university endowments, to observed characteristics of each endowment related to skilled investment committees or staff, and/or the interaction between the two. Moreover, access to particular funds might be the consequence of social network interactions between investment committee members and the finance industry, through which a particular member provides valuable connections.

Our second contribution is to study the composition of university endowment ICs to highlight the likely channels through which they might impact asset allocation and returns. We focus on the measurable expertise of committee members in alternative asset classes such as hedge funds, venture capital, or private equity, as well as the degree of network connectedness to the financial industry that they may possess. We study how IC's network connections may facilitate access to closed or restricted private equity and venture capital funds. Networks may guarantee larger stakes during the allocation process and ultimately access to top performing funds. To the best of our

knowledge, we are the first to study the role of endowment university ICs' networks. [Cavagnaro et al. \(2017\)](#) find that skilled limited partners do matter, whereas networks do not. We complement their analysis, by identifying part of the officers (ICs) responsible for changes in asset allocation, which ultimately lead to better performance.

Third, we conduct a unique survey of roughly 100 university endowment CIOs and provide direct evidence of the role of the IC through their responses to a series of questions. This survey provides both additional anecdotal evidence from leaders in the management of endowment assets, as well as relevant qualitative and quantitative responses that support our analysis.

## 2 Data and Summary Statistics

Data come from three primary sources. First, we use the National Association of College and University Business Officers (NACUBO).<sup>2</sup> NACUBO conducts voluntary surveys of university endowments on a yearly basis and provides benchmarking information to the responding institutions. Our analysis covers the period from 2004 to 2015, and thus includes the financial crisis. Second, we use data from BoardEx, and create a unique sample of over 11,000 unique board members with their educational, professional and social histories.

Despite their collective importance for higher education, the aggregate figures on university endowments mask vastly different institutional profiles. The National Association of College and University Business Officers' (NACUBO) survey of colleges and universities reveals an average endowment of \$651.5 million (as of 2015), but a few endowments have tens of billions of dollars and over half have less than \$115 million. [Figure 1](#) shows that total assets under management have increased dramatically over the last 20 years.

Endowments make headlines each year, as colleges and universities report their investment returns. [Figure 2](#) provides average rates of return (net of fees) across all the endowments in the NACUBO-Commonfund Study of Endowments (NCSE) annual surveys. Results cover 552 college

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<sup>2</sup>NACUBO and the Commonfund Institute joined forces in 2009 to create a single, comprehensive annual study of higher education endowments (NCSE).

and university endowments in 2005, with the number increasing steadily after 2008, reaching 812 in 2015. Not surprisingly, endowments were not immune to the rise and fall of financial markets during the recent decade. For the NACUBO sample of university endowments, Table 1 provides summary statistics related to cash flow and spending, use of funds, and governance.

The average endowment has total assets of about \$501 million. However, the distribution of total assets is very positively skewed, with the mean value even greater than the 75th percentile. A few large endowments, with asset over \$10 billion, are responsible for the shape of the distribution. Similarly, cash flow figures point to the same patterns. Life income and annuities (charitable remainder trusts, gifts annuities, pooled income funds and donor advised funds) total \$13.51 million on average. Inflows (restricted and unrestricted gifts and investment income) to and outflows (distribution for spending, investment management and custody expenses, non-recurring expenses) from the endowments report aggregate figures of about \$32.42 and \$20.61 million on average, respectively. Most funds disclose a 7.22% figure for underwater assets as a percentage of total endowment size, i.e. assets with a current market value less than the historic dollar value. Underwater funds peaked in 2009 (22.66%), and subsequently reverted back to 1.91% in 2015.

Some of the main goals of an endowment are to maintain an adequate rate of return above inflation, to transfer investment gains to the university system, and to sustain continuing education for current and future generations. Table 1 reports that endowment spending rates (as a percentage of total assets) fluctuate around 4.45%, on average. Similarly, over the period 2004-2015, about 9.91% of each institution's operating budget was funded by the endowment. These numbers indicate that the overall contribution provided by endowments is substantial.

## **2.1 Asset Allocation**

Figure 3 and 4 show that there is a large variation in asset allocation to alternatives both over time and across funds. This could only happen by the consent and direction of the ICs. As previously documented by Lerner et al. (2008), figure 3 illustrates the magnitude of the shift towards alternative assets, partitioned by endowment size: large (more than \$1 billion in assets), medium

(\$250 million to \$1 billion), and small funds (below \$250 million).<sup>3</sup> Figure 3 shows that large endowments have, on average, invested half of their assets in alternatives in 2015. In particular, IVY League institutions (Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, University of Pennsylvania, Princeton University, and Yale University) rely on a “new” 60/40 asset allocation, with a 60% allocation to alternatives and a 40% allocation to traditional public markets. Smaller endowments steadily increased their allocations to alternatives from 2004 to 2015, but still fall far short of those allocations made by larger institutions. A closer look at the composition of the alternative investment asset class (figure 4) reveals that hedge funds represent one-fifth of the total asset allocations of large and medium endowments in 2015, while private equity and venture capital stands at 15%. In each case, it should be noted that the cross-sectional dispersion with smaller funds is more pronounced.<sup>4 5</sup>

The rise in alternatives necessarily comes from a reduction in the allocations to domestic equity and fixed income securities.<sup>6</sup> By 2015, large endowments held, on average, less than one-fifth of their portfolios in U.S. publicly traded stocks and less than one-tenth in fixed income (figure 5). In particular, the proportion of assets allocated to *active* domestic equity has steadily decreased for all funds (figure 5). While the large endowments control the vast majority of assets, small endowments dominate by number. For instance, our method for partitioning funds leads to almost three fourths of funds being classified as small, whereas slightly less than 10% is characterized as large. Panel A of table 2 reports detailed asset allocation for large, medium, and small endowments.

## 2.2 Returns

Large and Ivy League endowments have been often praised for their extraordinary returns over the last 20 years, especially in the period prior to the financial crisis. More recently, endowments

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<sup>3</sup> Alternatives include investment vehicles related to real estate, venture capital, private equity, energy and natural resources, marketable alternative strategies, and distressed debt.

<sup>4</sup> Hedge funds include absolute return, market neutral, long/short, 130/30 strategies, event driven, and derivatives.

<sup>5</sup> Private equity includes LBOs, mezzanine, M&A, and international private equity.

<sup>6</sup> Domestic equity includes active, index (passive/enhanced), Commonfund Multi-strategy Equity Fund, and other Multi-strategy Equity Funds. Fixed income includes active and passive domestic and international, investment grade and non-investment grade, emerging markets, Commonfund Multi-strategy Bond Fund, and other Multi-strategy Bond Funds.

have been accused of possible excessive risk taking and the dangers of illiquid portfolios (figure 2). However, the degree to which this over (under-) performance can be attributed to asset allocation and market movements versus endowment skills and market timing remains an open question. If we split the sample into high, medium and low asset allocation to alternatives as of 2004, endowments in the top tercile earned an average return of 8.7% over the following 10 years, while funds with low exposure to alternatives earned approximately 7%.

Therefore, a step further in understanding university endowment performance requires breaking up the total portfolio return (net of fees) into its basic components. Data included in the NACUBO data set help to a certain extent. We follow [Brinson et al. \(1986\)](#), [Brinson et al. \(1991\)](#), and [Daniel et al. \(1997\)](#) and decompose an endowment total net return into three components due to (1) *passive (or policy) asset allocation*, (2) *market timing*, and (3) *selection*. A similar procedure in the context of university endowments can be found in [Brown et al. \(2010\)](#). As explained in Section 2, respondent institutions to the NACUBO survey report their asset allocation, and only a small number report the total return pertaining to each bucket within an asset class. Notably, almost every endowment reports the overall return of the alternative investment category, while only a few give detailed information related to hedge fund or private equity investment returns (within the alternative class). Therefore, our measure of *selection* will be a residual category after accounting for passive returns and *market timing*. However, we later consider a sub-sample of funds that do report detailed asset allocation and return figures.

Total return can be decomposed as

$$\begin{aligned}
R_{i,t} &= \sum_{j=1}^N w_{i,j,t} r_{i,j,t} \\
&= \sum_{j=1}^N w_{i,j,t-1}^B r_{j,t}^B + \sum_{j=1}^N \left( w_{i,j,t} - w_{i,j,t-1}^B \right) r_{i,j,t}^B + \sum_{j=1}^N w_{i,j,t} \left( r_{i,j,t} - r_{j,t}^B \right) \\
&\equiv R_{i,t}^B + R_{i,t}^T + R_{i,t}^S
\end{aligned} \tag{1}$$

where  $R_{i,t}$  is the total endowment return (net of fees) for fund  $i$  at time  $t$ ,  $w_{i,j,t}$  and  $w_{i,j,t-1}^B$  are actual

and policy weights for endowment  $i$  and asset class  $j$ ,  $r_{i,j,t}$  is the total return for asset class  $j$  for endowment  $i$  at time  $t$ , and  $r_{j,t}^B$  is the return on a commonly used benchmark for asset class  $j$  at time  $t$ . Policy weights and detailed returns within the alternative asset class are not always observed. Therefore, we use lag values of actual weights as proxies for policy portfolio weights.<sup>7</sup>

Panel B of table 2 shows summary statistics for total returns (net of fees), domestic equity, fixed income, alternative investments, real estate, venture capital, private equity, commodities and hedge fund returns. We split the sample by endowment fund size as measured by the total value of their assets. Large funds have enjoyed larger total returns, on average. In particular, the median large endowment earned an average of 11 % in alternative assets, compared to only 5% for small endowments. However, the inter-quartile range shows that there is a lot of heterogeneity within each size bucket. The dispersion in alternative investment returns of small size endowment is comparable to that of their larger counterparts, where some small endowments earn as much as 16% in venture capital and private equity investments. The return decomposition in panel C of table 2 shows that *market timing* is relatively homogeneous across size, while much of the differential in total return (40%) is explained by the *selection* component. The remaining 60% relates to the policy asset allocation of each individual endowment. Panel C of table 2 also shows that the bulk of the selection component comes from the alternative asset class. This is particularly true for the median large and medium endowments, as well as for the top quartile within the small category.

Moreover, we double-sort endowments based on size and on the proportion of alternative investment specialists on their investment committee.<sup>8</sup> We compare endowments for which the proportion of specialists is greater than 70% against those with less than 30%. Panel B of Table 3 reports average values for asset allocation and returns. Even within a size bucket, more experienced endowments fare better than their less sophisticated peers. They invest more in hedge funds and private equity and less in domestic equity and fixed income. The difference is statistically different from zero. Moreover, within large funds there is tremendous heterogeneity in the *selection*

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<sup>7</sup>Our decomposition results are robust to different methodologies, such as cross-sectional average weights and simple 2-, 3-, 5-years average of actual weights.

<sup>8</sup>Based on data provided to NACUBO.

component of very experienced investment committees versus their less experienced peers. This basic finding can be interpreted as an indication that experienced investment committees, above and beyond whatever factors are related to endowment size, either facilitate access to superior managers, provide better governance and oversight, or both.

## **2.3 Governance**

Sound decision making within a university endowment is key for achieving its mission and goals. Governance, defined as the structure and process that ensures a correct implementation of decisions, asset management, and overall oversight, helps achieve inter-generational equity and capital preservation. Every organization consists of a complex interconnection between various individuals, from board members to top managers, who run the investment program. Responsibility and accountability are requirements of solid governance. For university endowments, the role of first-class academic research and teaching is too important to crumble under the inattentive and neglectful behavior of myopic governance. Therefore, information, duties, and responsibilities should efficiently flow to the individuals with portfolio implementation roles following a top-down approach.

The highest level of responsibility is held by the Board of Trustees, which generally appoints an Investment Committee (IC) to look after the investment process. The Board specifies the broader fund objective, oversees investments, and delegates responsibilities. Moreover, it decides on spending and distributions from the endowment. The Investment Committee sets the investment policy, risk limits and delegates investment power to the management staff. All these duties are specified in the Investment Policy Statement (IPS), which defines and summarizes the objectives and goals of the fund, responsibilities, asset allocation (policy asset allocation with ranges), liquidity requirements, manager selection guidelines, and other common provisions. Lastly, the investment staff implements the IC's decisions, manages risk, and interacts with managers.

NACUBO's annual survey of endowments provides information on some aspects of IC governance. Data include the number of voting members, the nature of conflict of interest policies, and

information on endowment staff. Table 1 summarizes IC governance-related variables for all the endowments in the NACUBO sample.

Average IC sizes correspond to the conventional wisdom for the sector.<sup>9</sup> The typical IC has 7 to 9 voting members, and this average has been fairly constant over the last decade. There is modest variation when endowments are segmented by size. Large endowments are at the upper end of the range (average of 9.6) compared to averages for medium (8.9) and small (7.8) endowments. Interestingly, larger endowments have a larger proportion of voting members who are not trustees, and this accounts for their larger average IC. For large endowments, 2.6 of the voting members are, on average, not trustees, whereas that figure is only 1.7 for medium endowments and 1.1 for small endowments. Apparently, larger endowments tap into non-trustee talent more often than do smaller endowments. Despite this detail, the average sizes of ICs mask substantial variation. For instance, a tenth of large endowments have 5 or fewer voting members and another tenth have 14 or more. Medium and smaller endowments exhibit similar variation. There is also variation in the inclusion of voting members of the IC who are not trustees. Even though ICs of large endowments have, on average, 2.6 members who are not trustees, over a quarter are composed entirely of trustees as voting members. For ICs of both small and medium endowments, over half are composed entirely of trustees as voting members.

In line with fiduciary responsibilities, endowments typically have a conflict of interest policy in place. This is almost always the case at the board level and for senior staff. For instance, panel A of table 3 shows that among small endowments 98 percent report a policy at the board level and 92 percent for senior staff. Survey data on ICs are somewhat more difficult to interpret since IC members can also be board members and hence subject to board policies. For instance, even though 98 percent of small endowments report a conflict of interest policy at the board level, only 63 percent note a policy for the IC. Many of the remaining 37 percent of small endowments may

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<sup>9</sup>Roundtable (2014) gives advice on what is perceived as best practice for investment committees. For example, a clear and concise investment policy statement should state the purpose and objectives of the endowment, provide guidelines, and impose risk limits. Effective committees are diverse in perspective but not too large to inhibit decision making. Conflict of interest policies should be included, and appropriate terms for members (5 to 7) years can promote stability and continuity. A key issue is the selection and evaluation of staff charged with policy implementation.

well have all IC members covered by board policies since (as noted above) their voting members are typically trustees. Not surprisingly, since ICs for larger endowments tend to have more voting members who are not trustees, over four-fifths of these ICs report a conflict of interest policy at the IC level.

## **2.4 Investment Committee Expertise**

### **2.4.1 General Trends: NACUBO**

Beyond any effects associated with IC's formal structure, there may be relevant effects attributable to the expertise and experience of its members. Such experience may be especially important with respect to alternative asset classes, such as venture capital which are notoriously harder to access and evaluate than publicly traded securities. Committee members can shape appropriate allocation policies and interact with staff to help gain access to high-performing managers. NACUBO surveys report whether IC members are investment professionals and have backgrounds in alternative assets. A striking difference between large and small endowments is in the investment experience of IC members. Panel A of table 3 shows that ICs for large endowments have substantially more investment experience. Over three fourths of IC members in large endowments are investment professionals (average of 6.8 of 9.6 voting members). In contrast, less than half of small endowment IC members have this background (3.3 out of 7.7). Medium endowments fall in between with 5.2 of 8.9 voting members classified as investment professionals. Thus, small endowments seem to have considerably fewer professional experience than their larger counterparts. Differences in IC investment experience are even more pronounced when we focus on alternative assets. Over half of the voting members of large endowment ICs have professional experience specifically in the management of alternative assets (average of 4.8 of 9.6 voting members). In contrast, the average number of members with expertise in alternatives for small endowments is 1.8 - less than half the figure for the typical large endowment. Medium-sized endowments again fall in between, with an average of 3.3 members with alternatives experience.

We also examined whether IC size and experience differed between endowments of private and public colleges and universities. By the end of our sample period, we observe little difference. Further, any measurable differences in these IC size and expertise that we do detect are more related to the scale of the endowment than to whether a school is public or private. We note, however, that over our sample period, public schools (unlike privates) experienced substantial growth in the number of IC members with investment experience, especially those related to alternatives. For instance, the average number of IC members with a background in alternative assets was 3.0 for both private and public by 2015. In contrast, in 2006 the figure for privates was double that of public schools.

#### **2.4.2 Specific Trends: BoardEx**

While NACUBO provides some general information on IC composition, it does not provide specific information on the actual members that sit on the ICs of university endowments. While we do employ the overall level of alternative investment expertise of IC members in the first part of the paper, we do not know the exact composition of each IC.<sup>10</sup> As a result of this relatively lack of detail, we can distinguish between universities that might have a higher percentage of members who are hedge fund managers from those with a high percentage of general partners at private equity firms. Additional information on members are hard to find even on the university or the investment management company web pages. To circumvent this important data limitation and to shed light on the role of the composition of the IC, we rely on data provided by BoardEx of Management Diagnostics Limited, a research company that includes accurate and comprehensive biographical data on business leaders (from top executive and board directors, to mid-level managers).<sup>11</sup>

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<sup>10</sup>NACUBO asks the following question: “How many of your committee members have specific experience in alternative strategies?”

<sup>11</sup>BoardEx provides information on:

1. *Individual Profile Details*: It includes variables such as age, date of birth, first name, forenames, last name, gender, and nationality.
2. *Individual Profile Employment*: It includes variables related to current and past employments, company names, sector, role description, start and end date, and whether the employment record is a board position or not.
3. *Individual Profile Education*: It includes variables related to undergraduate and graduate programs attended, award date, and qualifications.
4. *Individual Profile Achievements*: It includes variables related to other achievements, such as prizes awarded.

We begin our analysis by matching each unique institution in the NACUBO sample with the BoardEx unique company identifier. The sample consists of 579 institutions for which BoardEx has information. Using BoardEx, we retrieve information on every individual associated to any unique institution through its details on 'other activities'. The starting database includes 28,622 unique individuals, belonging to 579 institutions with various roles such as trustee, committee member, overseer, chairman, and director. For many observations, we do not have the starting or the ending dates. Therefore, it is hard to identify who sits on the IC during the NACUBO sample period (2004-2015). Three other problems arise. First, BoardEx does not specify whether an individual sits on the investment committee or simply belongs to the Board of Trustees. Second, many individuals do not disclose their association to a university, nor public information can be found. Therefore we miss these observations. Third, BoardEx categorizes companies into broad sectors, and it does so for all public but only some private companies. However, we are mainly interested in identifying hedge funds, private equity, venture capital funds, real estate companies and other alternative investment firms.

We alleviate the first issue by realizing that the median number of non-trustees on the investment committee is only one for large endowments and zero for medium and small endowments. Moreover, almost two-thirds of university endowments have zero non-trustee members in every year for which NACUBO provides data. We can safely assume that trustees represent individuals who also sit on the IC. It is of course impossible to exactly identify IC members. However, we believe hedge fund managers and investment professionals who are also trustees are more likely to be IC members than, say, an Italian literature professor. To capture a higher percentage of trustees, we obtain additional data from GuideStar USA Inc, one of the world's largest sources of information on nonprofit organizations<sup>12</sup>. We therefore have a panel of 579 institutions with names, titles, average hours worked, and compensation of officers and trustees, from 2007 to 2015. The data set consists of 251,015 individual-year observations. To solve the third problem, we manually code missing

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5. *Individual Profile Other Activities*: It includes variables related to current and past memberships in nonprofessional organizations, nonprofits, and clubs, start and end date, and a role description.

<sup>12</sup>GuideStar gets information from IRS Form 990 using EINs, which we manually provide.

sectors for private firms whose name contains key words related to alternative investments and general finance using public sources.<sup>13</sup><sup>14</sup> We use granular categories in order to be able aggregate industries at a later stage. Moreover, we re-code the BoardEx sector “Specialty and Other Finance”, since it likely includes important industries from hedge funds to venture capital funds.<sup>15</sup>

For the final database, we match GuideStar and BoardEx on similar individual names and exact company identifier. This first step leads to 6,349 unique individuals for which we have information through BoardEx (35,190 individual-year observations). Moreover, we search the entire BoardEx database for perfect name matches with GuideStar. We use different combinations of first name, last name, forenames, prefix and suffix to avoid errors due to two or more individuals having the same name. To minimize the likelihood of including an individual different from the actual trustee as reported by GuideStar, we only retain individuals with unique names in BoardEx. We identify 4,670 additional individuals, which leads to 11,019 unique members and 55,446 individual-year observations. As a quality check, the average size of endowment ICs is 8.5 members, which would lead to approximately 44,293 individual-year observations (579 institutions over 9 years).

### 2.4.3 Trustees Background and Expertise

We begin our analysis by constructing different variables related to trustee background, education, and expertise.<sup>16</sup> Panel A of table 4 shows summary statistics related to individual members by endowment size. The average age is similar (66 years) across fund size. Three out of four members are male, and members have been in their position within a university for about 8 years. One-fifth of trustees in large institutions earned an MBA, whereas only 14% did in smaller funds.

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<sup>13</sup>We manually check 4,555 unique firms.

<sup>14</sup>Insurance, bank, finance, partners, capital, management, real estate, property, equity, fixed income, investment, fund, casualty, ventures.

<sup>15</sup>Hedge Funds, Private Investment Management (HNWI), Asset Management (advisory, wealth management, portfolio management, mutual funds), Private Equity, Venture Capital, Real Estate, Financial (lending, savings, deposits, credit cards, leasing), Trading Services (brokers, dealers, fin-tech, trading platforms), Global Alternative Investment Firm, Financial and Legal Advisory (investment banking, consulting, law firms), Insurance.

<sup>16</sup>For example, Mr David M. Moffett sits on the investment committee of the University of Oklahoma (2011-Current). He was born in 1955, and received a Bachelor’s Degree in economics from the University of Oklahoma in 1974 and an MBA from Southern Methodist University in 1975. Mr Moffett was the CEO of Freddie Mac (2008-2009), worked as a consultant for Bridgewater Associates LP, is a trustee for Columbia Funds (2011-Current), was CFO of US Bancorp from 1993 to 2007, and worked for BSE Management LLC.

To capture trustee's expertise, we build a dummy variable that equals one if a member has been an executive, adviser, or board member in a particular industry. 41% of trustees in large funds have general finance experience, compared to 32% in smaller ones. Strikingly, 32% of members of large institutions have some direct experience in alternatives, compared to only 14% for smaller universities. When we aggregate data at the university IC level, panel B of table 4 shows that almost every institution, large or small, has at least one member with general finance experience. On the other hand, 88% of large funds have at least one hedge fund manager, compared to only 28% in smaller funds. Moreover, 97% (92%) of large endowments have at least one member with experience in private equity (venture capital), compared to only 60% (49%) for smaller funds.

#### 2.4.4 Trustees Network

We measure individual member connections as the total number of individuals with whom the trustee shares a common employment, educational, or social history in the BoardEx data set every year for each university. Specifically, we follow [Faleye et al. \(2014\)](#) and measure four different types of connections related to past and current employment, education and other activities.<sup>17</sup> The inclusions of past employment mechanically creates a time trend in the variables. Therefore, we use (the natural logarithm of 1 plus) the de-trended number of connections as our main independent variable.<sup>18</sup> We also construct measures related to first order connections to venture capital and private equity managers, as well as measures of the overall connection to both PE and VC individuals. Table 5 shows the total count for the various network measures as well as the total number of industries a member has experience with or has worked in.

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<sup>17</sup>Past employment is the sum of all first order connections through past employment, current employment is the sum of all first order connections through common current employment (excluding connection through an individual executive position at his firm/her), education is the sum of all first order connections through common education (we follow [Cohen et al. \(2008\)](#) and consider individuals graduated from the same school, within 2 years and with a similar type of degree), and other as the sum of all first order connections through social clubs, charities, sporting etc (excluding connection due to simple membership and through a university).

<sup>18</sup>First, we regress the count of all connections on a time trend and retain the residuals. Second, we create a de-trended network measure as the natural logarithm of 1 plus the residual and the absolute value of its sample minimum. Network measures are aggregated at the endowment level, and we calculate mean values in each year.

### 3 Empirical Methodology and Main Results

In this section, we explore how IC's composition and alternative investment expertise are linked to endowment asset allocation and returns. We find that higher allocations to alternatives have led to higher endowment returns, even when we extend the data to the post-crisis period. Again, this is consistent with [Barber and Wang \(2013\)](#).

We run pooled OLS (with year, public/private and state fixed effects) and do not include endowment fixed effects in the main analysis. We acknowledge that board composition is endogenous and potentially correlated with time-invariant and/or time-varying unobserved characteristics. If there exist unobserved factors common to both asset allocations and returns with board composition, then a spurious correlation arises. Endowments choose governance and their investment committee composition. Therefore, there might be unobserved endowment characteristics that drive the results.

For example, suppose high risk-taking institutions have larger average returns and higher allocations to illiquid assets. Then, suppose experts in alternative asset classes join the committee with the express purpose of providing valuable risk-management and oversight advice. We would observe that risk-taking and board composition are correlated, but there is no causal effect of board composition on allocations and returns. At the same time, there might be unobserved investment opportunities correlated with board composition, asset allocation, and returns. Then, ICs ask experts to join the board precisely when a change in asset allocation is required.<sup>19</sup> Moreover, board composition and expertise (as well as governance) do not vary much within a fund. Therefore, the inclusion of fund fixed-effects might be problematic and lead to unidentified parameters.<sup>20</sup> However, the average tenure is long, and turnover is slow. Therefore, reverse causality issues are to some extent mitigated.

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<sup>19</sup>We reduce concerns related to reverse causality by using lagged values and by focusing on a sub-sample of funds that have zero exposure to any alternative investment strategies at a given point in time but they have experts on their IC well before they enter this asset class, using data from NACUBO. The appendix provides these results.

<sup>20</sup>When we include endowment fixed effects in the regression that uses the NACUBO data, some of the coefficients on expertise still load, but their magnitude is diminished.

We consider as our primary specification:

$$y_{it} = \beta_0 + \beta_1 Expertise_{it} + \beta_2 Network_{it} + X'_{it}\Lambda + \gamma_t + \lambda_s + \epsilon_{it} \quad (2)$$

where  $y_{it}$  represents either the proportion of total assets allocated to domestic equity, fixed income, and alternatives (hedge funds, private equity and venture capital) or a measure of return. We use the proportion of members within an endowment with relevant experience in general finance, asset management, hedge funds, private equity and venture capital as our measure of  $Expertise_{it}$ . In the appendix, we use a 0/1 indicator variable that equals one if at least one member within a university has ever worked in a given industry and zero otherwise (or the natural logarithm of 1 plus the total experts in each industry), and results are similar.  $Network_{it}$  is the de-trended variable described above and could refer to either the overall network, or that related to private equity or venture capital.  $X_{it}$  represents a set of control variables related to governance, endowment size, committee size, and a 0/1 indicator variables measuring whether the university is a private or public institution. We further control for the presence of a Chief Investment Officer, since many of the results could be simply driven by the decision making process at the internal staff level. Moreover, when we control for the underlying riskiness of the university system as proxied by the proportion of the total budget supported by the endowment, results hold. We further control for a 0/1 indicator variable measuring whether the university is in the IVY league or not.  $\gamma_t$  represents a year fixed effect, which controls for unobserved heterogeneity across time (macroeconomic shocks common to all endowments) and  $\lambda_s$  represents state fixed effects to control for state-specific, time-invariant characteristics. For example, endowments in California are more likely to invest in venture capital given the long-standing history of angel investing and innovation in the Silicon Valley area.<sup>21</sup> We cluster standard errors at the endowment level to allow for correlation in the error term over time for a given fund. Table 6 shows results for the allocation to alternative investments, in general, and specifically into the subgroups related to hedge funds, venture capital, private equity, domestic equity and fixed income while table 7 and 8 show OLS and IV results when we include networks in

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<sup>21</sup>We consider alternative measures of governance and the results do not change. See the appendix for details.

the baseline specification.

### **3.1 Asset Allocation**

We first regress asset allocation on our measures of expertise, year and state fixed effects, and the controls mentioned above. Table 6 reports results for alternative investments, hedge funds, venture capital, private equity, domestic equity and fixed-income.

Focusing on alternative investments, the coefficient on the natural logarithm of total assets (size), is positive and significant at the 1% level. This is consistent with previous research on institutional investors. Larger funds can invest in alternative strategies not accessible to smaller peers. Endowments that have a CIO as part of their investment program invest 4% more in the alternative asset class than funds that do not have one. Expertise does not seem to matter much. However, when we use indicator variables that focus on the presence of at least one member with relevant expertise, we observe significant effects. Specifically, endowments with hedge fund members invest almost 3% more in hedge funds than funds that do not have any hedge fund experience. Column 2 shows the effect of size and expertise on the allocation to hedge funds. In particular, endowments in the top quartile of hedge fund representation on their board invest 4% more than funds in the bottom quartile of the distribution. Interestingly, endowments with a separate investment management company with a Chief Investment Officer do not invest more in hedge funds. This is consistent with the evidence provided in Figure 4, where allocations to hedge funds have increased across all endowments over the last decade. Easier (and possibly cheaper) access to hedge fund managers is consistent with a more widespread use of this asset class. On the other hand, endowments with a CIO invest more in private equity and more so in venture capital. Again, this is consistent with the closed and restricted nature of non-marketable alternative strategies. Column 2 also shows that members with expertise in portfolio and asset management are associated with a larger share of assets invested in hedge funds.

Columns 3 and 4 report results for venture capital and private equity investments, respectively. Again, size and the presence of a CIO matter. Endowments that have a CIO invest 1.5% more in

VC than endowments that do not. Moreover, a 10% increase in the proportion of members with expertise in VC is associated with a 0.27% larger allocation to VC. This is substantial and represents a 16% increase, given an unconditional average allocation of 1.57% to venture capital. Moreover, endowments with at least one member with expertise in VC invest 0.6% more in VC than funds that have zero members with VC experience.

Results so far indicate that sophisticated endowments invest more in alternative investments, and in particular hedge funds and venture capital. Where does this allocation shift come from? Section 2 showed that this allocation shift comes primarily from commensurate reductions in the allocations to domestic equity (active domestic equity in particular), and fixed-income. The last two columns show that part of this shift comes from larger funds investing less in domestic equity and fixed income.

Results in Table 7 show that while networks do not seem to play a role for the overall allocation to alternative investments (column 1) or hedge funds (column 2), they do show that they are correlated with a higher allocations to both venture capital (column 3) and private equity (column 4) funds. This is consistent with the restricted and closed nature of these types of investments. In particular, the magnitude is significant. Endowments in the top connection quartile invest 0.23% more in venture capital than those in the bottom connection quartile. Again, given the unconditional mean of allocation to VC, this represents a 16% increase. Similarly, top connected IC invests 0.91% more in PE than those in the bottom connection quartile. This is an increase of about 19%. To alleviate concerns about the endogeneity of network, we also estimate a 2SLS regression, where we use the number of separate industries in which a particular member has worked for in a given year. While almost mechanically correlated with the number of connections (high F-statistic in the first stage), there is no ex-ante reason to believe that fraction of IC members who hold executive positions or sit on the board of companies in many different sectors is correlated with asset allocation or returns. Moreover, given the aggregate data at the asset class level, we do not believe that being in 10 different industries is correlated with investments in hedge funds or, even, domestic equity. Table 7 uses the separate industries of members with PE and VC connections. We still find a positive and

significant relationship between network and allocation to venture capital and private equity.

The analysis above hints at the important role of the investment committee, and relates its specific investment experience and network connectedness to asset allocation decisions and associated performance. However, the exact channel through which this operates remains somewhat elusive. For example, an experienced investment committee may provide high-quality oversight and risk management, especially relevant for investment in illiquid asset classes such as venture capital and private equity. On the other hand, an experienced (and well connected) investment committee might facilitate access to restricted high-performing funds. Below, we compliment these findings with novel survey-based evidence that reinforces the conclusion that both channels are likely active.

### **3.2 Return Decomposition**

A 1\$ investment in the endowment of Bowdoin College in 2003 would have resulted in 3.86\$ in 2015. We would observe similar results if we invested in the endowment of Depauw University. However, when we account for the passive asset allocation of each institutions, Bowdoin College would outperform Depauw by more than 400 basis points. Four-fifth of Bowdoin College's gain is attributable to their alternative investments. In this section, we try to understand whether a more experienced investment committee is associated with higher returns.

We show in the appendix that 40% of the differential in total return is explained by the “*selection*” component, while the remaining part relates to each individual fund's policy asset allocation. Moreover, “*selection*” explains about 46% of the variation in total return in the cross-section. Does a more experienced investment committee help? Table 9 reports results from pooled OLS, where columns (1) through (4) report results related to total net return, market timing, selection and active return for the overall portfolio. Again, we stress the fact that most respondents to the NCSE provide detailed asset allocation within each category. However, the return for each category is not always disclosed. Therefore, we compute the third term of Equation 1 as a residual quantity, after accounting for the passive and market timing return components. Later, we consider a sub-sample of endowments that provide detailed asset allocation and return within the alternative asset class.

Table 9 shows that a 10% increase in expertise in hedge funds is correlated with a 18 basis points increase in the *active* return component. Approximately 10 basis points come from the timing component (which includes asset allocation decisions). Results are robust if we follow [Dimmock \(2012\)](#) and use total gifts as an instrument for size. Results are robust to any other specification and inclusion of additional controls and fixed effects. These results show that there is a direct and positive correlation between investment committee expertise and the contribution to performance attributable to *selection* and overall *active* return (where the latter is again the sum of the timing and selection components). These results indicate that, on average, endowment fund returns likely benefit from seeking out investment experts as members of the IC and then utilizing their expertise in the manager selection process. Experienced investment committee members could facilitate access to highly performing funds, which are otherwise hard to access. Moreover, the endowment could benefit from an effective committee that provides leadership for and accountability to a university's investment program.

We next consider a sub-sample of funds for which we have detailed asset allocation and returns for real estate, hedge funds, commodities, private equity and venture capital, and we perform the return decomposition of Equation 1. We therefore compute a measure of selection and active returns at the alternative investment level. Column (5) through (7) show that venture capital experts are the only members who are positively and significantly associated with the alternative investment returns. In particular, a 10% increase in the proportion of VC expertise on the board is associated with 120 (130) basis points increase in the selection (overall active) return due to alternatives. This is consistent with [Sensoy et al. \(2014\)](#). They find that the superior performance of endowment investors in the 1991-1998 period, documented by prior literature, is mostly due to their greater access to the top-performing venture capital partnerships.

### 3.3 Use of Funds

NACUBO provides data on the number of separate firms that an endowment employs for the management of domestic equity, fixed income, international equities, and alternative strategies. In particular, the survey splits alternative strategies into *direct* and *funds of funds*. Alternative strategies include both marketable alternative (such as hedge funds) and non-marketable alternatives (such as private equity, venture capital, and real assets). For the period 2007-2010, we also have more specific information regarding the use of *direct* hedge funds.

We conjecture that a more experienced investment committee, in particular venture capital and private equity managers, provide easier *direct* access to alternative investment funds. Therefore, we regress the number of separate firms used in the management of an asset class on the natural logarithm of total assets (logsize), experience and all the controls used in section 3. We use a negative binomial regression to accommodate the type of data (count-based), and given that the distribution is highly right-skewed. Results are qualitatively robust to different econometric specifications, such as poisson or simple OLS.

Table 10 reports marginal coefficient estimates. Interestingly, the coefficient on the 0/1 indicator variable measuring whether the endowment has at least one member with experience in alternatives is positive and significant at the 1% level for the *direct* alternative investments category. On the other hand, experience does not matter for funds of alternative investment funds.<sup>22</sup> Using data from BoardEx, the presence of at least one member with experience in VC or PE on the investment committee is correlated with greater access to direct funds. Unfortunately, we do not have data on the usage of private equity and venture capital funds. Again, the presence of a CIO matters for access to *direct* investments in the alternative asset class, while there is no relationship whatsoever in the use of funds of alternative funds or hedge funds.

Overall, these results are consistent with the view that a more experienced investment committee facilitates *direct* access to hard to get alternative investment funds. The fact that VC and PE

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<sup>22</sup>In the appendix, we show that the coefficient on IC experience is of very small magnitude in every specification with domestic equity, fixed-income, and international equity as dependent variables.

members matter the most is at least suggestive of a link between investment committees and access to high-performing VC and PE funds.

## **4 Evidence from a Survey**

Given the evidence presented above, a few questions linger. What, specifically, is the role of the investment committee in the investment process, asset allocation, selection of fund managers, and liquidity advice? Second, does the committee facilitate access to certain type of restricted investments and does this translate into superior performance? Finally, what is the role of governance and how involved is the committee in performance evaluation and bench-marking? The results in the previous sections demonstrate a positive correlation between expertise and allocation to alternative investments and performance. Moreover, networks and connections might facilitate access to closed and restricted funds. However, there is no definitive answer as to the particular channels through which these effects are operating.

To shed light on many of these questions, we surveyed more than 100 CIOs, CFOs, controllers, and investment committee members, and ask a variety of quantitative and qualitative questions related to the interaction between the investment committee and the investment staff (in-house or outsourced CIO). These represent almost 20% of the overall number of university endowments surveyed in the NACUBO-Commonfund Study of Endowment, and more than 60% of total market value as of 2015. Almost 60% of the respondents are CIOs, CFOs, or senior investment directors. Committee members and controllers make up the remaining 40%. One-third of the endowments are managed by an internal investment office distinct from the finance office, while another one-fifth is managed by an outsourced CIO. Most of the responding institutions (64%) rely on the Investment Committee of the Board as the main governing and oversight body of the investment program.

## **4.1 Duties and Roles of the Investment Committee**

Most of the respondents (60%) agree that the investment committee is not involved in the day-to-day investment management process. Healthy interaction outside regularly scheduled meetings is common (1-3 times per month), and the larger the fund, the more frequent is this interaction. The median endowment that interacts 1-3 times per month has total assets of about \$286 million, versus only \$60 million for those with less than one interaction per month.

A clear and balanced delineation of responsibilities and division of powers helps achieve many of the investment goals of the endowment. Almost all respondents agree that the investment committee is pivotal in determining the fund's strategic asset allocation. This is part of the investment policy statement and is reviewed periodically to ensure that the risk risk-return trade-off and liquidity profile of the fund are in line with its mission. Investment committees mostly oversee the investment process, set ranges, spending from the endowment, and in many cases approve investments in alternative strategies. The investment committee is often involved in determining the tactical asset allocation, although to a lesser extent than the strategic asset allocation.

Although more frequent interactions happen in larger endowments, the investment committee of smaller endowments holds a significant amount of the overall power. For example, small endowments (median of \$68 million) interview and approve managers as well as terminate managers with (\$135 million) or without (\$102 million) consultant recommendations. On the other hand, staff has full discretion to hire managers for the median endowment with total assets of about \$638 million.

## **4.2 Investment Committee, Expertise, and Access to Investments**

Although no definitive explanation on the exact channels through which an experienced investment committee helps in shaping asset allocations and, ultimately, investment performance, is identified, most respondents argue that a competent IC has an overall positive impact on returns. Whenever possible, endowments try to identify individuals with specialized knowledge in illiquid

asset classes (hedge funds, private equity, venture capital funds) and with experience in asset management and portfolio construction. Moreover, the CIOs may work closely with a particular member who has expertise in an area the endowment is looking to invest (hedge fund managers, private equity GP/LP, etc.). Further, many small liberal art colleges note that they find it hard to access the pool of investment experts, given that non-trustees cannot sit on the committee, nor are professionals as willing to join a committee far from financial hubs.

[Sensoy et al. \(2014\)](#) find that the superior performance of endowment investors in the 1991-1998 period is mostly due to their greater access to the top-performing venture capital partnerships. In particular, the ability to pick the right partner in private illiquid asset classes, which rely heavily on active management, is one of the characteristics that determine whether a fund will be in the top or bottom quartile of the return distribution ([Swensen \(2009\)](#)).

Do investment committees matter? Do they assist with access to new relationships or difficult to access funds? On this point, results from the survey are mixed. Over half of the respondents confirm that the large majority of interactions between the investment staff and the committee involves one or two committee members. Similarly, over one-third respond that most committee members interact with senior investment staff in some manner. Once again, investment committees seem to be more proactive for large funds. In fact, the mean (median) endowment in which investment committee members occasionally (1-2 times per year) facilitate access to investment opportunities that would otherwise be difficult to undertake (e.g. closed or restricted funds) has assets of about \$435 (\$453) million. These funds represent approximately one-fifth of the sample. The mean (median) endowment that never facilitate access has assets for \$221 (\$76) million.

In some cases, for example, investment committee members have network connections with leading fund managers in the alternative investments asset class (private equity, venture capital, hedge funds). Survey respondents indicate that these connections have occasionally helped the endowment gain a larger allocation to restricted funds, which have proven to be top performers in the portfolio. In other cases, IC members suggest managers and help the fund get into investments that are otherwise hard to access. On the other hand, without a proper due diligence process, some

IC members have suggested funds which have later on proven to be disastrous. In many other cases, the interaction is limited to normal meetings with CIOs (or outsourced CIOs) and the committee focuses primarily on oversight and policy level issues. However, almost half of the respondents strongly agree that the fund's investment process benefits substantially from the expertise of the committee. Committee members that are investment professionals can provide valuable comments and advice on managers, without necessarily pursuing investments in a particular asset class.

To understand the drivers, be it access to funds or simply the general beneficial impact, we consider a subset of questions in our survey. First, we ask: "How often do committee members facilitate access to investment opportunities that would otherwise be difficult to identify or undertake (e.g., closed or restricted funds)?" (Frequently (more than 2 times per year), Occasionally (1-2 times per year), Rarely (less than 1 time per year), Never, Do not know). Second, "How often do committee members provide information on potential investment recommendation to the investment staff?" (Never, rarely, occasionally and frequently). Third, we ask "Historically, in your opinion, what impact has the committee had on the fund's investment performance?" (Very positive impact on returns, Somewhat positive impact on returns, No meaningful impact on returns, Somewhat negative impact on returns, Very negative impact on returns, Do not have an opinion). Third, "Do you agree or disagree with the following statement: The fund's investment process and decisions benefit substantially from the expertise of the committee" (Strongly agree, Somewhat agree, Neither agree nor disagree, Strongly disagree). We assign value of 1 to 4 (where 1 indicates the negativity such as *never* or *very negative impact*, and 4 indicates positive responses such as *frequently* or *very positive impact*). Table 11 reports results from an ordered probit model of the impact of size, network and expertise on access, recommendation, benefit, and impact. Columns (1) and (3) indicate that there is a strong and positive relationship between IC networks and the frequency with which the IC helps with access to closed or restricted high-performing funds. General expertise does not seem to matter as much here.

## 5 Conclusions

Using data on endowment returns, asset allocation, and investment committees from NACUBO and BoardEx, we evaluate the effects of expertise and networks on endowment investment decisions and performance. In light of the recent shift in asset allocation towards alternative investments such as hedge funds, private equity and venture capital funds, we find that ICs in the top expertise quartile are associated to higher allocation to alternative investments, particularly hedge and venture capital funds. Network connections of board members also have an important role for asset allocation, particularly for the hard to access venture capital and private equity spaces. With respect to portfolio returns, expertise matters for the return components related to active management component, particularly suggesting an important role for manager selection. Finally, using unique responses from a survey of endowment CIOs that we conduct, we find that networks (especially connections to PE and VC managers) are correlated with more frequent recommendations of and access to restricted and closed funds.

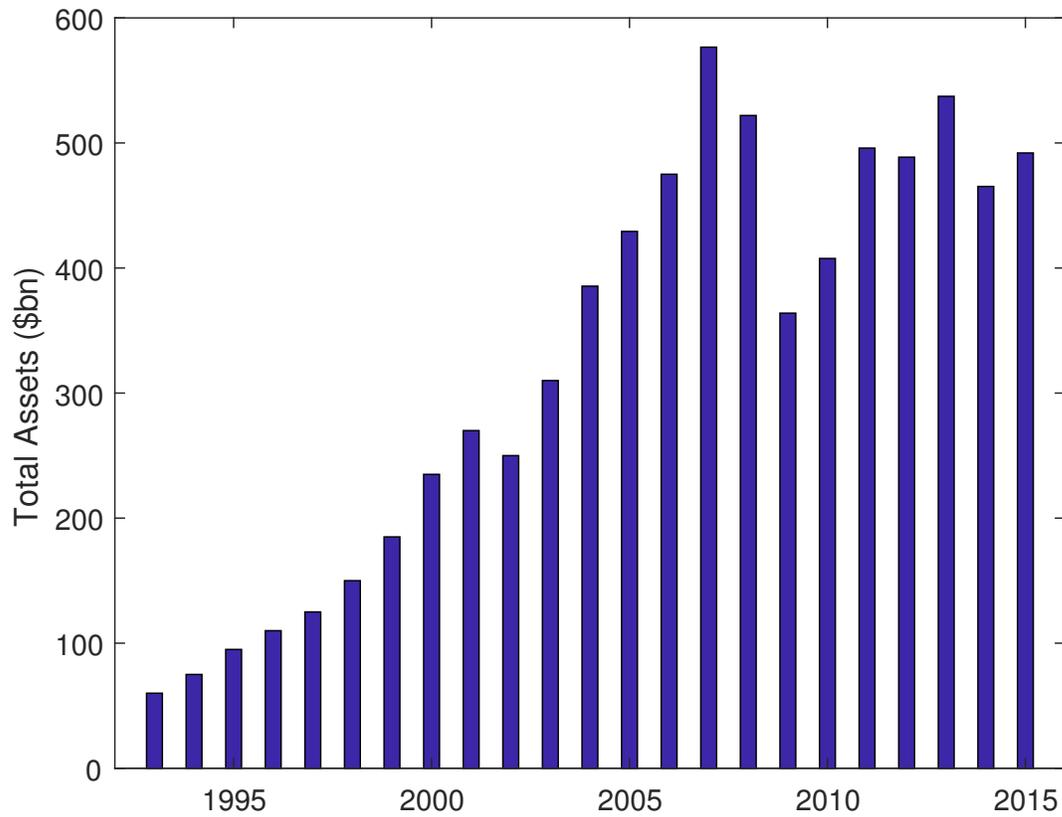
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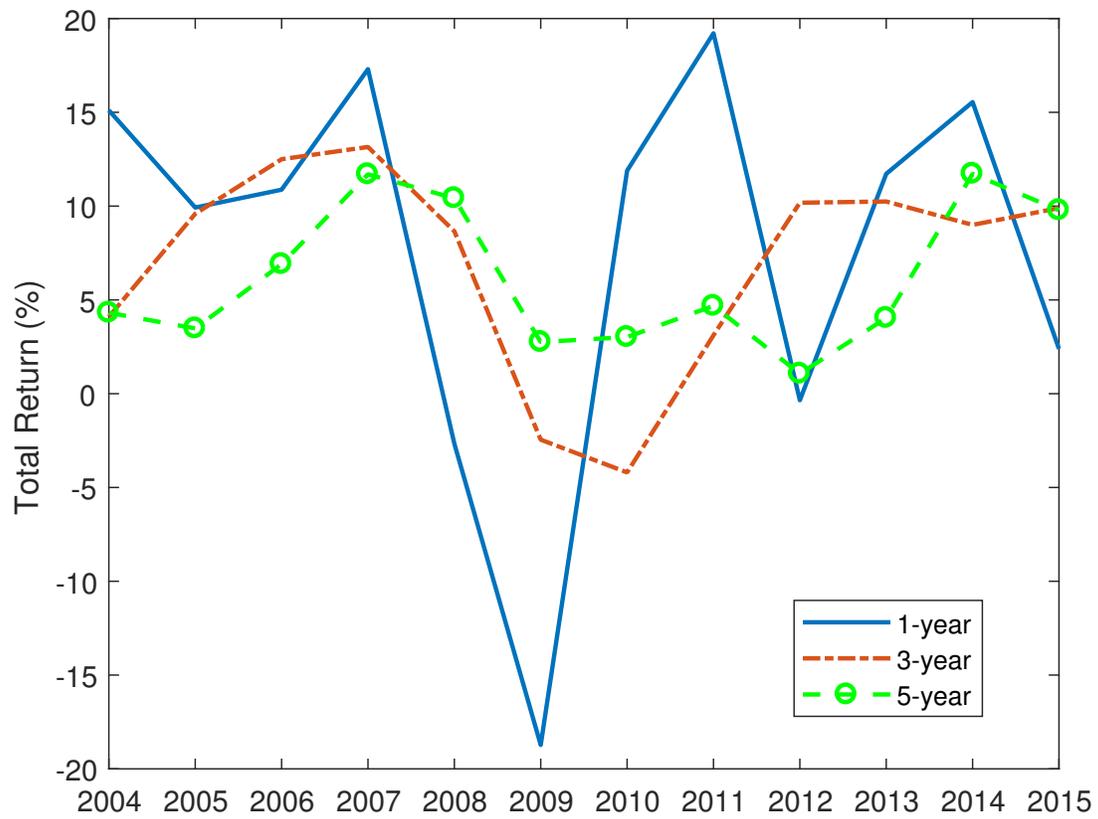
**Figure 1: Total Assets**

This figure shows total assets under management (in \$ billion) for U.S. university endowments from 1993 to 2015 from NACUBO.



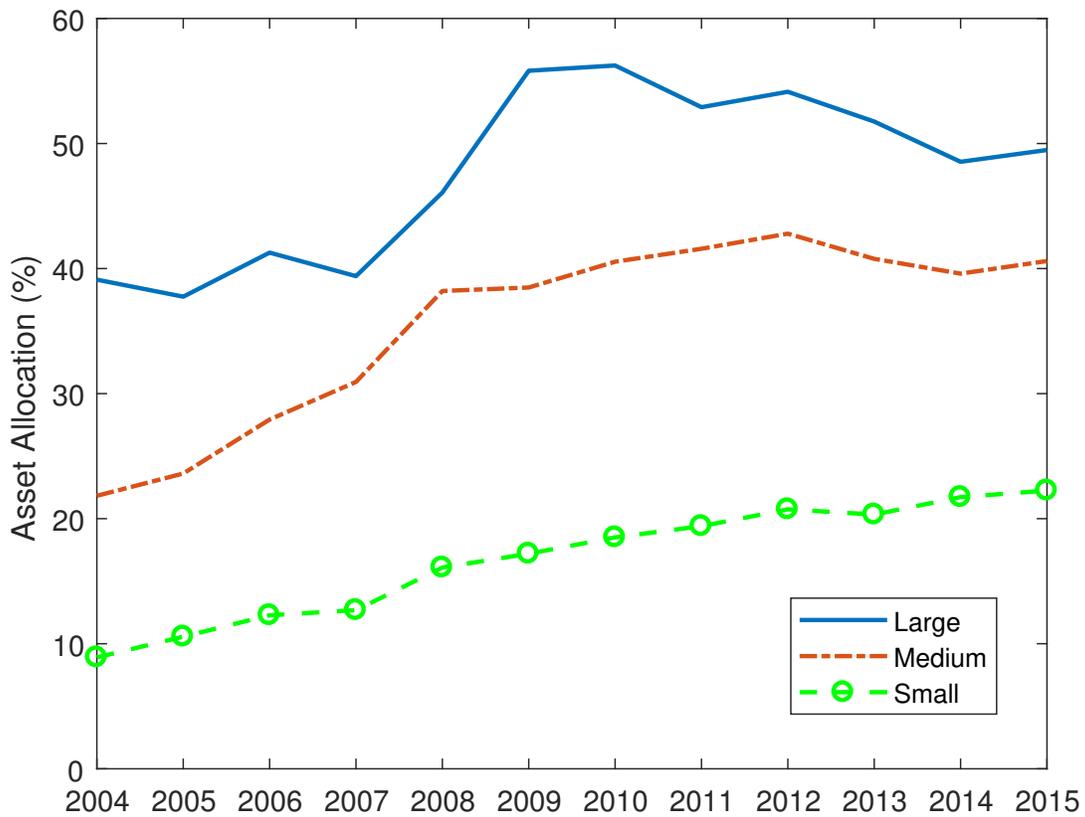
**Figure 2: Total Net Return**

This figure shows 1-, 3-, and 5-years total net return (in %) averaged across U.S. university endowments from 2004 to 2015 from NACUBO.



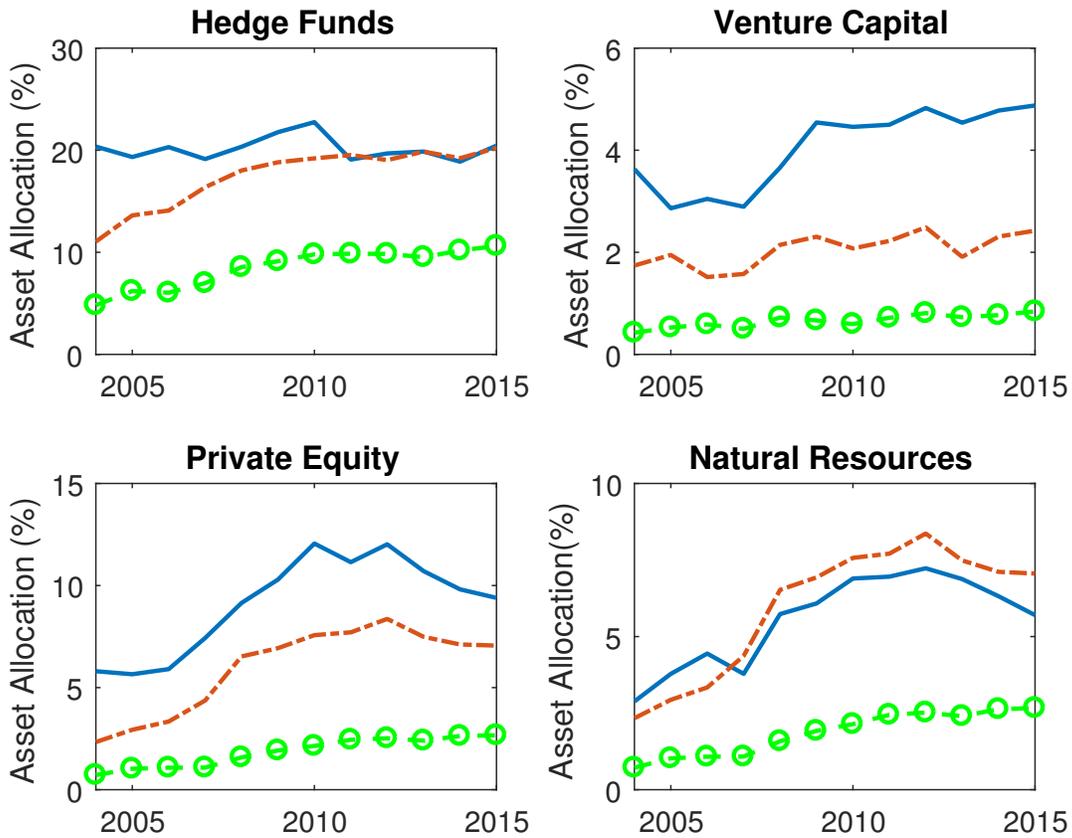
**Figure 3: Alternative Investments**

This figure shows the proportion of total assets allocated to alternative investments for U.S. university endowments from 2004 to 2015 by size. These includes real estate, private equity, venture capital funds, commodities, and hedge funds. Large endowments have more than \$1 billion of total assets, medium between \$250 million and \$1 billion, and small less than \$250 million.



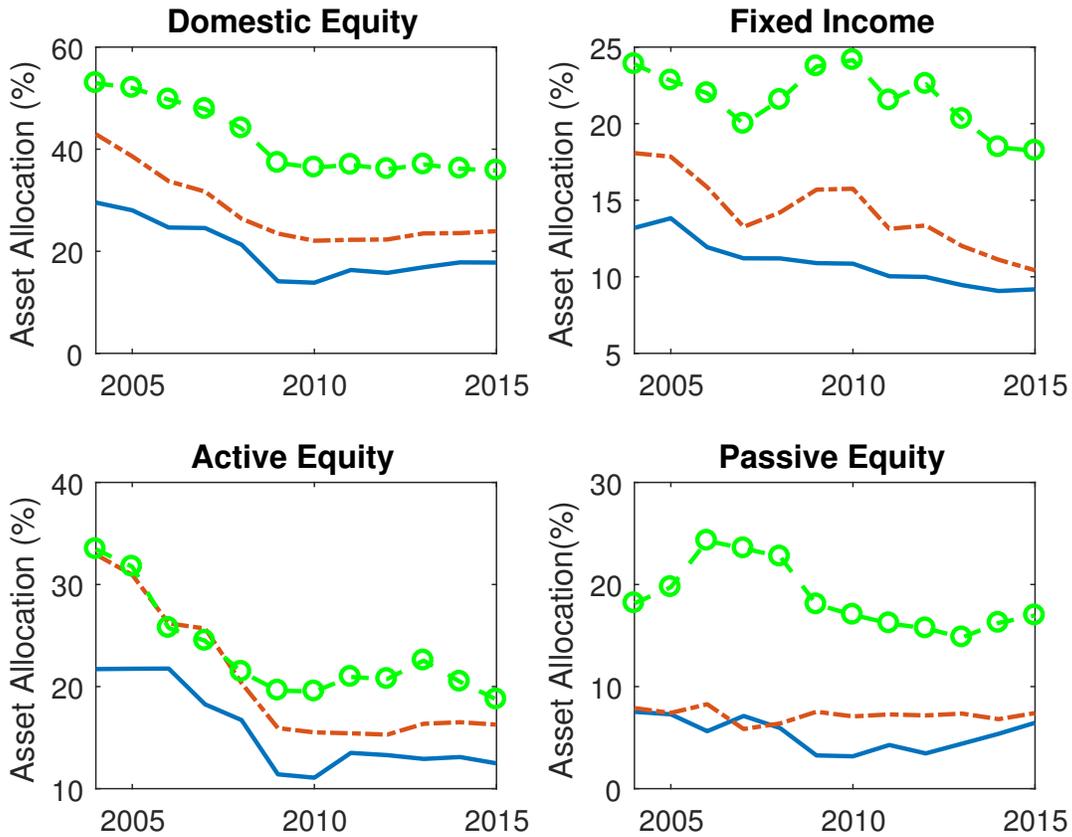
**Figure 4: Alternative Investments - By Category**

This figure shows the separate proportions of total assets allocated to hedge funds, venture capital funds, private equity, and commodities for U.S. university endowments from 2004 to 2015 by size. Large endowments have more than \$1 billion of total assets, medium between \$250 million and \$1 billion, and small less than \$250 million. Hedge funds include absolute return, market neutral, long/short, 130/30 strategies, event driven, and derivatives. Private equity includes LBOs, mezzanine, M&A, and international private equity. Commodities include energy and natural resources (oil & gas and timber) and commodity managed futures.



**Figure 5: Domestic Equity and Fixed Income**

This figure shows the separate proportions of total assets allocated to domestic equity, fixed income, active domestic equity and passive domestic equity for U.S. university endowments from 2004 to 2015 by size. Large endowments have more than \$1 billion of total assets, medium between \$250 million and \$1 billion, and small less than \$250 million. Domestic equity includes active, index (passive/enhanced), Commonfund Multi-strategy Equity Fund, and other Multi-strategy Equity Funds. Fixed income includes active and passive domestic and international, investment grade and non-investment grade securities, emerging markets, Commonfund Multi-strategy Bond Fund, and other Multi-strategy Bond Funds.



**Table 1: Summary Statistics**

This table reports the number (N), mean, standard deviation, 25th, 50th, and 75th percentiles for university endowments related to cash flows and spending, use of funds and governance. The sample period is from 2004 to 2015. Size is the total endowment assets (\$M), total gifts is the total individual gifts and bequests (\$M), life income and annuities include charitable remainder trusts, gifts annuities, pooled income funds and donor advised funds, additions are total inflows (restricted and unrestricted gifts and investment income), and withdrawals are outflows (distribution for spending, investment management and custody expenses, non-recurring expenses) from the endowment. Use of funds refers to the total number of separate firms that the endowment currently uses for the management of domestic equity, fixed income, international equity, and alternative investments. Governance variables include the total number of voting members on the investment committee, the number of non-trustees, investment professionals, experts in alternative investment strategies, alumni, the percentage of alternative specialist and non-alternative specialist on the investment committee.

	N	Mean	SD	P25	Median	P75
<i>Cash Flows and Spending</i>						
Size (\$M)	7,960	501.21	(1925.33)	37.20	96.49	301.24
Total Gifts (\$M)	7,960	8.67	(24.12)	0.53	2.00	6.22
Life Income and Annuity (\$M)	5,679	13.50	(62.30)	0.12	1.72	8.47
Additions to Endowment (\$M)	5,675	32.42	(185.76)	1.02	6.49	23.89
Withdrawals to Endowment	5,675	20.61	(79.73)	1.16	3.72	12.93
Budget (%)	6,328	9.91	(16.64)	1.00	3.84	10.57
Objective Return (%)	3,274	7.72	(1.48)	7.00	8.00	8.50
Spending Rate (%)	7,729	4.45	(1.99)	3.82	4.50	5.00
<i>Use of Funds (%)</i>						
Domestic Equity	6,563	0.26	(0.15)	0.14	0.25	0.33
Fixed Income	6,563	0.17	(0.11)	0.08	0.16	0.25
International Equity	6,563	0.17	(0.10)	0.10	0.17	0.23
Direct Alternative	6,563	0.26	(0.27)	0.00	0.19	0.47
Fund of Alternative	6,563	0.14	(0.14)	0.00	0.11	0.21
<i>Governance and Experience</i>						
Investment Committee Size	7,264	8.14	(3.38)	6.00	8.00	10.00
# of Non-Trustees	6,105	1.37	(2.33)	0.00	0.00	2.00
# of Investment Professionals	7,255	3.92	(3.06)	2.00	3.00	6.00
# of Alternative Specialists	5,969	2.40	(2.47)	1.00	2.00	3.00
# of Alumni	4,899	4.26	(3.51)	1.00	4.00	6.00
IC Alts	5,502	0.32	(0.27)	0.13	0.29	0.50
IC Non-Alts	5,470	0.21	(0.22)	0.00	0.17	0.33

**Table 2: Asset Allocation and Returns**

This table reports the 25th, 50th, and 75th percentiles for U.S. university endowment asset allocation, return and return decomposition from 2004 to 2015 by size from NACUBO. Large endowments have more than \$1 billion of total assets, medium between \$250 million and \$1 billion, and small less than \$250 million. Panel A reports asset allocations. Domestic equity includes active, index (passive/enhanced), Commonfund Multi-strategy Equity Fund, and other Multi-strategy Equity Funds. Fixed income includes active and passive domestic and international, investment grade and non-investment grade securities, emerging markets, Commonfund Multi-strategy Bond Fund, and other Multi-strategy Bond Funds. Hedge funds include absolute return, market neutral, long/short, 130/30 strategies, event driven, and derivatives. Private equity includes LBOs, mezzanine, M&A, and international private equity. Commodities include energy and natural resources (oil & gas and timber) and commodity managed futures. Real Estate excludes REITS. Panel B reports the 25th, 50th, and 75th percentiles for total return (net of fees), domestic equity, fixed income, alternative investments, real estate, venture capital, private equity, commodities, and hedge funds returns. Panel C reports the 25th, 50th, and 75th percentiles for passive, timing and selection total returns and alternative investment returns. Total return can be decomposed as  $\sum_{j=1}^N w_{i,j,t-1}^B r_{j,t}^B + \sum_{j=1}^N (w_{i,j,t} - w_{i,j,t-1}^B) r_{i,j,t}^B + \sum_{j=1}^N w_{i,j,t} (r_{i,j,t} - r_{j,t}^B)$  where  $R_{i,t}$  is the total return (net of fees) for fund  $i$  at time  $t$ ,  $w_{i,j,t}$  and  $w_{i,j,t-1}^B$  are the actual and policy weights for endowment  $i$  and asset class  $j$ ,  $r_{i,j,t}$  is the total return for asset class  $j$  for endowment  $i$  at time  $t$ , and  $r_{j,t}^B$  is the return on a commonly used benchmark for asset class  $j$  at time  $t$ .

	All		Large		Medium		Small			
	Median	P25	Median	P75	P25	Median	P75	P25	Median	P75
<b>Panel A: Asset Allocation</b>										
Domestic Equity	33.53	11.50	17.65	24.80	17.94	24.20	33.76	27.20	39.54	51.55
Fixed-Income	17.80	6.47	9.93	13.94	8.64	13.00	17.70	14.40	20.43	27.60
International Equity	16.70	13.76	17.66	21.40	14.31	18.50	22.30	9.09	15.90	20.98
Alternative Investments	21.68	38.30	50.60	60.30	25.00	36.90	48.69	4.00	14.83	28.00
Real Estate	1.50	2.58	4.80	7.10	0.38	2.20	4.50	0.00	0.46	3.70
Venture Capital	0.00	1.75	4.09	6.39	0.00	1.20	3.46	0.00	0.00	0.70
Private Equity	2.60	6.29	9.00	12.60	2.61	5.59	9.40	0.00	0.70	4.00
Commodities	2.40	3.04	6.09	9.14	0.30	4.00	7.10	0.00	1.10	4.80
Hedge Funds	15.00	17.00	22.70	28.50	13.40	20.10	26.98	3.98	11.00	19.26

	All		Large		Medium		Small			
	Median	P25	Median	P75	P25	Median	P75	P25	Median	P75
<b>Panel B: Returns</b>										
Total Return	10.90	3.49	12.50	17.60	1.10	11.50	15.89	0.20	10.40	15.19
Domestic Equity	13.00	3.71	15.60	22.52	3.52	14.11	22.60	1.10	12.10	21.66
Fixed Income	5.00	2.00	5.24	7.40	1.34	4.80	7.50	1.45	5.00	7.23
Alternative Investments	6.95	5.10	11.03	16.43	1.60	9.62	13.90	-2.20	5.42	11.80
Real Estate	6.60	2.40	9.89	16.70	-0.25	7.46	14.70	-6.00	4.55	12.41
Venture Capital	8.90	5.37	12.70	23.25	1.34	8.38	17.90	0.38	8.00	16.20
Private Equity	10.74	7.55	14.92	21.57	4.40	11.00	18.20	2.14	9.59	16.29
Commodities	6.80	-1.09	9.11	21.50	-4.71	7.78	18.90	-8.00	5.33	16.60
Hedge Funds	7.10	2.47	9.70	13.30	1.20	8.08	12.04	-0.23	6.20	10.30
<b>Panel C: Return Decomposition</b>										
<i>Total Return</i>										
Passive	9.86	-0.33	10.28	15.61	-1.58	9.96	14.69	-1.39	9.70	14.93
Timing	0.36	0.04	0.43	1.02	-0.11	0.39	1.09	-0.18	0.34	0.98
Selection	0.56	-0.56	1.23	3.15	-1.28	0.80	2.55	-1.62	0.31	2.04
<i>Alternative Investment Return</i>										
Passive	9.50	2.85	10.82	16.17	1.24	10.25	14.92	1.08	9.12	13.75
Timing	0.08	-0.14	0.22	0.90	-0.33	0.17	0.99	-0.23	0.01	0.97
Selection	0.02	-0.98	1.37	4.12	-2.32	0.85	3.86	-5.02	-0.82	2.83

**Table 3: Asset allocation, return decomposition and IC expertise**

Panel A reports the mean and median values for variables related to investment committee governance and expertise for U.S. university endowment from 2004 to 2015. Large funds have total assets greater than \$ 1 billion, medium funds between \$ 1 billion and \$ 250 million, and small funds have less than \$ 250 million. Investment committee size is the total number of members, non-trustees is the number of voting members that are non-trustees, investment professionals is the number of voting members that are investment professionals (involved in finance, investments, banking or investment banking), alternative specialists is the number of voting members with specific experience in alternative strategies, alumni is the number of alumni on the investment committee, conflict - senior staff is the proportion of endowments that have a conflict of interest policy in place that applies to senior staff, conflict - board is the proportion of endowments that have a conflict of interest policy in place at the board of trustee level, conflict - IC is the proportion of endowments that have a conflict of interest policy in place at the investment committee level. Panel B reports mean values for the proportion of total asset allocated to domestic equity, fixed income, alternative investments, hedge funds, and private equity, total return (net of fees), passive return, active return, market timing, and “selection” for U.S. university endowments from 2004 to 2015 by investment committee expertise and size. >0.7 (<0.3) includes those funds for which investment committees have more than 70% (less than 30%) of their voting members categorized as alternative investment experts.

	Large		Medium		Small	
	Mean	Median	Mean	Median	Mean	Median
<b>Panel A: Investment Committee - Summary Statistics</b>						
Investment Committee Size	9.62	9.00	8.91	9.00	7.76	7.00
# of Non-Trustees	2.58	1.00	1.72	0.00	1.14	0.00
# of Investment Professionals	6.80	7.00	5.22	5.00	3.25	3.00
# of Alternative Specialists	4.76	4.00	3.32	3.00	1.83	1.00
# of Alumni	6.82	7.00	5.85	6.00	3.59	3.00
IC Experience	0.51	0.50	0.41	0.38	0.27	0.22
Conflict - Senior Staff	0.94	1.00	0.95	1.00	0.92	1.00
Conflict - Board	0.89	1.00	0.97	1.00	0.98	1.00
Conflict - IC	0.77	1.00	0.75	1.00	0.63	1.00
	> 0.7	< 0.3	> 0.7	< 0.3	> 0.7	< 0.3
<b>Panel B: Investment Committee Expertise, Asset Allocation and Returns</b>						
Domestic Equity	15.58	21.32	21.76	29.87	38.20	41.56
Fixed Income	8.43	11.75	10.79	15.08	20.40	22.17
Alternatives	54.42	45.27	45.10	32.85	20.34	16.01
Hedge Funds	22.41	20.08	22.90	17.20	18.80	11.31
Private Equity	11.89	8.88	7.81	6.15	3.73	2.43
Total Return	11.49	8.59	8.32	7.34	6.08	7.86
Passive Return	8.88	7.43	6.79	6.61	5.24	7.34
Active Return	2.61	1.16	1.53	0.73	0.84	0.52
Timing	0.53	0.39	0.74	0.50	0.61	0.37
Selection	2.08	0.77	0.79	0.23	0.23	0.15

**Table 4: Summary Statistics - BoardEx**

Panel A reports the mean for individual trustee background, education and expertise for university endowments from BoardEx. The sample period is from 2007 to 2015. Trustee background refers to the average age, gender and tenure of each individual member. Trustee education refers to professional certifications (CFA, CPA) or other education attainment such as MBA or JD. Trustee expertise refers to the proportion of individuals who have relevant experience in finance (general banking or insurance), asset management, hedge funds, global alternatives, private equity, venture capital, real estate and commodity. The table reads this way: 41% of individual members have general finance experience for large funds, while only 32% for smaller funds. Panel B reports the mean level of expertise aggregated at the endowment level. The table reads this way: 88% of large endowments have at least one member with experience in hedge funds, while only 28% of small endowments do.

	Large	Medium	Small
<b>Panel A: Summary Statistics - Individuals</b>			
<i>Trustee Background</i>			
Age	66.72	66.41	65.83
Gender	0.76	0.78	0.79
Tenure	8.93	8.22	7.49
<i>Trustee Education</i>			
MBA	0.22	0.20	0.14
CFA	0.01	0.01	0.00
CPA	0.03	0.04	0.06
JD	0.11	0.08	0.06
<i>Trustee Individual Expertise</i>			
Finance (Non-Investments)	0.41	0.39	0.32
Asset Management	0.12	0.10	0.07
Alternatives	0.32	0.24	0.14
Hedge Funds	0.07	0.04	0.02
Global Alternatives	0.03	0.02	0.01
Private Equity	0.17	0.12	0.07
Venture Capital	0.09	0.06	0.05
Real Estate	0.12	0.08	0.07
Commodity	0.09	0.06	0.05
<b>Panel B: Summary Statistics - Endowments</b>			
<i>Endowment Expertise</i>			
Finance (Non-Investments)	0.98	0.97	0.91
Asset Management	0.99	0.87	0.62
Alternatives	0.97	0.95	0.81
Hedge Fund	0.88	0.64	0.28
Global Alternatives	0.51	0.35	0.17
Private Equity	0.97	0.92	0.60
Venture Capital	0.92	0.79	0.49
Real Estate	0.98	0.86	0.67
Commodity	0.94	0.77	0.58

**Table 5: Summary Statistics - Network**

This table reports the mean and the 25th and 75th percentiles for the various measure of the network for university endowments from BoardEx. The sample period is from 2007 to 2015. Total connections is the total count of individuals to which a member is connected via past and current employment, education, and other activities. PE, VC and PE & VC networks relate to the total count of connections of a member to individuals with private equity or venture capital expertise. Total industries relate to the total number of separate industries in which a member has had expertise.

	Large			Medium			Small		
	P25	Mean	P75	P25	Mean	P75	P25	Mean	P75
<i>Network</i>									
Total Connections	635.81	855.58	1043.07	475.93	688.02	876.77	305.91	490.06	633.96
Past Employment	324.33	435.33	525.36	242.07	383.88	502.69	127.00	266.41	361.33
Current Employment	67.10	95.66	117.85	50.19	83.51	108.21	30.80	58.07	76.36
Education	220.15	326.41	424.52	173.45	242.41	287.13	115.21	211.06	275.60
Other Activities	45.45	101.80	139.88	31.83	88.97	125.86	15.00	73.20	99.88
PE Network	35.83	67.37	88.63	25.40	48.99	63.75	14.40	30.54	37.50
VC Network	49.21	80.53	100.93	32.75	61.46	75.07	20.00	43.43	52.13
PE & VC Network	45.18	80.66	105.35	31.64	58.67	76.26	18.00	36.52	45.94
<i>Industry</i>									
# Total Industries	8.38	9.90	11.11	7.00	8.36	9.54	5.50	7.00	8.22
# Industries of PE	4.97	6.28	7.53	3.83	5.13	6.06	2.62	3.74	4.58
# Industries VC	5.25	6.35	7.26	4.10	5.25	6.12	2.83	3.95	4.80
# Industries PE & VC	5.38	6.74	7.92	4.27	5.55	6.46	2.92	4.07	5.00

**Table 6: Asset allocation and Expertise**

This table reports OLS regression results of the relationship between the share allocated to alternative investment strategies, hedge funds, venture capital funds, private equity funds, domestic equity, fixed income, and some university endowment specific variables. Independent variables are the natural logarithm of total assets (logsize), board size, the proportion of trustees with experience in hedge fund, private equity, venture capital, general finance and portfolio management, whether the endowment uses a CIO, and a 0/1 indicator measuring whether the university is public or private. Year and state fixed effects are included. Standard errors are clustered at the endowment level. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

	Alternatives	Hedge Funds	Venture Capital	Private Equity	Domestic Equity	Fixed Income
Log(Size)	8.10*** (0.43)	3.20*** (0.34)	0.60*** (0.15)	2.01*** (0.24)	-5.26*** (0.35)	-2.98*** (0.28)
Board Size	0.22 (0.88)	0.36 (0.69)	0.20 (0.24)	0.14 (0.31)	-0.76 (0.78)	-0.05 (0.50)
Finance (Non-Investments)	-4.28 (2.88)	-2.34 (2.36)	0.14 (0.57)	-2.97*** (0.94)	2.94 (2.37)	1.92 (1.69)
Asset Management	0.85 (5.70)	6.28 (4.72)	-0.74 (1.15)	-2.03 (2.55)	-2.82 (4.72)	1.86 (3.22)
Hedge Funds	10.86 (10.03)	18.21*** (6.02)	-1.13 (1.77)	-1.46 (3.61)	-2.96 (6.26)	-1.22 (4.69)
Venture Capital	1.57 (7.33)	6.86 (6.11)	2.67** (1.33)	-4.18 (3.00)	-0.58 (5.79)	0.59 (3.79)
Private Equity	-0.78 (5.16)	-2.80 (4.06)	0.22 (1.10)	4.65** (2.27)	2.38 (3.81)	1.39 (3.15)
CIO = 1	3.82*** (1.39)	-0.54 (0.95)	1.39*** (0.35)	2.03*** (0.62)	-1.29 (1.09)	-1.18 (0.75)
Public = 1	-1.17 (1.46)	1.62 (1.21)	-0.28 (0.27)	-0.69 (0.51)	1.12 (1.10)	1.70** (0.77)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,121	2,689	2,689	2,689	3,121	3,121
R-squared	0.58	0.35	0.31	0.40	0.42	0.36

**Table 7: Asset allocation and Networks**

This table reports OLS regression results of the relationship between the share allocated to alternative investment strategies, hedge funds, venture capital funds, private equity funds, domestic equity, fixed income, and some university endowment specific variables. Independent variables are the natural logarithm of total assets (logsize), board size, the network measure, the proportion of trustees with experience in hedge fund, private equity, venture capital, general finance and portfolio management, whether the endowment uses a CIO, and a 0/1 indicator measuring whether the university is public or private. Year and state fixed effects are included. Standard errors are clustered at the endowment level. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

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	Alternatives	Hedge Funds	Venture Capital	Private Equity	Domestic Equity	Fixed Income
Log(Size)	8.11*** (0.44)	3.22*** (0.34)	0.58*** (0.15)	1.97*** (0.24)	-5.27*** (0.36)	-2.93*** (0.28)
Board Size	-0.04 (0.92)	0.33 (0.72)	0.18 (0.25)	-0.17 (0.32)	-0.38 (0.78)	-0.12 (0.52)
Network	0.47 (0.58)	-0.28 (0.50)	0.21** (0.10)	0.82*** (0.23)	-0.47 (0.51)	-0.17 (0.35)
Finance (Non-Investments)	-4.14 (2.90)	-2.40 (2.36)	0.16 (0.57)	-2.71*** (0.95)	2.27 (2.38)	2.50 (1.67)
Asset Management	0.62 (5.70)	6.61 (4.75)	-0.90 (1.12)	-2.54 (2.50)	-2.46 (4.74)	1.41 (3.20)
Hedge Funds	9.95 (10.01)	18.15*** (5.99)	-1.21 (1.79)	-2.35 (3.56)	-2.65 (6.28)	-0.83 (4.64)
Venture Capital	0.66 (7.39)	6.33 (6.12)	2.58* (1.36)	-4.59 (3.03)	-1.38 (5.66)	1.41 (3.75)
Private Equity	-1.06 (5.30)	-1.89 (4.23)	-0.15 (1.12)	2.96 (2.22)	3.34 (3.96)	1.11 (3.24)
CIO = 1	3.76*** (1.40)	-0.49 (0.95)	1.34*** (0.34)	1.97*** (0.62)	-1.23 (1.09)	-1.14 (0.76)
Public = 1	-1.17 (1.47)	1.45 (1.21)	-0.21 (0.27)	-0.63 (0.51)	1.26 (1.11)	1.60** (0.76)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,088	2,665	2,665	2,665	3,088	3,088
R-squared	0.57	0.35	0.31	0.41	0.42	0.36

**Table 8: Asset allocation, expertise and networks**

This table reports IV 2SLS regression results of the relationship between the share allocated to venture capital funds and private equity funds and some university endowment specific variables. The first stage uses the total number of separate firms in which a member has worked as an instrument for his/her total network. Independent variables are the natural logarithm of total assets (logsize), board size, the proportion of trustees with experience in hedge fund, private equity, venture capital, general finance and portfolio management, whether the endowment uses a CIO, and a 0/1 indicator measuring whether the university is public or private. Year and state fixed effects are included. Standard errors are clustered at the endowment level. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

	First Stage	Second Stage	
	Network	Venture Capital	Private Equity
# Industries	0.24*** (0.01)		
Network		0.74*** (0.27)	2.11*** (0.60)
Log(Size)	0.02 (0.02)	0.55*** (0.14)	1.89*** (0.24)
Board Size	0.18*** (0.04)	0.03 (0.27)	-0.53 (0.37)
Finance (Non-Investments)	-0.06 (0.13)	0.27 (0.56)	-2.42** (0.96)
Asset Management	-0.39 (0.26)	-1.08 (1.13)	-2.97 (2.44)
Hedge Funds	0.35 (0.33)	-1.61 (1.80)	-3.32 (3.51)
Venture Capital	-0.58* (0.31)	2.31* (1.36)	-5.26* (3.04)
Private Equity	0.63** (0.25)	-1.15 (1.18)	0.52 (2.08)
CIO = 1	0.02 (0.05)	1.28*** (0.33)	1.82*** (0.61)
Public = 1	-0.05 (0.06)	-0.18 (0.27)	-0.54 (0.50)
Controls	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
First Stage F-stat	341.15		
Observations	3,088	2,665	2,665
R-squared	0.54	0.29	0.39

**Table 9: Return, expertise and networks**

This table reports OLS regression results of the relationship between total net return, “selection”, active return, selection within hedge funds, private equity and venture capital, PE + VC selection, VC total return and PE total return, and some university endowment specific variables. Independent variables are the natural logarithm of total assets (logsize), a measure of IC network, the proportion of members in hedge fund, private equity, venture capital, general finance and portfolio management industry, whether the endowment uses a CIO, and all the controls described before. Year and state fixed effects are included. Standard errors are clustered at the endowment level. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

	Total Return		Overall			Alternatives		
	All	Timing	Selection	Active	Timing	Selection	Active	
Log(Size)	0.33*** (0.06)	0.09*** (0.03)	0.25*** (0.06)	0.35*** (0.05)	0.22** (0.10)	0.57 (0.36)	0.57 (0.36)	
Board Size	-0.17 (0.13)	-0.03 (0.07)	-0.17 (0.13)	-0.17 (0.13)	-0.02 (0.17)	0.72 (0.56)	0.98* (0.52)	
Finance (All)	0.43 (0.45)	0.49** (0.20)	-0.00 (0.41)	0.66* (0.38)	1.64*** (0.57)	-2.43 (1.58)	-2.13 (1.50)	
Asset Management (%)	0.37 (0.91)	0.09 (0.45)	1.02 (0.89)	0.81 (0.84)	-2.47* (1.32)	-0.97 (3.34)	-0.73 (3.25)	
Hedge Funds (%)	1.35 (1.14)	1.02* (0.58)	0.56 (1.08)	1.79* (0.99)	6.44** (2.88)	7.46 (6.52)	9.13 (6.72)	
Venture Capital (%)	0.87 (0.88)	0.42 (0.51)	0.87 (0.91)	1.54* (0.80)	-1.41 (1.47)	11.98** (5.12)	12.96*** (4.99)	
Private Equity (%)	-0.41 (0.79)	0.07 (0.45)	-0.82 (0.78)	-1.07 (0.72)	0.21 (0.94)	1.49 (2.68)	1.43 (2.70)	
CIO = 1	0.13 (0.17)	-0.25*** (0.09)	0.24 (0.18)	-0.00 (0.16)	-0.37 (0.24)	-0.54 (0.87)	-0.80 (0.87)	
Public = 1	-0.06 (0.20)	0.01 (0.08)	-0.04 (0.18)	-0.02 (0.16)	0.15 (0.27)	0.17 (0.65)	-0.12 (0.63)	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	2,661	2,452	2,427	2,484	2,452	1,029	1,029	
R-squared	0.94	0.18	0.34	0.27	0.05	0.13	0.13	

**Table 10: Use of Funds and Expertise**

This table reports negative binomial regression results of the relationship between the number of direct alternative funds, alternative funds of funds, direct hedge funds used along with university endowment specific variables. Independent variables are the natural logarithm of total assets, the ratio of the number of alternative specialists to the total number of members specific experience in finance, hedge funds, PE, VC in the BoardEx data set, and the controls described in the main text above. Year and state fixed effects are included. We report marginal effects. Standard errors are clustered at the endowment level. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

	Direct Alternatives		Fund of Funds		Hedge Funds - Direct	
	General	Specific	General	Specific	General	Specific
Log(Size)	10.903*** (0.947)	10.861*** (0.861)	0.649*** (0.134)	0.780*** (0.135)	5.692*** (0.498)	5.348*** (0.475)
Board Size	2.070* (1.153)	-0.063 (1.436)	-0.197 (0.260)	0.270 (0.287)	1.831 (1.144)	0.089 (1.291)
Alternatives	6.229*** (1.766)		0.337 (0.353)		0.531 (2.168)	
Finance		2.561 (1.862)		0.268 (0.451)		-4.050 (3.071)
Hedge Fund		-0.017 (1.392)		-0.764** (0.376)		2.906** (1.175)
Venture Capital		4.092*** (1.298)		-0.864*** (0.314)		3.441*** (1.157)
Private Equity		3.048** (1.308)		-0.120 (0.308)		0.587 (1.413)
CIO = 1	4.892*** (1.680)	5.275*** (1.584)	-0.365 (0.424)	-0.405 (0.422)	-1.117 (1.286)	-1.155 (1.217)
Public = 1	-1.816 (1.440)	-2.135 (1.351)	-0.270 (0.376)	-0.315 (0.359)	2.857 (1.898)	3.106* (1.690)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,833	2,833	2,826	2,826	511	511

**Table 11: Survey Evidence**

This table reports ordered probit regression results of the relationship between the reported responses to (1) whether access to investment opportunities are difficult to undertake or identify (never, rarely, occasionally and frequently), (3) whether there are beneficial effects associated with the investment committee (strongly disagree, somewhat disagree, neither agree or disagree, somewhat agree, strongly agree), and (4) the possible impact on investment performance (very negative, negative, no impact, positive and very positive) and several endowment specific variables. Independent variables are the natural logarithm of total assets, the ratio of the number of alternative specialists to the total number of voting members, and the de-trended network measure described above. Standard errors are robust to heteroskedasticity. Significance levels are denoted by a \*\*\*, \*\*, and \*, which corresponds to the 1%, 5%, and 10% levels, respectively.

	Access		Recommend		Benefit		Impact	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log(Size)	0.294** (0.126)	0.358*** (0.133)	-0.083 (0.102)	0.001 (0.099)	-0.165 (0.125)	-0.160 (0.133)	-0.133 (0.101)	-0.102 (0.101)
Network (PE)	0.435** (0.186)		0.368** (0.167)		0.161 (0.196)		0.162 (0.175)	
IC Expertise		1.347 (0.942)		0.511 (0.673)		0.771 (1.222)		0.419 (0.841)
Observations	64	64	69	69	63	63	63	63
Pseudo R-squared	0.1267	0.1113	0.0243	0.0026	0.0152	0.0147	0.009	0.06